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WINTER RUNS.

THE MOTOR CYCLE

1D

Largest Circulation.

Founded 1903.

No. 458. Vol. 10. THURSDAY, JANUARY 4th, 1912.

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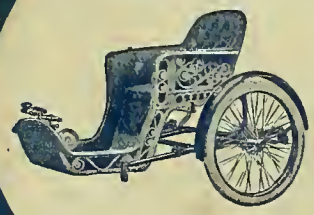
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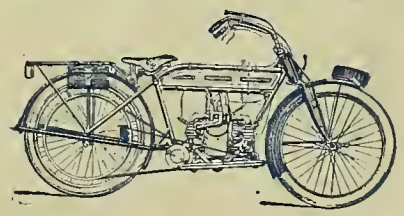
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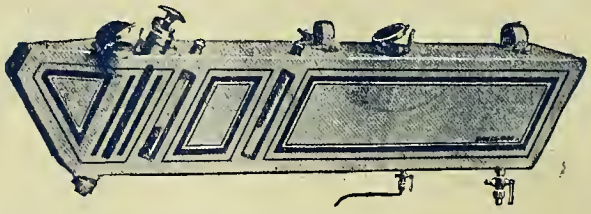
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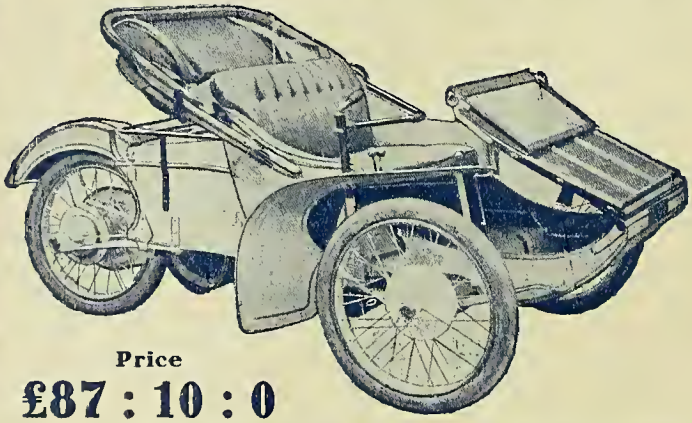
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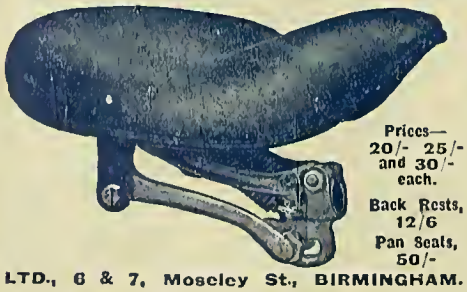
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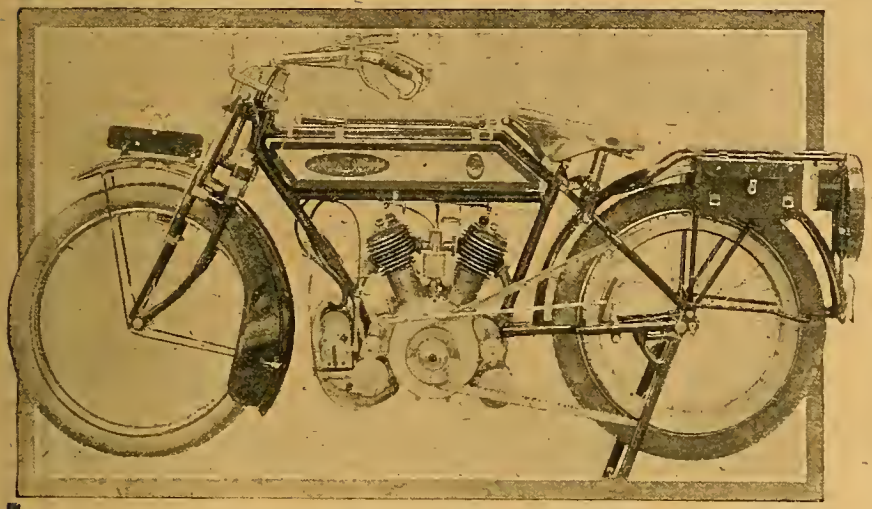
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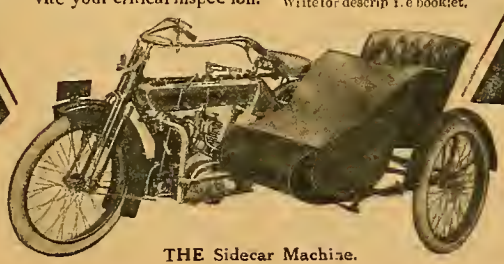
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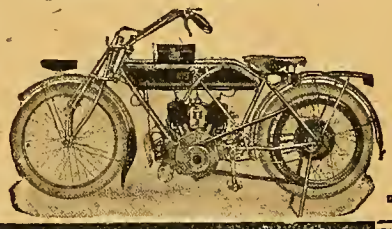
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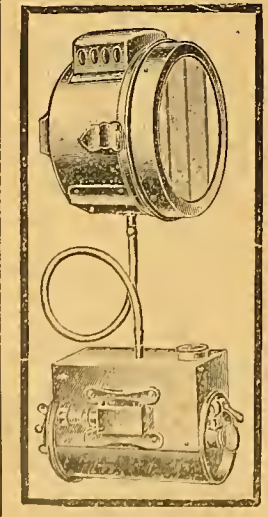
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ASPATRIA.

13th December, 1911.

I, Nicholas Stobart, of Aspatria, in the County of Cumberland, Cycle Agent, do hereby admit that I made certain slanderous statements reflecting upon the honesty and financial reputation of Messrs. Hitchens' Motor Exchange, Limited, of Morecambe. I now unreservedly acknowledge that such statements were untrue and had no foundation, and I express my regret for having made same.

(Signed)
NICHOLAS STOBART.

THE MOTOR CYCLE

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ADDRESS: 20, TUDOR STREET, LONDON, E.C.

Winter Runs.

THE popularity of winter holiday runs shows little sign of decreasing, if one may be allowed to judge by the number of competitors who took part in various club events in different parts of the country during last week. Whilst admiring the enthusiasm and grit of those who are willing to remain in the saddle for long hours while their machines traverse miles of muddy roads by night and day, one cannot fail to be impressed with the fact that the descriptions of the runs published in this issue are a severe indictment against the lack of cleanliness in the case of the average motor cycle.

The wheels of a motor cycle which have to revolve through seas of mud for hour after hour must necessarily become unrecognisable as articles of metal and rubber, but surely some form of efficient mudguarding should be evolved to prevent the rider and the vital parts of the mechanism from being liberally coated with mud splashings in a few miles from the start of a long distance winter event.

There are special forms of mudguard made for motor cycles which are fairly satisfactory in preventing what was so apparent in last week's events, but few riders took the trouble to make use of them. They entail some extra weight and are somewhat cumbersome, consequently the majority appeared to prefer to get dirty or, at the best, to improvise some form of makeshift guard which usually proved inadequate. This is a drawback to the pastime, and it raises a question whether it could not be overcome by making a more complete form of mudguard extension which could be supplied to order for all weather riding. The attachment might be combined with removable footboards, and correspond to their overall width, so that when the footboards were connected across, behind, and in front of the engine, a continuous wing from front to rear would be extended between the rider and the road.

That some machines are very much cleaner than others on winter roads is due to the fact that their designers ride year in and year out, and have the necessity of adequate mudguarding forcibly brought home to them. The average motor cycle is, however, still very much wanting in this respect.

Cost of Production.

IT is, perhaps, natural for those who are only concerned with the riding of motor cycles, and not with their manufacture or sale, to imagine that as the years advance prices should become easier. A correspondent this week voices this view, and complains of additions to the rider's comfort and increased efficiency of working being charged as extras. In most articles of commerce rapidity of production does spell a lowering of prices, but the motor cycle industry is not an ordinary one, and the prices of machines must remain stationary or show a tendency to increase with the general improvements that are demanded every year.

With regard to the charges for extras, items such as clutches and change-speed gears increase the cost of production enormously. They are not always charged as extras, but are included in the price of many machines, the total cost naturally being high in comparison with those mounts which are not provided with such aids to comfort in touring or passenger work. If our correspondent were to see the work entailed to produce a perfect change speed gear, we do not think he would consider their price extortionate.

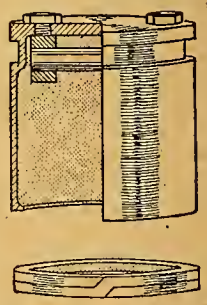
Examples of Modern Piston Design.

DURING the year we have heard a good deal about pistons, more especially just prior to the Tourist Trophy Race in the Isle of Man, when experts of several countries were trying their best to get the last ounce of power out of their mounts. Now a piston that will stand up to the strain of such a long race as the T.T. without warping will stand any ordinary use on the road, and as lightness is an important factor in a high speed piston it is not surprising to find that there is a general tendency towards lighter pistons in the 1912 touring mounts. Excepting for short-distance races, the steel piston is rapidly dying out, and I do not think it will ever become standard practice on motor cycles, for, although it can be made extremely light, it has the great disadvantage of warping after hard use in an air-cooled engine.

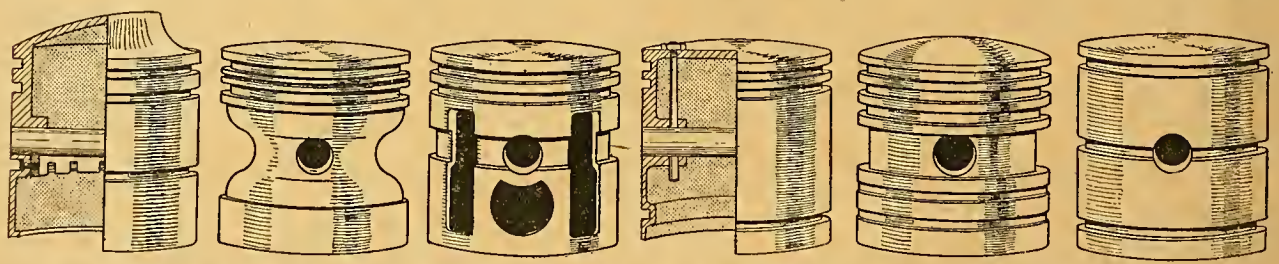
Why a Light Piston is Desirable.

There are several good reasons why a light piston is to be desired for high engine speed. Possibly the most important is that the piston is a reciprocating mass, and therefore cannot be accurately balanced in a single-cylinder engine, and it is probable that a carefully designed cast-iron piston can be made to weigh very little more than one made of steel.

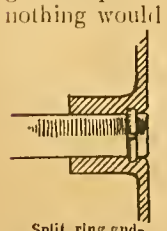
At the recent Olympia Motor Cycle Show I made enquiries about steel pistons of a firm which has had great experience on the subject, and was told that nothing would induce them to fit another steel piston, even for racing purposes. This experience speaks for itself. For touring mounts, the steel piston has yet another disadvantage, and that is that, owing to unequal expansion, the piston has to be made a very slack fit in the cylinder, as much as ten-thousandths being allowed, even in water-cooled engines. This is apt to cause rattle, and prevents the piston from assisting the rings to hold compression. These remarks, of course, apply to pistons machined out of solid steel, and not to those employed by the Hendee Manufacturing Co., and fitted to the Indian motor cycles. These pistons are very light, and are made of castings, annealed by a special process till they have the good points of a steel piston without its disadvantages. This piston has two rings at the top separated by a narrow but deep oil groove, and in the neighbourhood of the gudgeon pin the diameter of the piston is greatly reduced. This reduction serves to lighten the piston, and acts as a strengthening web to the gudgeon pin bosses. The gudgeon pin fixing is unusual, but should be very effective. A peg is driven through one end of the pin, and drops into grooves cut in the piston, thus preventing rotary movement, while sidewise motion is prevented by a split pin which passes through the supporting boss and is opened out inside the hollow gudgeon pin.



Showing the M.R. gudgeon pin fixing, and double piston ring.



(1) Showing gudgeon pin fixing and position of rings on Scott two-stroke engine. There are two top rings. The gudgeon pin is held by a wide central ring. (2) Indian, two rings at the top. Note the cut away piston walls. (3) Blumfield piston used on water-cooled engines. There are two top rings. The gudgeon pin is held by a wide central ring. (4) Excelsior, two rings at the top and one at the bottom. The gudgeon pin in this case is fixed by a taper pin extending through the piston head. (5) N.S.U., three rings at the top. The gudgeon pin is secured by a wide ring in the centre. Two oil grooves at foot. (6) New Hudson, three rings spaced equally, the centre one retaining the gudgeon pin.



Split ring gudgeon pin fixing employed on the B.S.A.

The Number of Rings.

On the question of the correct number and position of piston rings, manufacturers' opinions differ so widely that it is almost impossible to say what is the most usual practice, but probably two rings, both at the top of the piston, are to be seen most frequently.

The Moto-Rêve piston is well worth attention on account of somewhat unusual construction. There are no gudgeon pin bosses in the usual sense of the term, but the pin is carried on a pair of lugs which pass through the piston head, and are locked in position by nuts. This construction allows of extreme lightness, as the piston can be machined all over, both inside and out. Only one ring is used by this firm,

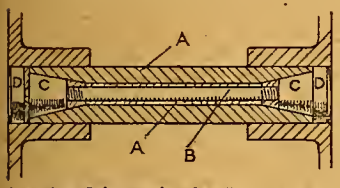
Examples of Modern Piston Design.—

and this is of the double type, the design of which can be easily followed from the accompanying sketch.

The Humber lightweight is another instance of the employment of a single piston ring. This construction should be very suitable for lightweight engines which run at comparatively high speeds, for the design lends itself to lightness, and at normal revolutions the extremely small amount of gas which might leak past the ring is negligible. However, it is easy to see that a broken ring would place one's machine *hors de combat*.

The Lower Ring Losing Ground.

In a few instances two rings are fitted, one at the top and one at the bottom, but this practice is not so common as it was a year or two ago, probably because the bottom ring tends to scrape the oil from the cylinder walls, thus interfering with piston lubrication. This trouble is occasionally avoided by drilling the piston above the bottom ring. In this case the bottom ring obviously is intended as a bearing only, for any gas that passed the top ring would escape through the holes in the piston. The design should be very suitable for racing work.



Ingenious fixing employed on the S.I.A.M.T.
A. Gudgeon pin split at each end.
B. Rod threaded at each end.
C. Cone screw heads.
D. Brass washers.

In the case of the New Hudson engines, three rings are employed—one at the top, one holding the gudgeon pin in place, and one at the bottom.

The Excelsior has two rings at the top and one at the bottom, but in this instance the bottom ring tends to keep the oil on the piston walls as it is fed in through the side of the cylinder and into the hollow gudgeon pin.

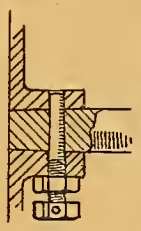
The only instance of three top rings which I chanced on at the Show was on the N.S.U. motor cycles.

An extremely light piston is used on the Blumfield water-cooled engine. It has two top rings, and has its walls cut away to a much greater extent than is usual on a standard machine.

The Norton piston is noticeable for several reasons. Two very wide top rings are used, and the diameter of the piston is greatly reduced round the centre; a continuous ring of oil grooves is also placed round the lower half. The rings themselves have oil grooves cut in them.

Security for the Gudgeon Pin.

Gudgeon pin fixing affords great scope for ingenuity, and many and various are the devices fitted. Perhaps the most common method is that of fitting the pin, which has a slightly tapered end, into a corresponding hole, and fixing it in position by a taper-ended set-screw.



A very common fixing. One end of the gudgeon pin is a taper fit in its boss, and is held in position by a taper-ended set screw. This in its turn is secured by a lock-nut and a long split pin.

Another common method to prevent the gudgeon pin touching the cylinder walls is to surround it with a ring, usually made of spring steel of considerable width. The Excelsior fixing is unusual, and can best be followed from the appended sketch. The Motosacoche has its gudgeon pins driven into the piston and guarded at the ends by small brass-headed caps. This method is becoming almost standard practice on lightweights. A most ingenious fixing is employed on the Scott machines, which consists of a light castellated ring screwing into the inside of the piston. The inner edge fits into grooves in the gudgeon pin. This ring is prevented from unscrewing by a pin which passes through the piston wall, which in its turn is prevented from coming out by a surrounding piston ring.

Universally-jointed Connecting Rod.

Although it scarcely comes under the heading of this article, mention must be made of the connecting rod used successfully for some years by the L.M.C. Co. The top end is made to form a universal joint, so allowing the cylinder to be removed with great ease, and compensating for any slight disalignment caused by careless bolting down of the cylinder, which occurs only too frequently at the hands of unskilled riders.

The appended sketches are not intended to be scale representations, but only serve to illustrate constructional details. UBIQUE.



SHEFFIELD AND HALLAMSHIRE M.C.C. ANNUAL WINTER RELIABILITY RUN TO BRIDLINGTON AND BACK.
The above flashlight photograph of the start from the Town Hall, Sheffield, was taken at 6.30 a.m. on Boxing Day.

ENGLISH-DUTCH RELIABILITY TRIAL.

Increasing interest in the International Trial next Summer.

ENTRIES continue to be received by *The Motor Cycle* for the above international trial, to take place in Holland on August Bank Holiday Monday, under the ægis of the Dutch Motor Cycle Club. The chief regulations appeared in our issue of December 21st, page 1388, but since then we have been asked by Mr. A. Citroen, hon. secretary of the Dutch Club, to make it quite clear that the twelve entries, *i.e.*, six amateurs and six trade representatives, will be divided equally into three classes according to the type of motor cycle ridden. The teams, therefore, will be classified as under:

	Class A. Machines up to 340 cc.	Class B. Machines from 340 to 500 c c.	Class C. Machines from 500 to 1,000 cc.
English team: Nos. E2, E4, E6, E8, E10, E12, E14, E16, E18, E20, E22, E24.	Two private owners. Two trade riders.	Two private owners. Two trade riders.	Two private owners. Two trade riders.
Dutch team: Nos. D1, D3, D5, D7, D9, D11, D13, D15, D17, D19, D21, D23.	Two private owners. Two trade riders.	Two private owners. Two trade riders.	Two private owners. Two trade riders.

Formula to determine cubical capacity, the dimensions being in centimetres:

Bore ^{2} × .7854 × stroke × No. of cylinders.

In Classes B and C machines may or may not have sidecar attachments as desired.

The Dutch M.C.C. make it clear that they desire as large a variety of machines as possible, and specially request that no one class be represented by one make of machine. Further, any one make should not appear in different powers in the three classes.

The British entries on going to press stood as follows:-

Amateur Team.	Trade Team.
W. Cooper (6½ Bradbury)	W. Pratt (3½ P. and M.)
Geoffrey Smith	J. Woodhouse (3½ Precision)
F. C Wasley	F. W. Barnes (Zenith)
L. A. Baddeley (7 Indian)	W. W. Douglas (2¾ Douglas)
Vernon Taylor (3½ Rudge)	
Seymour Smith (3½ Norton)	
Fred Dover (3½ Premier)	
A. E. Uffleman (3½ Humber)	
J. C. Bennett Mitchell (2¾ Douglas)	
Mrs. Cooke (3½ Triumph)	
C. C. Cooke (3½ Triumph)	
F. A. Hardy	
R. G. Mundy	
W. O. Oldman (5-6 Bat sc. or 4 h.p. Bat bicycle)	
C. W. Wilson (Morgan run-about)	

It will be seen that the popular 3½ h.p. class is already overfilled. In forwarding entries, the make, horse-power, and cubical capacity of the machine to be ridden should be mentioned where known. Trade entries must be accompanied by a fee of £1.

In sending his entry, Mr. F. C. Wasley (Bristol) offers to assist the party in any way if not chosen as one of the team, as the idea of an international reliability trial appeals to him as an excellent one.

Mr. and Mrs. Cooke are very anxious to go over to Holland, but special arrangements would have to be made, as the Herts County A.C. Kendal Tour is arranged for the August holidays, and Mr. Cooke is the hon. secretary of the organising club.

Mr. C. W. Wilson is the captain of the Cambridgeshire M.C.C., who accompanied the Dutch motor cyclists on their tour to the Isle of Man last year.

Mr. F. A. Hardy was one of the first to promise the Dutch motor cyclists in the Isle of Man that he would form one of the English party.



LONDON-EXETER-LONDON WINTER RUN.

W. Harry Bashall (Royal Enfield sidecar), H. E. Hull (Indian sidecar), and J. T. Bashall (Bat sidecar), approaching Shaftesbury on the return journey.

Cost of Running a Motor Cycle.

More Replies to a Reader's Query.

Sir,—Having read with much interest in *The Motor Cycle* lately various accounts of the cost of running a motor cycle, I enclose costs of running my motor cycle for five years.

I have had two machines. The first cost me £12 second-hand, and after running it four years I sold it for £8. The second, a modern magneto machine, I gave £18 for, and ran it last season, and now have an offer of £16 for it, so that I have only £6 depreciation for five years, which, however, I have not included in the cost.

You will no doubt agree with me that the average for five years' running must give a fairly accurate cost—more so than one year only.

I may say that I have done my own tuning up and any small alterations, also made my own belts, as I am connected with the leather trade.

DETAILS OF UPKEEP FOR FIVE YEARS.

Total mileage, 12,200 miles.

Licences	£6	0	0
Tyres	6	14	3
Petrol, 120 gallons	7	16	3
Oil, 10 gallons	1	14	3
Belts and fasteners	1	4	6
Ignition (mostly battery)	2	17	4
Lighting (lamps and carbide)		15	6
Repairs (including new spring fork)	6	15	0
Sundries	3	7	9
	£37	5	0

Cost .73d. per mile.

Trusting this account may interest readers,

A YORKSHIRE MAN.

Sir,—I have been prompted to write this letter by the communication appearing in your issue dated December 7th over the signature "Single Cylinder," in which the writer states that Mr. Walmsley's letter is absurd.

I have not the slightest idea who Mr. Walmsley is, but I thought the results he gave were most concise and very correct.

As regards depreciation I feel certain that any rider who buys a new machine and does 5,000 miles (that is a year's running for the ordinary motor cyclist) is lucky if he can obtain a price £10 less than he gave.

If the machine is not a new one, that is, has had a season's wear, to enable it to do 5,000 miles it will need new tyres, belt, and, most probably, several minor repairs and renewals which will, if added to the actual depreciation, amount to at least £10.

I have been a motor cyclist for the past six years, and have kept an accurate record of all expenses incurred, and, judging from them and the experiences of several other riders with whom I have talked over the matter, I am extremely doubtful if 5,000 miles can be covered in the course of a year by an ordinary motor cyclist for his pleasure at a cost of less than 1½d. per mile or £25 per year. This includes insurance, licence, keeping the machine in a good state of repair, depreciation, etc.

It would be interesting to know how "Single Cylinder" comes to his conclusion that a sidecar does not add much to running costs, as I think Mr. Walmsley's deduction of almost half as much again expense per mile, but on a much smaller mileage, is much more correct.

CECIL R. J. ROBERTS.

Sir,—The running costs of a 3½ h.p. Triumph may be of interest to your readers. All the items are actual payments, and represent a year's running of 7,007 miles, all of which was done with a Montgomery sidecar attached. The tyres include seven new ones and the belts six new ones. The machine was new in September, 1910, and cost, with sidecar, £67 5s., and has, of course, a free engine and a single gear. I have not had a single mechanical trouble, and have found the machine absolutely reliable on every occasion.

In September, after having had the mount twelve months, I took a tour to Killarney, and was surprised to find the machine come through intact after 900 miles of the worst roads I had ever been on for so long a distance during a riding life of over thirty years, including 60,000 miles on two Raleigh pedal tandems. It seems to me that your correspondents are largely guessing their costs, as the differences are so great between the various writers.

Miles travelled, 7,007.

Petrol, gallons	131	=	53.44 m.p.g.	
			Per Mile.	
Petrol cost	151.1	=	.26d.	
Belts	77.9	=	.134d.	
Tyres	270.5	=	.463d.	
Lubricating oil	11.5	=	.020d.	
Repairs	51.5	=	.088d.	
Additions	48.0	=	.081d.	
Licences and insurance	93.4	=	.160d.	
Sundries	12.5	=	.021d.	
Total	716.4	=	1.227d.	

To this I should add for depreciation £16 16s. 3d., being 25% on £67 5s., cost of complete machine. This shows:

	Per Mile.
Running costs	1.227d.
Depreciation	.576d.
Grand total	1.803d.

THOS. WADSWORTH.

Sir,—I have taken much interest in the discussion which has been going on in your paper with reference to the cost of running a 3½ h.p. motor cycle. I have had no sidecar experience, but have studied solo costs, which I append, estimated for 5,000 miles, which I consider a fair average mileage.

Depreciation per year	£6	0	0
Interest on capital, £50 at 5%	2	10	0
Tyres, one and a half per year	3	0	0
Belt, one per year	0	16	0
Petrol (48 gallons)	2	16	0
Lubricating oil and carbide	0	16	0
Replacing spares (generally plug and valve) and repairs	1	10	0
Tax, licence, and registration	1	6	0
Overhaul, £1 10s., last three years	0	10	0
Lamp, 30s., last five years	0	6	0
Total	£19	10	0

My figures work out at a fraction under one penny per mile, and are based upon the following considerations: The cost of a new motor £50. At the end of five years it should bring £20, if carefully used. This gives an average yearly depreciation of £6. If sold within five years the depreciation will be considerably higher, but a machine of good make should run for this period without causing much trouble.

I strongly advise any intending purchaser to invest in a new machine even if he is obliged to postpone getting a machine for twelve months to raise the "ready," as it is really more economical in the end. In a second-hand machine the repair and replacements bill will as a rule more than counterbalance the higher depreciation in a new machine, and less pleasure will be derived from the pastime owing to the incessant dread of a breakdown. I do not believe in the smart gentleman who can buy a second-hand machine "good as new" at £30, and sell it for the same figure, or at a profit, at the end of a season. He will probably find that on tyres, belts, etc., he has spent a considerable sum of money of which he fails to take account, or, if not, he takes it out of some "greenhorn." We cannot, obviously, all make someone else pay for our sport, and it is, consequently, the novice who is "had"—the man for whose protection this correspondence is being published.

Some of your correspondents do not make any allowance for interest on initial outlay. In my opinion, this is quite as much entitled to be taken into consideration as cost of petrol, and the reason is obvious. I also differ from some of your correspondents in the fact that I do not allow anything for insurance, as with good brakes and a moderate speed the risk is practically nil in the case of a careful rider. Accidents should be a monopoly of the fifty miles an hour fiend.

E. DAVIS WILEY.

M.C.C. WINTER RUN TO EXETER AND BACK.



THE second annual winter run, organised by the Motor Cycling Club, was duly carried through on the 26th and 27th December, and from every point of view can be written down as a huge success. That such an event meets a long-felt want was exemplified by the wonderful measure of support, the entries numbering 119. The weather outlook on Boxing Day was depressing in the extreme, rain falling heavily throughout the London district and the whole of the West of England where the route was arranged, and it therefore says much for the pluck and enthusiasm of the entrants, under these circumstances, that exactly 100 competitors signed their names on the first checking sheet at the starting point. The official headquarters were the Bulstrode Hotel, Hounslow, immediately adjoining Heston-Hounslow station on the District Railway. Although the first man was not due out until 6.45 p.m., several had assembled as early as 2 p.m., and thence onwards the ample yard at the rear of the hotel presented an animated scene with the preparations made by competitors and their friends to ensure the machines being in perfect order.

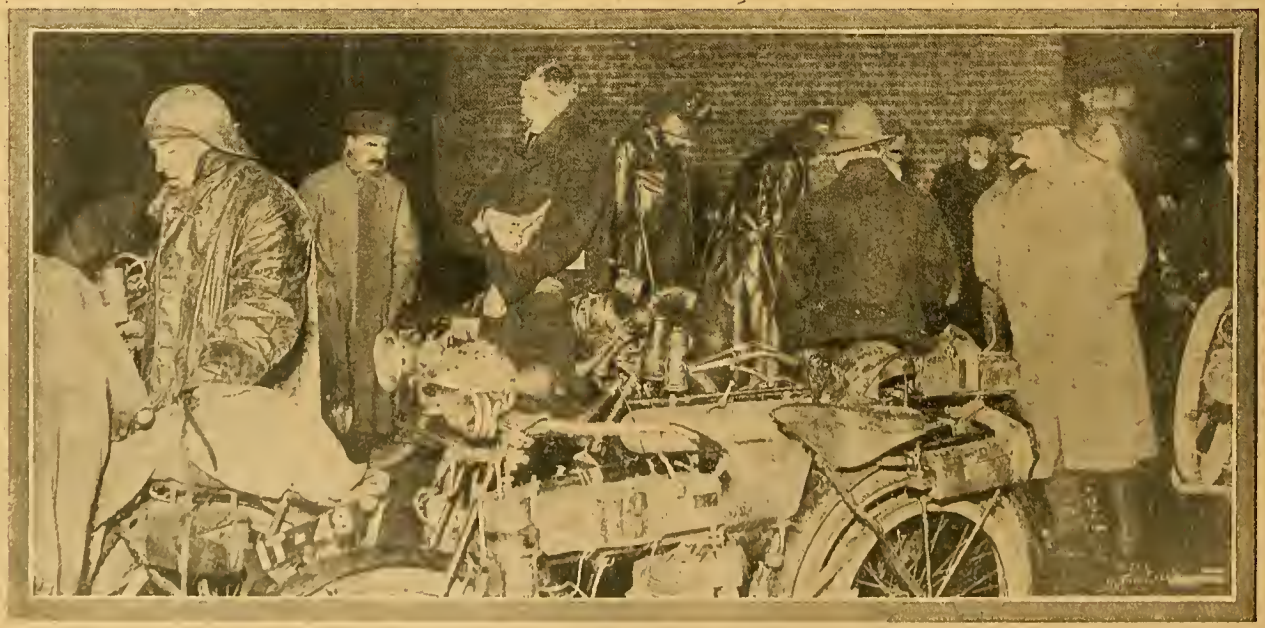
Mudguarding Devices.

With the prospect of continuous rain and terribly muddy road surfaces, attention was naturally directed to the rigging up of better mudguarding devices than are fitted to standard machines, and many of these amateur efforts were weird and wonderful. It cannot be said that the majority were successful in keeping the riders clean, for inside the first twenty miles nearly every motor cyclist was literally smothered from head to foot, back and front, with a thick plaster of mud splashes.

Matters are slightly improving in respect to mudguarding as compared with two years ago, but we are still a long way from that wished-for period when a man can mount his machine in dirty weather with the assurance that he will dismount in a decently respectable outward condition. The condition in which many of the competitors entered hotels at the feeding places *en route* was direful, and although well-wishers of the sport might have liked to have seen them sit down in clean clothing, they can hardly be blamed for infringing against the courtesies of everyday life. To get in and out of their wads of waterproofs and oilskins—many riders were doubly protected in this way—was such a long operation that rather than waste valuable time the minority merely rinsed some of the surface dirt from hands and faces, but refrained from removing their garments from start to finish. It is a pity some of our prominent machine manufacturers were not present at Salisbury on the outward journey, as the object lessons then presented for more efficient mudguarding might have borne fruit in future designs.

An Unsuccessful Change.

The first motor cycle was due to leave Hounslow at 7 p.m., but departing from the custom of the M.C.C. when cars are also entered for the club's events, the three cars programmed were despatched ten minutes ahead of the first solo machine. This plan was doubtless intended to avoid trouble to the singles in being passed by the more stable cars, but as happened in the present case, the good intentions of the club officials were not realised. The cars kept ahead only for about twenty-five miles, and, thereafter, the motor bicycles and passenger combinations were continually passing the three cars, involving careful driving on account of the treacherous condition of the severely cambered roads between Hook and Salisbury. The car drivers steered as near as they dared to their own side when the glare of an acetylene lamp showed up from the rear, yet we witnessed several close shaves when accidents were only averted by skilful driving of both motor cycle and car. Unless there may be some good reason for the alteration, we consider it will be better for the comfort of all concerned, for the M.C.C. to revert to the plan of despatching the cars in the rear.



Final preparations for the start in the yard of the Bulstrode Hotel, Hounslow.



E. B. Ware (Chater-Lea sidecar) at Salisbury on the outward journey. (Flashlight photograph.)

Considering the somewhat out-of-the-way spot wisely chosen for the start, a fair muster of spectators had assembled, and the constables, in charge of the local superintendent of police, were easily able to keep a clear passage for the men. Half a dozen portable A.S.L. acetylene fla brilliantly lighted the road, and permitted the officials to marshal the competitors in due order. Without semblance of confusion or hurry, the 100 competitors were started by Mr. F. T. Bidlake (timekeeper) in pairs, at intervals of one minute, the last couple leaving at 7.57 p.m. Fortunately, the heavy downpour of rain had ceased two hours earlier, and except for a slight shower for a few minutes about 11 p.m. and a lighter drizzle for less than five minutes when leaving Exeter on the return journey, the weather conditions overhead could hardly have been more favourable from start to finish. Needless to remark, the soddened state of the roads made it terribly heavy work for most, and, strangely enough, the worst surfaced roads were those nearer London, as far as Sunningdale, twelve miles from the start. We should ascribe the truly awful surface from Egham to Sunningdale as due to some poor system of tar spreading, because the tar-treated surfaces from Bagshot onwards were comparatively hard.

Not a Reliability Run.

The conditions of the contest were of the "go-as-you-please" character. Inasmuch as there were no restrictions upon pace, repairs or adjustments could be effected with or without assistance by the driver on the roadside, or in garage, and in many cases the latter method of arriving home somehow was freely indulged. To describe this event as a "reliability trial" would convey a false impression, nor does the M.C.C. claim anything more for it than a "club run."

The majority of machines, of course, went through with just those minor troubles in the way of punctures, belt shortening and the like, which an ordinary tourist experiences, yet it is just as well to emphasise the fact that the good and the bad—in the way of reliable and unreliable machines—scored equally well at the finish. The only time schedule set was that the men were not permitted to leave Salisbury (outward and homeward journeys) and Exeter before fixed times, and although a check was established outside Yeovil and also at Andover on the return, we cannot learn whether too early arrival at these places will affect results. This hardly seems possible, as one of the officials who was competing arrived at Exeter some three hours before he was due to return.

The arrangements for marking the route at awkward corners and turns were admirable, large arrows fixed to boards being illuminated by shielded lanterns, so that the light fell only upon the arrow and did not throw a glare into the eyes of the approaching driver. Unfortunately, the carefully-devised scheme for this purpose was not carried through properly by the local people at two very important places. The first was at the sharp left turn from beneath the avenue of trees beyond Salisbury, at the entrance to Wilton, where one or two competitors went miles astray last year. The second place was at the uphill fork a quarter-mile west of Andover. Whether any drivers went wrong on the present occasion we could not learn, but if they did the M.C.C. officials should not be blamed, as we know they had taken special precautions concerning the two places mentioned.

In all other respects the organisation was perfect, and we must accord praise to the County Hotel at Salisbury, where the hot supper overnight and the luncheon on the return journey were meals served quickly under conditions that invited appetite to those who were tired after the long journey.

In the Salisbury Control.

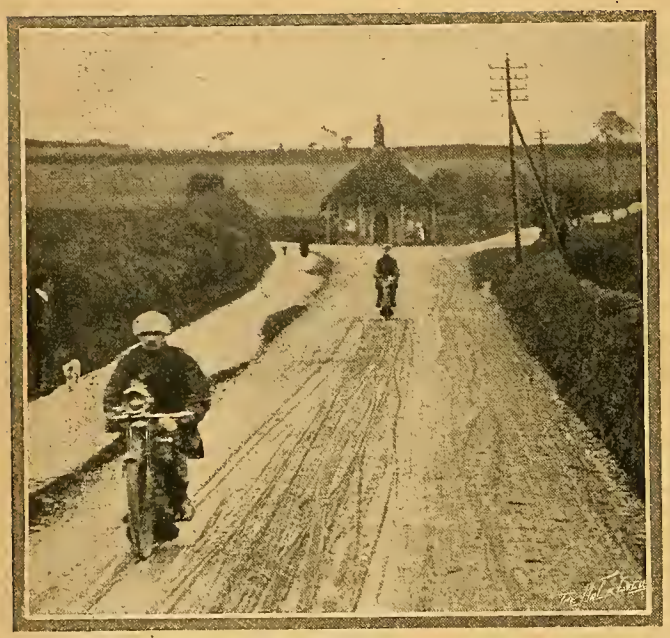
Up on the high downs between Andover and Salisbury a keen north wind cut straight across the open road and discovered the weak places in clothing equipment, and the compulsory stop at the cathedral town was welcomed by everyone. The first respectable hill on the outward journey—Ludlow Hill, three miles east of Shaftesbury—brought a number of men out of the saddle, many of the drivers of low-powered sidecars having to dismount and run alongside. Having to stop at Shaftesbury for petrol (Mr. Young, the local ironmonger, kindly turning out of bed to supply our wants), the narrow main street afforded an opportunity for judging the merits of various silencers, and whilst waiting there we were able to listen to the grades of noise created by about seventy of the engines. Not more than half a dozen were quiet, as the word is understood amongst motor cyclists, a few others were less quiet, but by far the larger number were horribly and insistently noisy. One sidecar driver and the rider of a single-cylinder solo machine went through the town with exhaust cut-outs wide open, and for the sake of the sport's good name we would have noted their numbers. This unpleasant duty was rendered impossible, because numbered armlets for the drivers were omitted from this year's regulations, and as the numbers on the tanks were generally hidden by the respective driver's clothing, it was difficult to recognise anyone.

Occasionally, the noise of an approaching engine could be heard more than a quarter of a mile away, and when entering the street the reverberations thrown backwards and forwards from the houses resembled the firing of a Gatling gun. After one or two machines had passed by, it was evident many of the inhabitants were awakened from sleep, as windows were opened and heads thrust out. It is true that



A STUDY IN WINTER MOTOR CYCLING EQUIPMENT.
The competitors are H. G. Dixon (New Hudson), J. A. Neumann (Triumph), and Roy W. Walker (New Hudson).

M.C.C. Winter Run to Exeter and Back.—



Competitors approaching Chard after descending the hill.

one of the regulations of the contest stated, "Noisy driving will lead to disqualification."

Flooded Roads.

Those who competed last year were expecting trouble from flood water at Wilton. Fortunately, although the watercourse here was running bank high, the roadway was clear. However, the road which crosses the Blackmore Vale at Henstridge lived up to its reputation, two stretches, each about fifteen yards, being flooded to a depth of a few inches. Most of the drivers picked up the glint of the water early enough to avoid rushing through at high speed, and the one or two who had faulty lamps experienced little difficulty in reaching the other side.

The second outward control at Yeovil formed a delightful change from the dark country roads and poorly-lighted streets of the villages traversed from Salisbury, Moffat's depot in the main street being brilliantly lighted. The sensible men not only secured fuel for their machines, but also refreshed themselves with hot coffee at the Mermaid Hotel, for there were still forty-six miles to complete before Exeter and breakfast were reached.

Chard Hill proved a Stern Test.

The worst part of the journey was still to come, particularly for those who were not sure of the hill-climbing abilities of their mounts on strange gradients at night time. As hills go nowadays, Chard Hill is an ascent which the average motor cyclist would laugh at, if informed he would have to climb it in the course of an ordinary trip. After what we witnessed at Chard, we are beginning to wonder whether the modern motor bicycle is still a long way short of perfection, or whether the average driver does thoroughly understand his mount.

We stayed on top of the hill for about forty minutes, and certainly about threequarters of those who passed during our stop either ran beside their machines or had to be ignominiously assisted. For this latter service, a party of local good Samaritans, who had come out on a car and motor cycles from Martock to see the fun, saved many a weary rider from the hard work of pushing his machine to the summit. From the junction of roads at the top of the hill we were able to observe the long string of lamps for nearly a couple of miles before they were temporarily hidden by the turn at the foot, and it was amusing to notice the gradual decrease of engine noise as the eventual failures gradually petered out at the lower slope, to come finally to a standstill midway. When the throng was thickest, we reckoned eleven machines standing or being pushed up upon one occasion, and the shouts of "There's another!" from the small group of spectators were none too complimentary to the ears of the unfortunates. When about half the competitors had passed, three sidecar machines came to rest almost simultaneously and nearly in a straight line at the same spot on the middle of the hill.

A very few of the drivers who knew the neighbourhood considered discretion the better part of valour, and went round by an easier and nearly parallel narrower road which joins the main road at the top. Eli Clarke came up the latter way, and dismounted at the top to inform us his throttle lever had jammed and he could not obtain more than half gas.

The dreaded Yarcombe Hill, eight miles this side of Honiton, had very few victims, perhaps accounted for because its length is its worst feature, the gradient nowhere exceeding 1 in 10.

Arrival at Exeter.

Up to 8.30 a.m. exactly 91 out of the original 100 starters had checked in at Exeter, 161 miles, and with daylight in front of them all the way to Bagshot—sixteen miles from London—the chances of all these successfully surviving to the finish seemed extremely hopeful. Deacock possibly retired at Exeter, as we met him coming in when we were half-way back to Honiton.

With a dropping wind the homeward journey was covered under very much more pleasurable conditions than the outward, and as the roads were very much drier, risk of side-slip was removed. The only really formidable hill, riding towards London, is that entering Shaftesbury, and here, at the last wide turn near the top, a small crowd of motor cyclists and autocarists had assembled in the hope of many riders coming to grief. (Before reaching the foot of this hill we passed Hugh Gibson running up a short slope to relieve his sidecar machine from his weight; we were surprised to find Gibson on the route, because on arrival at Salisbury overnight he had reported trouble with the front wheel bearing, and that he intended to retire. He duly checked at Exeter, so was doubtless able to put the matter right.) The spectators at Shaftesbury were agreeably disappointed, nearly every man reaching the top without a dismount. The flood water at Henstridge had materially decreased in the intervening twelve hours, only a short patch of less than half a dozen yards having to be negotiated.

With the wind nearly astern, good speed was accomplished across the downs to Andover, but with a nasty involuntary



Nearing Shorborne. H. G. Bell (4-cyl. F.N.), E. B. Dickson (Eat), W. Coopor (Bradbury), and H. Karslake (Rover).

M.C.C. Winter Run to Exeter and Back.—

check when running down into that town. There was not a sign of loose stones here on the preceding night, but the local authorities had kindly selected the one day in winter when most motor cyclists enter the district for carefully carpeting the whole width of the road for fifty yards with sharp-edged road metal. In justice to the local surveyor we must state that a steam roller was working, but at least three-parts of the stone carpet had not been touched by the roller, with the consequence that all the drivers had to dismount and push their way across.

A similar patch of stones was met on the downward approach to Hartford Bridge, some miles nearer London, but in this case the steam roller was not given more work than could be properly accomplished in the day, the whole patch of metal being finished off smoothly.

The remainder of the journey was uneventful, save for the fearsome six miles of greasy mess, misnamed a road, from Sunningdale to Egham, over which steering was so unstable that it was wonderful how the single-trackers managed to keep upright. At the finish a big crowd of enthusiasts had come down from town to welcome their friends, and here assistance from the police was welcomed by the staff of officials in order quickly to check the arriving competitors.

We were rather interested to learn Alan Hill's experience with the dissolved acetylene gas cylinder which he carried upon his Rudge sidecar machine. He informed us that he had not suffered a moment's trouble, and that he much preferred this means of illumination in comparison with a generator, inasmuch as the pressure was absolutely constant throughout, the flame never flickered, and he was sure the light was whiter on account of the absence of any impurity.

Woodhouse reported considerable magneto trouble, W. H. Bashall was annoyed by a broken lamp bracket, A. J. Stevens had to crawl over the last six miles owing to a faulty acetylene generator, and P. W. Pumphrey burst a tyre near the finish, but managed to reach Hounslow to time.

Perfect Organisation.

There were no grumbles, which sufficiently testifies to the care and completeness with which every detail of organisation had been perfected by the honorary officials of the club. Mr. R. H. Head was chief marshal and judge, Mr. F. T. Bidlake was timekeeper, and amongst other willing helpers were Dr. C. Gibbons, Messrs. E. Gould, F. J. Jenkins, C. J. Seed, F. Albert, H. Chester-Fox, etc.

Personal Notes.

V. Olsson got water on the magneto at the floods near Sherborne, and in attempting to restart fell into a ditch with the machine on top of him.

W. Cooper secured the honour of being first back at Hounslow, as he was also first to start, thus holding his position throughout the run.

At the finish Hemy declared he would not ride back (even to Basingstoke) for £25.

The driving, generally, was a great improvement on last year. There was a good deal more give and take, and even the sidecar drivers had more consideration for the soloists.



Arrival back at Hounslow on Wednesday evening, Mr. R. H. Head (on right) checking the competitors.

All four Ariel riders, F. C. North, G. Boswell, C. B. Duberly, and S. C. Perryman, gained gold medals.

R. Croucher ran into a stray pony at Sherborne. His two-speed Kerry-Abingdon had given no trouble at all up to that point.

H. G. Bell arrived at Exeter at 5.2 a.m., which represents the earliest possible time under the rules. His average speed from Salisbury was twenty miles an hour, and his 1912 clutch model F.N. was geared 6 to 1.

The official observer for silence awarded the honours to R. O. Clark's four-cylinder F.N. and sidecar and Frank Smith's Clyno and sidecar as the two quietest machines to pass him.

List of Gold Medal Winners.

W. Cooper (3½ Bradbury)
W. H. Wells (7 Indian sc.)
J. Woodhouse (3½ Grandex-Precision)
L. A. Baddeley (7 Indian sc.)
W. A. Sale (7 Indian)
H. Karslake (3½ Rover)
W. T. W. Wartnaby (3½ W.D.)
P. H. Bentley (3½ Triumph)
R. B. Clark (2¾ Douglas)
E. B. Dickson (8 Bat)
W. H. Bashall (5-6 Enfield sc.)
J. T. Bashall (7 Bat sc.)
W. H. Egginton (6 Zenith sc.)
V. Olsson (6 Trump-Jap)
A. R. Abbott (3½ Bradbury sc.)
R. W. Walker (3½ New Hudson)
H. G. Dixon (3½ New Hudson)
W. Pratt (3½ P. and M.)
G. Wray (3½ Bradbury sc.)
H. Gibson (3½ Bradbury)
H. Foote (8 Bat)
W. F. Guiver (3½ Rudge)
B. A. Hill (3½ Rudge, sc.)
C. Q. Roberts (3½ Rover)
T. Chapman (3½ Arno)
A. Dickinson (3½ Triumph)
E. L. Mather (5-6 F.N.)
S. R. Cooke (3½ Rudge sc.)
V. Wilberforce (2¾ Douglas)
H. Patteson (3½ Triumph)
W. P. Tippett (3½ Brooklands)
J. Chater-Lea (8 Chater-Lea sc.)
R. Holloway (3½ Premier)
A. P. Maurice (3½ Premier sc.)
E. Clark (2¾ Douglas)
E. J. W. Hughes (8 Chater-Lea sc.)
H. C. Mills (3½ Premier)
N. O. Seresby (3½ Rudge)
C. B. Duberly (3½ Ariel)
G. Boswell (3½ Ariel)
J. A. Neumann (3½ Triumph)
P. W. Pumphrey (2¾ Arno)
J. Stuart-White (3½ Rex)
T. W. Tattersall (5-6 R.A.G.S.)
E. B. Ware (8 Chater-Lea sc.)
J. S. Holroyd (2½ Motosacoche)
D. S. Baddeley (3½ Phelon and Moore sc.)
P. Bounds (8 Bounds-Jap sc.)
S. C. Perryman (3½ Ariel)
R. E. Guest (6 Matchless sc.)
V. Taylor (3½ Rudge)
F. Smith (5-6 Clyno sc.)
A. J. Stevens (5 A.J.S. sc.)
C. W. Meredith (3½ Bradbury sc.)
W. C. Hemy (3½ Service)
P. W. Moffat (2¾ Douglas)
E. Kickham (2¾ Douglas)
G. N. Higgs (5-6 A.C. Sociable)
F. J. Watson (3½ Swift)
G. L. Fletcher (2¾ Douglas)
N. C. Dear (2¾ Douglas)
R. O. Clark (5-6 F.N.)
R. G. Mundy (2 Alcyon)
F. L. Goodacre (3½ A.S.L.)
S. B. White (4 Service)
R. Lord (6 Rex Sidette)
G. Griffith (3½ Rover)
J. Baker (3½ Rover)
H. S. Morgan (8 Morgan runabout)
H. A. Cooper (Bradbury)
E. G. Whelon (3½ Zenith)
E. Babington (8 Bat)
A. T. Tamplin (6 Matchless sc.)
P. G. E. James (8 Chater-Lea sc.)
H. C. Griffin (8 Bat-Bowden sc.)
F. C. North (3½ Ariel)
H. Johnson (3½ T.T. Triumph)

The following finished, but were disqualified for exceeding the time limit or finishing too soon.

H. E. Hull (7 Indian sc.)
H. G. Bell (5-6 F.N.)
C. Patteson (6 Zenith sc.)
J. Peachey (3½ Premier)
G. W. England (8 Morgan Runabout)
H. A. Thompson (8 D.R.C. sc.)

The undermentioned started, but did not finish:

W. H. Elce (6½ Rudge sc.)
J. Robertson-Brown (4¼ Ivy-Precision sc.)
C. F. Halsall (5-6 Clyno sc.)
H. R. D. Simpson (4 M.M.)
F. B. Webber (8 Morgan runabout)
R. Ellis (4¼ Calthorpe sc.)
S. Browne (3½ James sc.)
L. B. Feeny (4 Moto-Rêve sc.)
F. Thomas (7 G.O.K. sc.)
A. V. Deacock (6 N.L.G. sc.)
R. Croucher (3½ Kerry Abingdon sc.)
A. Sproston (3½ Rudge sc.)
A. Mabon (3½ Rudge sc.)
F. Begley (5 Matchless)

M.C.C. Winter Run to Exeter and Back.—

H. B. Karslake's Experiences.

A most uneventful ride! I got away from Hounslow with the W.D. just in front and all went well until we got to Salisbury, where I took a bit out of the belt. Then on to near Fovant, where a car and sidecar were having a butting competition halfway up a hill. I don't know which won, as I did not stop. After this I was sailing along merrily near Shaftesbury when Olsson's cheery voice rang out of the darkness, "Got a burner?" I had not a spare, so could not help him. At Yeovil two local motor cyclists evinced great interest in my machine, and said the belt shield "looked like a piece of Dreadnought work"; they did not know that I was the erstwhile driver thereof!

Approaching Chard I could see lights on the hill on the other side of the valley, so after passing the town I gave my Rover an extra charge of oil, and with the aid of the change-speed we roared up on half throttle, the spectators giving a cheer as we passed. Then came Yarcombe Hill with its S twist halfway up, taken on bottom gear to the tune of a machine conking out behind. On to Exeter for breakfast and daylight.

The subsequent restart had to be made, and out we rode into the rain, gloom, and black slime. Nearing Sherborne we struck a flooded road, and I nearly drowned a photographer who was trying to snap me from a car by going through the water all out. I hope he got a picture!

At Salisbury I shortened the belt again and re-inflated the back tyre, and we left for home. Nearing Andover I had my only involuntary stop caused by the belt fastener breaking. At Basingstoke we found the M.C.C. hon. sec. officiating at a secret check. At Hartley Row I lit up, and from there rode to Hounslow at a steady pace, the surface being vile and atmosphere foggy. Every man who has won a medal thoroughly deserves it.

How the Brothers Bashall fared.

It was pouring with rain when we left home about three o'clock, but as we both had oilskins which my father obtained from the Falmouth pilots we kept dry. I rode a new 5-6 h.p. Royal Enfield with a friend in the sidecar.

Unfortunately, on pushing my machine into the garage at Hounslow the silencer bit on the cobbles, and on the way to Chard the baffle tubes dropped out, so I was obliged to ride without a silencer. Half-way up Yarcombe Hill I overtook my two brothers on the 8 h.p. Bat and sidecar. They had taken the corner about 40 m.p.h. and simply tore off the back cover, tube and all. The Bat is the same sidecar that holds the hour record, and was the only single-geared twin machine with sidecar to get through. Some cheerful friend had told my brother he would want seven belts at least, but he had on the same Lyso belt he used in the hour record, and it took him through splendidly. The way we both bounded up the hills was really fine, and we reached the turning point together punctually.

On the return run it was very difficult to keep down to schedule time. The Bat and Enfield sidecars ran splendidly. It was a happy idea of the Hutchinson Tyre Co. to have a stock of waders at the start.

HARRY BASHALL.

A Lady Passenger's Impressions.

In spite of bad luck and awful weather most of the time, I would not have missed the run for a good deal. What struck me most of all was the earnestness and enthusiasm shown by the riders and their friends. There was nothing particularly noteworthy at the start—just a little excitement when some petrol on one of the cars caught fire, but the flames were soon extinguished. We started to time, my husband driving a 7 h.p. Indian with Mills-Fulford sidecar. A friend had lent us a sheep's skin sleigh-bag, and I was perfectly warm all night. The engine ran very well, and took all the hills splendidly, and all went "merry as a marriage bell" till Salisbury.

The scene in the hotel yard was very interesting to one who had never witnessed such before. One scrap of conversation amused me. It was a question of tyres, and a novel meal was being prepared for the manager of a famous tyre company. He had promised to eat a certain tyre if it punctured, and the rider of the machine to which it was fitted declared "he will jolly well have to, and it will be fun to see him do it." I do hope if it were anything like our tyre he was allowed to wash it first.

After leaving Salisbury half-way up a steep hill something suddenly went wrong, and the next moment we and all our goods and chattels were reposing on the side of the road. Happily neither of us was hurt, and my husband set to work, and in course of time—a good long time—we were ready to start again.

Later on our chain decided to leave the sprocket again, and we had to set to work in the dark to replace it. Nothing more eventful than scaring a few venturesome young rabbits happened from this time till we reached Exeter, and dawn was never welcomed more eagerly. Exeter was reached two hours late. However, we had a wash and some breakfast, and were off again as soon as possible. The run back was happily much less eventful, and we had only one or two minor troubles.

We reached Salisbury in very fair time, had a rest and dinner and off once more. As far as Basingstoke the run was most enjoyable, and here we tasted the joy of being early arrivals. From here until a good way past Bagshot everything went well, and we were quite hoping to get back in good time.

But the "best laid plans of mice and men" have to give way before a gashed tyre, and so we will draw a veil over the rest of the story. After signing in at the Bulstrode Hotel, two very wet bedraggled people did eventually arrive home and were welcomed by three small persons (who ought to have been in bed) just as joyfully as if all the honours had been showered on us.

A.M.H.



CHECKING POINTS ON THE LONDON-EXETER-LONDON 24 HOURS WINTER RUN.

(1) The scene at Salisbury. (2) At Yeovil on the return journey. The event created great interest all along the route.

BIRMINGHAM TO YORK AND BACK.

THE Birmingham Motor Cycle Club's run to York and back took place under extremely adverse conditions, the fog and greasy state of the roads rendering it a matter of some difficulty to average the schedule speed of exactly 20 m.p.h. This accounts for the fact that only six competitors finished before midnight. The route was *via* Sutton Coldfield, Tamworth, Ashby, Nottingham (check), Mansfield, Worksop, Doncaster, Ferrybridge, Tadcaster, and York, returning to Birmingham by the same route.

At York the weather was foggy and the roads and tramlines unpleasantly wet. However, Baxter (6 h.p. Rex) arrived punctually, followed by South, whose Rudge-Canoelet combination looked beautifully cosy and was much admired by local motor cyclists. These two were closely followed by Rowlandson (Rudge), Ball (Triumph), Young (Kerry), Blackwell (6 h.p. Zenith), Busby (2¾ h.p. Humber), McNab (Trump-Jap), Clarke (Corah), Duke (Zenith), Bell (New Hudson), and Pollock (James). Tom Peck (Rudge) arrived twenty-five minutes later and reported tyre trouble. Mansell (Singer), Evans (Humber), Warton and Norton (Norton) failed to put in an appearance. The last-named veteran was reported to be hung up with valve trouble fifty miles back, much to the disappointment of the local enthusiasts, as his performances at Sutton Bank in past years have made him well known throughout the North.

There appears to have been a slight hitch somewhere about the luncheon arrangements, for the competitors hurried through their meal and were ready to start in an hour, only to find that they would not be allowed to start until they had spent an hour and a half in the city.

However, a start was made at the appointed time, and all got away promptly and well, though G. Bell had to start the return journey with a leaky rear tyre.

Some of the competitors did not finish until the early hours of the morning, one reporting himself at 3.30 a.m. Never has such a severe winter trial been held in the Midlands, and the competitors generally agreed that an average of 20 m.p.h. over such difficult roads, coupled with so much riding in darkness, rendered more severe by the fog, was rather too much to expect. There were several 3½ h.p. sidecars in the trial, including G. H. Mansell's Singer, J. L. Norton's Norton, and W. D. South's Rudge.

Below we give the finishing order of the six competitors who reached Birmingham before midnight:

V. Busby (2¾ Humber)
F. A. McNab (3½ Trump-Jap)
W. Baxter (6 Rex sc.)
S. A. Rowlandson (3½ Rudge)
R. W. Duke (3½ Zenith)
W. G. Blackwell (6 Zenith)

Official Results.

The official results place the first three as follows:

1. F. A. McNab (3½ h.p. Trump-Jap), total time error 1m. 45s., gold medal.
2. V. Busby (2¾ h.p. twin Humber), total time error 4½m., silver medal.
3. E. F. Baxter (5-6 h.p. twin Rex and sidecar), total error 19m.

The above awards are made as special recognition of the competitors' performances under adverse conditions, though actually not one competitor is entitled to a gold medal, as the rules did not permit of more than one minute error at a control. McNab arrived at all controls dead on time, except Nottingham. Pollock, Peck, Clarke, Ball, and Young checked at Nottingham on the homeward journey, but did not reach the Birmingham check up to 11 p.m. P. J. Evans (Humber) retired between Doncaster and Nottingham.





AT THE YORK CONTROL IN THE BIRMINGHAM M.C.C. TWELVE HOURS' TRIAL.
(1) Signing the checking sheet outside the Windmill Hotel.
(2 and 3) Leaving the Station Hotel, York, on the homeward journey. Left to right: S. A. Rowlandson (Rudge), V. Busby (Humber), W. G. Blackwell (Zenith), A. Young (Kerry-Abingdon), G. Bell (New Hudson), T. Pollock (James), and K. Clark (Corah).

CURRENT CHAT

TIME TO LIGHT LAMPS.

Jan.	4th	5.0 p.m.
,,	6th	5.3 p.m.
,,	8th	5 5 p.m.
,,	11th	5.10 p.m.

1912.

A happy and prosperous New Year to all our readers!

Our Record.

This is the tenth year of publication of *The Motor Cycle*. It starts the New Year in the most healthy state of its existence, for it never had more readers than at present..

English-French Trial.

An English-French trial is suggested for the Easter holidays. W. Cooper is corresponding with a member of the Auto Cycle Club de France on the matter.

Two New Competitions.

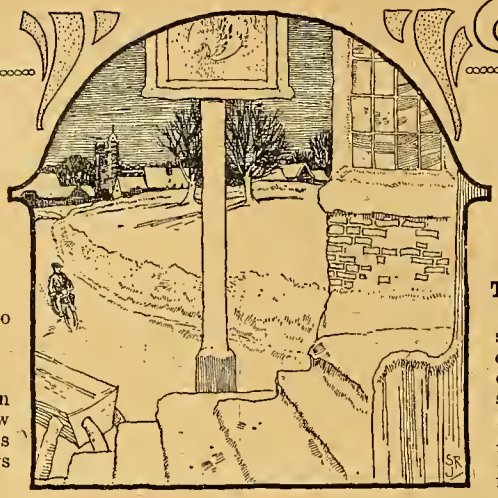
The Birmingham M.C.C. is to hold an open reliability trial to Perth and back at Easter, starting on Easter Saturday, resting on Sunday, and returning Easter Monday. A hill-climb will be held at Shap Fell on the outward journey. Another innovation is an open competition on May 18th, for passenger machines only, the maximum cost of which will probably be limited to £120 or less. It certainly should be much less in our opinion.

The Auto Cycle Club de France.

The above French organisation has decided on the following dates for its 1912 events, briefly referred to in our last issue. The mile and kilometre speed trials with flying starts will take place in March, the 300 kilometres (185 miles) race over a closed circuit the second week in April, and the Tour de France reliability trial will occupy the last two weeks of August. In all the above will be arranged classes as follows: Motor bicycles—Class I., under 225 c.c.; Class II., under 350 c.c.; Class III., under 500 c.c. Passenger motor cycles—Class I., single cyliuders under 500 c.c.; Class II., two cylinders under 750 c.c. Quadcars and runabouts—Class I., single cylinders under 750 c.c.; Class II., two cylinders under 1,000 c.c.; Class III., four cylinders under 1,250 c.c. Motor bicycles must weigh not less than 40 kilogrammes (88 lbs.), and in the passenger classes the combined weight of passengers carried must not be less than 150 kilogrammes (23½ stones).

The Tour de France.

The route comprised by the Tour de France passes through the following towns, with Paris as the starting and finishing point. Starting northwards, the principal places passed are Lille, Boulogne, Dieppe, Havre, Rouen, Trouville, St. Malo, Nantes, Bordeaux, Clermont-Ferrand, St. Etienne, Lyons, Mâcon, and Dijon. The total distance is about 1,860 miles.



Invitation Trial in Yorkshire.

The Ilkley M.C.C. is in communication with a number of Yorkshire clubs regarding an invitation reliability trial on January 20th and 21st. It is proposed to start at 5 p.m. from Ilkley, and journey *via* Skipton, Buckham Brow, Kendal, over Shap Fells, to Penrith, then *via* Hartside to Alston, the highest market town in Yorkshire, where the night will be spent. The homeward run is through Middleton-in-Teesdale, Barnard Castle, Brough, Kirkby Stephen, Hawes, up Kidstones Pass, and back to Ilkley. Should sufficient guarantees be received (twenty are required), the trial will be held. If the weather should be severe, competitors are in for a very rough time as the course chosen is severe at the best of times.

SPECIAL FEATURES.

EXAMPLES OF MODERN PISTON DESIGN.

WINTER RELIABILITY RUNS IN ALL DISTRICTS (Described and Illustrated).

The French Winter Hill-climb.

There seems to be some misunderstanding as to who won the unlimited class in the above hill-climb, which is easily explained when we mention that seven different journals gave A. J. Moorhouse (Indian) as the winner. *The Motor Cycle* report, crediting W. H. Bashall (Matchless) with fastest time in the unlimited class, viz., 28s., was quite correct, Moorhouse making second fastest time of the day in this class, and winning the amateur event.

Open Reliability Trial.

The first of a series of four 100 miles open reliability and sporting trials, organised by the Herts County A.C., will be held on Saturday, January 20th, starting from the Chequers Hotel, Uxbridge, at 10 a.m. The route is: Uxbridge, Denham Avenue, Rickmansworth, Watford, St. Albans, Harpenden, Luton, Sharpenhoe, Dunstable, Ivinghoe, Tring, Aston Clinton, Wendover, Princes Risborough, Missenden, Amersham, Rickmansworth, and Uxbridge. Competitors failing to negotiate certain observed hills and corners *en route* will be penalised one mark per stop.

LONDON-EXETER-LONDON 24 HOURS' RUN.



Group of competitors at the Yeovil control.

The Season's Greetings.

We desire to return thanks to those readers who kindly sent Christmas and New Year cards to the editor and staff. Quite a large number reached us from appreciative readers.

English-Dutch Reliability Trial.

On going to press, the entry of W. F. Newsome (3½ h.p. Triumph) reaches us for the British trade team in the above contest. British entrants now total twenty. See page 4.

The New Brough Runabout.

The Brough runabout, described in our last issue, and which was entered for the London-Exeter run, was not completed until Christmas Day, so that it was deemed advisable not to start in the trial. In future all the sociable type vehicles will have a three-speed gear and silent chain drive.

A 6 h.p. Lady's Mount.

Miss Muriel Hind writes us to the effect that she has decided to order one of the new 6 h.p. Rex twins with side by side valves for 1912. It is to have a special frame built for her which will be very low. Miss Hind tells us that she will keep her old 5 h.p. (The Blue Devil) for ordinary use, the new mount being intended for hill-climbing competitions only.

M.C.C. Annual General Meeting.

The annual general meeting of the Motor Cycling Club will be held at the Inns of Court Hotel, Lincoln's Inn Fields, W.C., on Wednesday, the 10th inst., at 6.30 p.m. The receipts and payments account for the year ended November 30th, 1911, shows the following items: Receipts, competition fees, £389 4s.; receipts, current subscriptions, £328 14s. The chief payments are for medals and prizes, £310 2s. 3d.; competition expenses, £212 4s. 2d. The cash at bank amounts to £232 17s. 11d.



F. A. McNab (3½ h.p. Trump-Jap), winner of the Birmingham Club's Open Twelve Hours' Trial, which proved a most severe test owing to bad roads and fog. Snapped at York. (See page 11.)

FUTURE EVENTS

Jan. 20.—Herts. County M.C.C Open Trial.
" 20.—A.C.U. Annual Dinner.
Mar. 2.—Auto Cycle Union Open One Day Trial.
" 23.—B.M.C.R.C. Race Meeting.
" 30.—Derby and District M.C.C. Open Hill-climb.
Apl. 5-8.—N.W. London and Herts. County M.C.C. Joint Trial and Open Hill-climb (Yorks.) and Ladies' Competition.
" 8.—Westmorland M.C.C. Open Hill-climb at Shap Fell.
" 13.—Oxford M.C.C. Open Hill-climb

Another Passenger Trial.

Mr. C. C. Cooke tells us that the Herts County A.C. motor cycle and car sections are combining forces to hold a big open event for all types of passenger machines this year.

A Comprehensive Issue.

This issue contains exclusive descriptions, with illustrations, of all the winter reliability trials, North, South, East, and West, including several important trials not dealt with in any other journal.

Stealing.

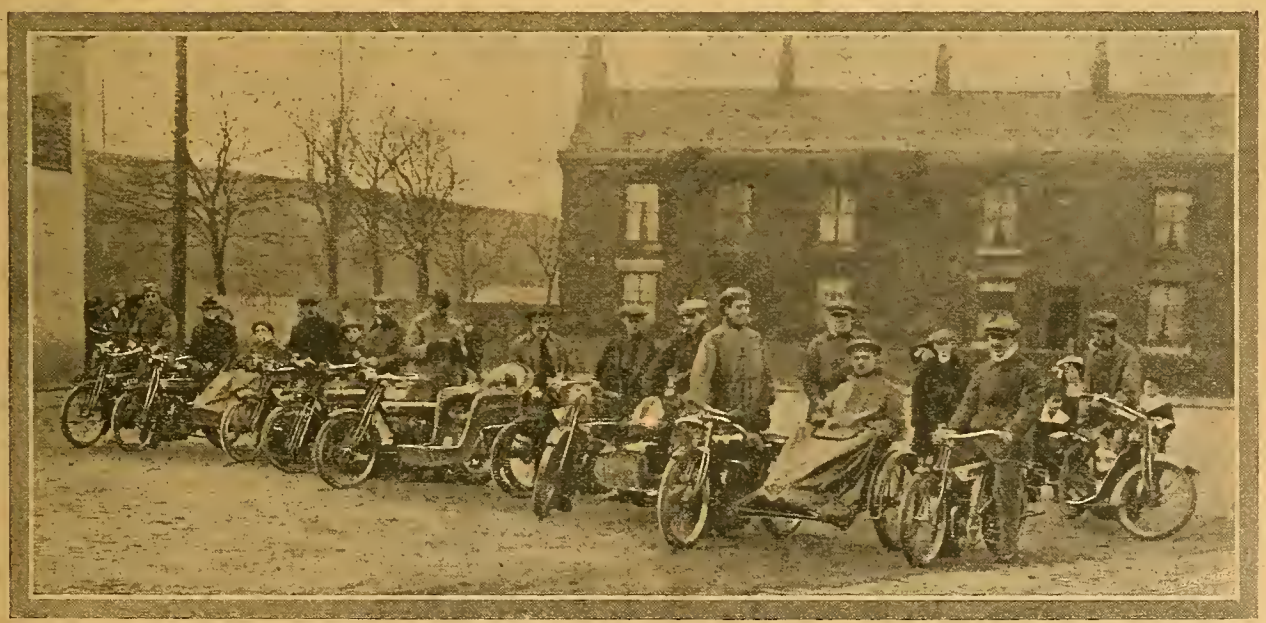
The Bicycling World and Motor Cycle Review (America) published on the 9th and 16th ults. four whole pages of sketches lifted bodily from this journal. In some instances the illustrations bear our artist's initials, but not the slightest acknowledgment is made. We can only say that it must be a welcome change for the readers of the American paper referred to, to see a selection of really first-class practical sketches in a native journal, and doubtless the Yankee editor recognises this fact.

C. R. Collier may go to America.

We understand that C. R. Collier is very likely going to Los Angeles, California, to race against Jake de Rosier in a series of matches. We questioned Mr. Collier, sen., about this report on Monday last, but he was unable to state definitely that his son would go. Probably the truth of the matter is that Collier is anxious enough to go, but before starting he is desirous of making sure that the financial arrangements on the side of the challengers are satisfactory.

The Number of Motor Cycles in France.

From recent returns, the number of motor cycles in use in France is 27,057 (twenty-seven thousand and fifty-seven). These figures, in addition to being small in comparison with our own, are meagre for a country the size of France. If the pastime were anything like as popular as it is in Great Britain the number should be at least six times twenty-seven thousand. There is, however, every probability of this number being largely increased in the near future.



STOCKPORT M.C.C. NON-STOP RELIABILITY TRIAL.
Scene at the start—Hazel Grove—of the fifty miles non-stop run held recently over a hilly course in Derbyshire by the Stockport M.C.C. F. Sixsmith (Scott) won the prize for solo machines, while the sidecar prize was tied for by D. Thomas (7 h.p. twin J.A.P.) and J. Norman (5 h.p. twin Rex).



Carlyle (Chelsea) C.C. (Motor Cycle Section).

The annual fancy dress ball will be held at Fulham Town Hall on the 18th inst.

Finsbury Park C.C.

The annual general meeting will take place at headquarters on the 10th inst. at 7.30 p.m. Suggestions for the 1912 season will be welcomed.

Wath and District M.C.C.

A meeting inaugurating this club was held at the Red Lion Hotel, Wath, on the 28th ult. Mr. W. W. Evers was elected secretary. The next meeting will take place on Thursday, the 11th inst.

Newcastle and District M.C.

The members held a supper at the clubhouse, 3, Saville Place, Newcastle-on-Tyne, on Thursday evening, and advantage was taken of the occasion to make a presentation to Mr. Ernest Hawkins, who is retiring from the position of hon. sec. Mr. Crosier afterwards read an interesting paper upon the recent Olympia Show. Dealing with the advances made in the construction of motor cycles during the past year, he referred particularly to the improvement made in change-speed gears.

Preston and District M.C.C.

The annual meeting of the Lancashire Motor Cycle Club was held at the Bull and Royal Hotel on Thursday, December 21st. There was a good attendance. After some discussion it was resolved to alter the name of the club to the Preston and District Motor Cycle Club, and to restrict the membership to persons residing within a twelve-mile radius. The subscription was reduced to 5s. by way of experiment and with a view to increasing the membership. The annual dinner will be held at the headquarters on Thursday, January 25th, and will be followed by a cinematograph exhibition and smoking concert.

Dublin and District M.C.C.

The winter trial, which it had been intended to run to Waterford and back, was altered to a century run in Co. Wicklow. The weather was bad and the roads truly awful; six only of the fourteen entrants started, viz., W. P. Kennedy (5-6 F.N.), C. B. Franklin (7 Indian), P. Dunkley (3½ Triumph), J. Healy (3½ Rudge), P. J. Brady (3½ Rudge), and R. Walshe (3½ Rudge). The course was *via* Wicklow, Ashford, Ballymacrae Hill, Glendalough, Aughrim, Rathdrum, and back to Dublin. Franklin and Dunkley were the only men to make clean ascents of Ballymacrae Hill, and the first-named and Healy were the only ones to complete the 100 miles without loss of marks. The first award, a gold medal, goes to Franklin. To-night the members will meet at the Dolphin Hotel for an informal dinner at which a presentation will be made to the hon. sec., Mr. F. J. Walker.

Blackpool and Fylde M.C.C.

The double non-stop run to Kendal was a great success in spite of bad weather and roads. Result: 1. R. G. Parker (2¾ Douglas); 2, T. M. Jones (5 Indian); 3, J. Howarth (6 Chater Lea and sidecar); 4, T. Bale (8 Matchless and sidecar); 5, S. O. Taylor (3½ Bradbury); 6, G. F. White (3½ Bradbury); 7, T Wildman (2¾ Enfield). All these made non-stop runs both ways. The following stopped one way only: F. Naylor (5 Indian), J. R. Crossley (6 Rex Jap), A. V. Catterall (3½ Triumph), R. W. Robinson (3½ Bradbury and sidecar), C. C. Humber (2¾ Douglas), W. J. Hazleton (3½ Bradbury and sidecar), and A. Bond (3½ G.B.). Also ran: T. B. Sharples (7 Jap and sidecar), H. Bailey (3½ Triumph), C. Careless (7 Indian and sidecar), and W. T. Chadwick (8 Matchless and sidecar). The route was *vid* Poulton, Garstang, Lancaster, and Milnthorpe. Mr. Bennet, of the Bosch Magneto Co., will lecture at the Victoria Café on the 8th inst., at 8 o'clock. All motor cyclists are invited. A reliability trial will take place on the 27th inst. *vid* Caton, Settle, Clitheroe, and Preston, distance 120 miles.

B14

Bristol M.C.C.

Mr. Henri Meyer will give a lantern lecture on Tuesday next entitled, "Motor Cycling in Alpine Regions from the Mechanical and Tourist Point of View."

Birmingham M.C.C.

At last the long drawn out autumn reliability trials have been brought to a conclusion. R. W. Duke (3½ h.p. Zenith) is the ultimate winner, R. H. Edwards (3½ h.p. Triumph) retiring.

Sutton Coldfield A.C.

The club has made application to the A.C.U. for a permit to hold an open reliability trial on the third Saturday in February. The trial is for the Colmore cup and gold medal, and will be under rules similar to last year's event.

Coventry and Warwickshire M.C.

The Yuletide run last Saturday proved a big success, nearly sixty members and friends on motor cycles and cars taking part. Forty-five sat down to dinner at the Dun Cow Hotel, Dunchurch, after which an excellent musical programme was gone through, the members arriving home about 9 p.m. after a memorable run through the foggy night.

The eighth annual dinner and prize distribution is to take place on Friday, February 2nd, at the Masonic Hall, Coventry. Tickets, 5s. each, may be obtained of the hon. secretary, Mr. G. Smith, 19, Hertford Street, Coventry.

Sheffield and Hallamshire M.C.C.

The above club held its second annual winter run on Boxing Day, Tuesday, December 26th. On the outward journey Stacey (Quadrant) was soon in trouble with a broken belt, as was also Raynes (A.J.S.) with a broken chain. Through Askern, Bellamy (Zenith) and Flint (Norton) got off the route, and were, consequently, late at the next control.

On the homeward journey Raynes (A.J.S.) was held up for an hour on the Wolds with a badly cut tyre. As the leaders neared home, however, the rain commenced, and then the weak points of machines became apparent. There was general complaint of magneto troubles, owing to insufficient protection from the mud. Apparently, those using leather belts were free from belt slip in the rain. Bradbury (Norton and sidecar) broke his leather belt twenty miles from home, the delay causing his only loss of marks.

However, all the competitors arrived home approximately to time except Vale (Griffon), who suffered a multitude of troubles, and Raynes (A.J.S.), who stayed behind to help him.

Stacey (Quadrant) was an hour late, and reported continuous belt trouble. The results, subject to confirmation, are:

SIDECAR CLASS.

	Rider and machine.	Marks lost.
1.	A. T. Smith (6 h.p. Zenith)	1
2.	F Roper (5 h.p. Indian)	6
3.	D. Bradbury (3½ h.p. Norton)	9

Silver medals for finishing within thirty minutes of schedule time: R. Blackbourne (6 h.p. Zenith and sidecar) and H. Short (8 Chater-Lea and sidecar).

SOLO CLASS.

In this class two riders lost no marks. With this contingency in view a secret check had been taken. Results:

	Rider and machine.	Marks lost.
1.	E. Cross (3½ h.p. Triumph)	0
2.	H. V. Swift (2¾ h.p. Douglas)	0
	(but had greater error at secret check)	
3.	C. Bellamy (3½ h.p. Zenith)	11½

Qualified for silver medals: N. Newton and T. Durant.

The following also competed:

J. Haslam (2¾ Douglas)
F. Fulford (2½ Levis)
R. Flint (3½ Norton)
S. Raynes (2½ A.J.S.)
J. Vale (2¾ Griffon)
J. A. Stacey (4½ Quadrant sc.)
H. Lambert (6 Zenith sc.)

Note to Club Secretaries.

We are asked to state that Mr. A. E. Bennett, of the Bosch Magneto Co., has one or two vacant dates for lectures during the next month.



By W. Jawcett

TO THE TYROL AND BACK ON MOTOR CYCLES

THE perusal of "The High Roads of the Alps," by C. L. Freeston, F.R.G.S., and also my keenness to go to Austria and see the Stelvio Pass, gave me the idea that my next holiday must be on my motor bicycle. Something over two thousand miles must be covered, and the vexed question of whether I should buy a two-speeder troubled me for some time, but in the end I bought a 3½ h.p. touring model Matchless, single speed.

My next worry was, could I get someone to join me? and after two disappointments, I was successful in inducing W. E. Grange, who had ridden through the 1911 Junior T.T., to go, and with his 3½ h.p. Bradbury cut down to 499 c.c. he decided practically to alter nothing but go with it as it was, with long exhaust pipe and all.

Our Machines Described.

Perhaps I had better give here some particulars of the machines. Grange kept his capacity at 499 c.c., retained his studded Dunlops, carried a spare outer cover and sundry tubes, a Lyso 1in. belt and spares, and had semi-T.T. handle-bars, two sets of footrests, B. and B. carburetter. His method of carrying luggage was as novel as it was satisfactory, consisting of a wicker pillion passenger seat on the carrier, with three leather and canvas bags with plenty of spares and clothing, and a tremendous strap to keep them in position. My machine was the ordinary standard 3½ h.p. 1911 Matchless with pedalling gear, B and B. carburetter, ⅞in. Lyso belt and two spares, 2¼in. Palmer cord studded tyres and no spares, and one extra inner tube; whilst I had a box made for the carrier to hold the belts, tube, spares, a quart of Price's "A," camera, and odds and ends. At the side I had strapped a small suit case, resting on a small platform and covered with waterproof cloth, holding a spare pair of trousers, socks, shaving tackle, brushes, and underclothing, etc. Neither of us carried lamps, as we did not think it necessary.

We were already members of the C.T.C., and obtained customs permits for France, Italy, and Switzerland free, but for Austria there were special tickets, for which duty amounting to £3 10s. each had to be paid, to be returned on producing our papers duly cancelled. The C.T.C. Continental Handbook, from which could be ascertained the size of any town, also the hotels, charges, etc., was also taken, together with a map of France and part of the adjoining countries, the scale being sixteen miles to the inch, also Brunn's map of the Tyrol.

Monday, July 10th, about seven o'clock, Grange called and told me he had packed everything whilst the machine was on the stand, and on pushing it off preparatory to starting he had such a weight on that the whole affair pulled him over and fell with a crash on the ground, breaking his stand. This was quite a warning to him, and the question was, how were we to start? I live in the middle of a long hill, and we thought it too much to attempt to start in the middle, so we went to the bottom. The weather was warm and fine, and we made straight for Wetherby, about nine miles distant. The weight on the Bradbury was awful, and Grange said the steering was queer, especially at corners, whilst I could hardly say I was at home. Every pot hole seemed as if it would smash the carrier to bits.

Easy Journey to the South Coast.

The Great North Road possessed but little interest to us, Newark being our stopping-place for food. Grange also took the opportunity here to send a telegram to Messrs. Bradbury for a new stand, and also a new cam wheel. It seems that the day before he had been screwing the nut on the spindle, and he had



The C.T.C. customs ticket, which successfully passed the tourists through France, Italy, and Switzerland.

given it such a wrench that he had pulled the nut end off, and had only just hammered the end over. The wonder is that the wheel, which, by the by, drives the magneto, had stuck on at all. This done, we set off, and arrived without incident at Edmonton, just on the outskirts of London, having covered what was eventually to prove our biggest day's distance, viz., 212 miles.

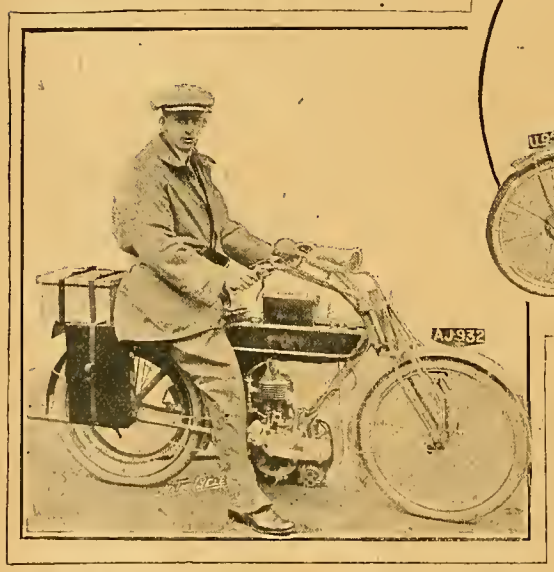
Next morning, Tuesday, I visited the works of Messrs. Prestwich, and they very kindly ground in my valves and cleaned the cylinder and piston. I may say that I had done nothing in the way of preparing my engine, as we went off almost immediately after our return home from seeing the T.T. races.

To the Tyrol and Back on Motor Cycles.—

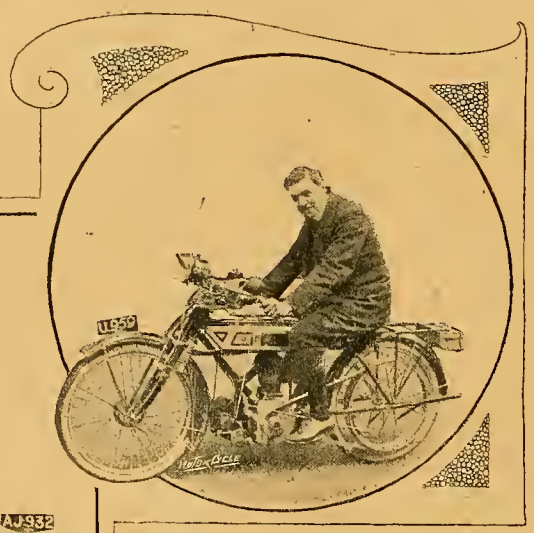
In the afternoon we crossed the Thames by ferry, and had a good run *viâ* Maidstone, over tarred roads nearly the whole of the way to Folkestone, the day's distance being eighty-one miles.

Wednesday was another sunny day, and after wheeling our bicycles to the landing stage we went to book our passage to Boulogne, the fare being 7s. 5d. each and 10s. each machine, single journey. This I consider out of all reason for such a short journey, about 1¾ hours, and it is no wonder that so many people try to swim the Channel! However, I decided not to come back the same way, even if I had to return *viâ* Russia.

Boulogne was reached about 2.45, and we went straight to the Customs House to present our C.T.C. tickets, here the officer made out a permit for 6d. each, the whole proceeding only occupying a few minutes, and we were then free to roam wherever we wished. Getting petrol was our next difficulty. There were some cases of it on the dock side, but the owner could not be found, so, enlisting the services of one of the usual crowd, we sent him to the town for two cans. Whilst waiting, we made enquiries at the offices of the Bennett Line, and got particulars of sailings from Boulogne to Hull and Goole. Eventually the petrol turned up, with the usual tale of how hard it had been to procure, and, our tanks being empty, we were able to take a tin each. Perhaps I had better mention that, as a rule, petrol is sold abroad in 5 litre tins. This cost five francs for the two, and works out at about 2s. a gallon.



W. N. Fawcett, the writer of the accompanying article, astride his 3½ h.p. Matchless-Jap.



W. E. Grange (3½ h.p. Bradbury), who accompanied Mr. Fawcett on the tour.

Off from Boulogne.

At last we set off, and in Boulogne itself turned to the right and struck an atrocious road, a bad example of bumpy sets or *pavé*, which unpleasantly reminded us again of our weight behind. At last we struck a better road, and as we had received a good shaking up, called a halt. Knowing that petrol was going to be rather an expensive item, we brought out our cases of spare B. and B. jets, but I found that I had my smallest jet already in, so I hammered it still smaller. Continuing, we passed through Samer and reached Montreuil, where we turned to the left and again struck an awful road—it was more of a nightmare; we could see for miles straight ahead, no hedges, no corners, but tall trees, similar to poplars, bordered each side of the road, which was itself composed of large rounded sets with several missing; sometimes there was a track on the side about a foot wide, but it was unpleasantly near the trees and often intersected by a deep gulley. We scarcely ever did more than twelve miles an hour, and eventually arrived, after passing Hesdin and St. Pol, at Arras, where we decided to spend the night at the Hotel de l'Univers, which we found excellent. During the day Grange had broken part of the spring on his front forks, but by tightening the screws up he had made them semi-rigid. I thought something must happen, as he was careering through some villages at fifteen miles an hour, when I was nearly shaken to bits at about half the speed. The afternoon's distance was seventy-one miles.

Next morning we had the customary rolls and coffee, and after receiving the bill I produced my C.T.C. badge and asked, much to our host's surprise, for the ten per cent. discount to which the handbook showed us we were entitled at this hotel. It was knocked off without demur.

Great Heat and Slow Going.

Another glorious day, and we set off in high spirits after we had filled up with petrol, and Grange had bought a glass to replace one he had broken in his goggles. Whilst we were waiting a funeral passed. First came several choir boys with a cross and chanting a psalm, and then some little boys and girls with bouquets, after which came the coffin and the elder relations and friends. We turned into a side street and tried to get in front of the procession, when Grange came a cropper in trying to avoid a cart coming out of a narrow side street. After a few words on both sides we eventually got into the main street again and reached the country. A perfectly straight road was next followed through Cambrai, where, by the by, our luggage was examined for dutiable articles just as we entered the town. Here we turned to the right, and later on to the left, and reached St. Quintin. The villages we had been passing through were far from beautiful to look upon, most of the cottages being dirty and colour washed, whilst the farm yards

To the Tyrol and Back on Motor Cycles.—

opened straight on to the vile cobble street. The weather was awfully hot, and what made it more exasperating was the fact that the roads were so bad that a speed of twenty miles an hour could not be maintained to give us a chance to keep cool. I had not gone far when I found the top of my oil pump had screwed out, which necessitated a stop. The least exertion caused me to perspire, so hot was it—in fact, how the engines stood it I don't know.

On we went. As a rule, the road was perfectly straight, but more than thirty miles of it per cyclometer was wretched *pavé*. Oh, how we hated the sight of it! Laon was eventually reached, then, thirty miles further on, Rheims, and as we had now done 110 miles in sweltering heat over atrocious roads, we decided to stay the night here at the Hotel du Commerce et Metropole, and found it good. Our usual method in regard to hotels was to have breakfast about eight o'clock, and then ride slowly all day, with sundry stops for a smoke or to eat fruit, never deciding till late in the afternoon where to stay the night. This we found best, as we never knew what the roads had in store for us. We usually arrived at the hotel in time for a good wash before sitting down to seven o'clock dinner, and we were always lucky in getting a good meal.

Rheims was partly explored in the evening, and seemed full of people; in fact, some of the streets were blocked, doubtless owing to some kind of celebrations that were being held.

Our machines were greased on the plated parts, and the dust was thick all over, but no matter how dirty or dusty we appeared, the hotel proprietors were always pleased to see us—a pleasing contrast to the treatment sometimes experienced when entering a decent hotel at home.

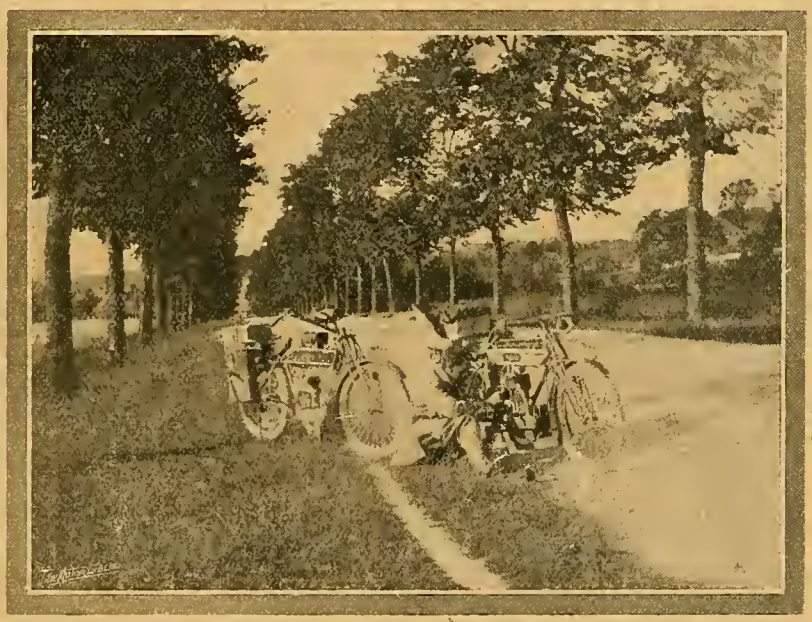
Next morning, Friday, July 14th, we donned our overalls again, and, leaving Rheims, made for Châlons-sur-Marne, luckily over better roads, although somewhat loose, owing to the hot weather.

Tyre and Carrier Troubles.

At Châlons we stopped and bought a pound and a half of peaches for 9d., which we ate in a shady spot and finished up with a cool smoke. Soon after this I pulled two nails out of my back cover, but a careful search failed to reveal any puncture in the tube, so it was replaced. We were now approaching Troyes, and decided to put up there, but I was destined to have one or two stoppages first, for three times I blew up the rear tyre, and once, when going through a village, I heard such an awful grating sound from behind that I had to pull up in very quick time, to discover that my carrier and luggage had slid back and were trailing on the road. The carrier had slotted fastenings, so that the whole lot could be swung backwards to facilitate tyre repairs; these ends were temporarily hammered up, and we reached the Hotel St. Laurent in good time. Here I took out the back tube, and found a small puncture on the rim side of the tube: at the same time Grange produced a hefty hammer from his kit, and we hammered up the slotted ends on my carrier, and they never gave any further trouble. Although we only covered eighty miles that day it had taken us about six hours owing to frequent halts.

Again the weather was glorious as we set off for Bar (not the mahogany variety!), and the country now appeared to be improving from a scenic standpoint, but it still left something to be desired. As we were leaving Troyes, we were pleased to see a Bedelia.

The day was not quite so hot, but the dust was much more troublesome. Through Chatillon we followed a stream for a long way, and on looking at the map I was surprised to see we were on the banks of the Seine, and only a very short distance from its source; in fact, so narrow was it here, we could almost jump across. Dijon was our next stopping-place for the night. As we approached it the scenery greatly improved, and when it appeared as if we were in for a nice stiff climb, we stopped on a long descent for Grange to put his gear ratio down and cut his belt; but I decided not to touch mine, as it was giving a gear of 4⅓ to 1. We had not gone far when I had to open my throttle a bit more, and then more, the road developing into a nice twisty and sporting hill, but careful "nursing" at corners enabled me to get up comfortably. Once at the top I waited for Grange, and as he did not appear, I returned and met him coming up; he told me later that lowering the gear and cutting the belt had proved his undoing, for he broke a fastener.



Fitting smaller jets just outside Boulogne, in order to cut down the expense of petrol.

We had now done ninety-seven miles to Dijon, and put up at the C.T.C. Hotel Moderne et du Jura; and it was modern, for there, actually on the mat, was the word "Welcome." It proved the best hotel we had found so far, and the bedroom was a marvel, with its hot and cold water and shaving mirror, also, amongst other things, a dummy clock worked by electricity from the hall.

(To be continued.)



Brooklands and the Six Days' Trial.

So simple! And we never thought of it before! For years past we have been racking our wits for some simple precaution which should avoid the annual rumours whispered in select circles at the termination of every 1,000 miles trial.

It is common knowledge that two or three machines at least scrape through every event of the kind by the skin of their teeth. I remember a certain machine falling in half only five miles after finishing an important trial, though its success was advertised with sickening regularity for years afterwards, and for aught I know adorns the pages of a lavish catalogue to-day.

Only last summer I heard of a gold-medalled engine dismantled at the factory three days after the Harrogate trials; its bearings were oval, even to the naked eye, and the knock when it was run slowly reminded one of the village blacksmith's heaviest sledge landing on the anvil. The teeth of its timing gears were half stripped, and the fragments had leaked through into the crank case; the two-speed gear was a mass of rectangular "balls" and ground ball races; in fact, the machine must have collapsed within another 100 miles.

Some of the facts come to the knowledge of competitors and spectators, partly owing to the frank conversation or gingerly driving of the irate owner; others are astutely concealed by crafty riders; but few of them ever become public property.

I must admit that a concluding high speed test on Brooklands, succeeded by a searching scrutiny of the machine hot from the track, will not eliminate every possibility. The machine that could not cover another ten miles may still occasionally carry off a high award. But it must be granted that a prolonged high speed reliability run on Brooklands is the test *par excellence* best calculated to bring incipient or latent troubles to a head. It will resemble giving a fever patient an ice bath, for only the very hardiest will survive it, and the A.C.U. should surely adopt the solution *nem. con.*

Spring Deliveries.

Thousands of motor cyclists are evidently somewhat helpless individuals, and my postbag shows that I must mention a matter which ought to be self explanatory. As most of us know, the really popular firms have already disposed of their entire output for months ahead, while two or three factories, it is said, can deliver no fresh orders until Easter, 1913, and one firm at least was reported to be booked up to Christmas, 1912, as early as the opening day of the Olympia Show. My correspondence shows that some innocent readers imagine that all these machines are separately and singly ordered by private individuals residing at the "Hollies" or the "Myrtles" or similar suburban addresses, and so I get letters like the following: "Dear Ixion,—I had set my heart on riding a 3½ h.p. two-speeder Geewhizz, but on writing the makers I find that they have disposed of their entire output up to December, 1912. My motor cycle friends inform me that Messieurs (here follows a list of the twenty leading firms in the industry) have also disposed of their output for six months ahead. In my sad trouble can you very kindly inform me which firms can supply machines in reasonable time? I want a machine for (here follow the weights of the writer's best girl, second best girl, rich aunt, etc., etc., with detailed descriptions of the terrible hills abounding in his suburb, the hairpin corner just outside his future father-in-law's villa, and many other details of too purely domestic an interest for quotation here)."

The most casual glance at *The Motor Cycle* advertisement columns should surely inform the most hidebound ignoramus that only a small percentage of these imposing order lists are filled with the names of potential *users*. The great majority of these machines are sold to distributing agencies, which take delivery of one, five, or twenty samples of the best known makes each week from January to December, and at nearly every period of the year except a short period around Easter, almost immmediate delivery of any well-known make is obtainable from one or other of these local agencies.

Therefore because the makers' order books are full there should be no difficulty in purchasing just what the reader wants by applying to the nearest agent, who can usually give reasonable delivery.



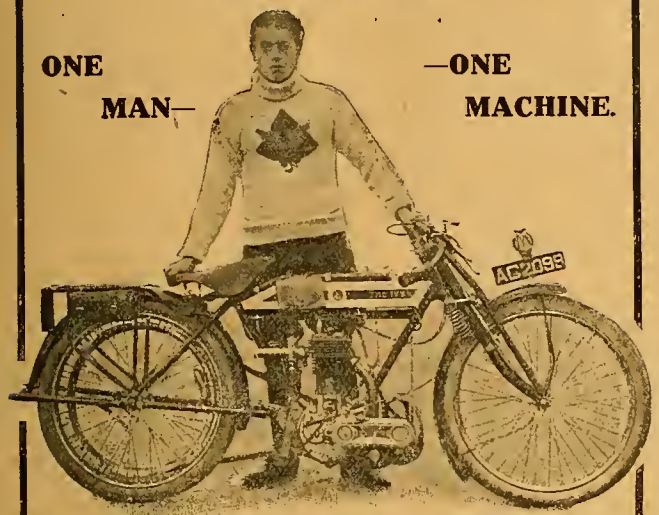
NOISY EXHAUSTS.—
GEORGE NEWBURN'S HIGHLY SUCCESSFUL SOLUTION.

The unanimous opinion of eye and ear witnesses is that the well-known comedian's suggestion has solved the difficulty. The engine explosions cannot be heard even when driving on full throttle and with the cut-out wide open. The apparatus in the sidecar used for the experiment is from the orchestra of the "Palace," Bath, where the driver of the machine, E. Longden, is the manager, and where George Newburn recently gave performances.

— THE — VICTORIOUS **IVY**

SCORES AGAIN.

ONE MAN— —ONE MACHINE.



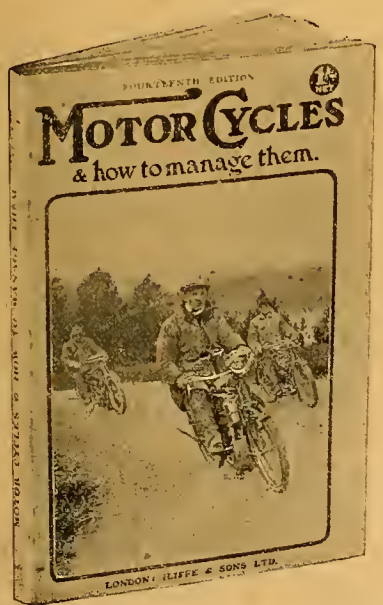
Sutton Coldfield A.C. Two Days' Trials, Dec. 16 & 17.

H. C. NEWMAN, on **3½ h.p. IVY, FIRST,** being winner of Sutton Challenge Cup and Gold Medal, also Murratti Ariston Trophy and Gold Medal for best performance in all the Club's Competitions during the year.

Newman's performance was exceedingly good.—*The Motor Cycle.*

S. A. NEWMAN, Lichfield Road, BIRMINGHAM.

Useful to all Motor Cyclists—especially beginners.



Price 1/- Net. By Post 1/2.

Of Newsagents and Bookstalls, or direct from

ILIFFE & SONS Ld., 20, Tudor St., London, E.C.

TYRE TALK

No 7

"QUALITY" first!

—Always, and at all times, have we placed QUALITY first—consequently we offer you in The PEDLEY Tire a production worthy of our name and the "HIGHEST" QUALITY" reputation associated with that name since the year 1840.

—QUALITY in a Tire spells EFFICIENCY and LONGEST WEAR, and the maximum of comfort with immunity from trouble.

—If you are out for a "QUALITY" Tire, you certainly want The

'PEDLEY' 3-rib non-skid

and should invest in one without delay. Let us send you a section—or a sample Cover—for your inspection—or ask your Agent to show you a PEDLEY Tire and when you have noted its marked merit you'll be sure to buy.

COVERS (26 × 2¼in.), Beaded Edge .... **48/- each.**

Inner Tubes, 10/3; or Extra Heavy ditto, 12/- each.

—Ask for our "PEDLEY TIRE" Folder—it gives particulars of this and a host of equally valuable rubber requisites.



The **PEDLEY**

J. PEDLEY & SON, LTD.

ESTABLISHED 1840 Great Charles Street

BIRMINGHAM

R.H.S.

In answering these advertisements it is desirable to mention "The Motor Cycle."



A TYRE BOOK
BRIM FULL OF INTEREST

If you have not yet received a copy of this handsome booklet, send a card for one TO-DAY.

There are many new features in the range of PALMER TYRES for 1912 which are well worth your investigation.

THE PALMER TYRE, Ltd.,

119, 121, 123, Shaftesbury Avenue, London, W.C.

Motor Cycle Tyre Depot: 103, St. John Street, Clerkenwell, E.C.

PALMER

A.J.S.

M.C.C. London-Exeter-London Winter Run.

A. J. Stevens, riding a 5 h.p. Two-Speed A.J.S. with Sidecar and Passenger, completed the journey in schedule time, winning

GOLD MEDAL

This was its FIRST OFFICIAL APPEARANCE.

The ride was made with no mechanical adjustment, with the exception of tightening the back chain on one occasion

PRICE - - 60 Guineas.

Write for List—

A. J. STEVENS & CO., LTD., Retreat Street, Wolverhampton.

London: H. Taylor & Co., Store Street, Tottenham Court Road

HOUNSLOW TO HOOK.

A DELIGHTFUL TWENTY-FOUR HOURS' RUN.

I put on several pairs of socks,
And clothed myself in wool,
Packed up the turkey-sandwiches,
And saw the flask was full.
I wrung my driver by the hand;
"Robertson Brown," said I,
"To-night away to Exeter
With you I'll do or die."

Our engine was an Ivy-P.,
Whose horse-power was not great:
Four and a quarter had to pull
The coachbuilt sidecar's weight;
How much it had to pull that night
Will later on appear,
When I describe in glowing terms
Our trouble with the gear.

The Turner sidecar was a treat—
All weather it defied;
Moreover, it had road-bump-proof
Upholstery inside.
Our lamp, a hefty F.R.S.,
Orion's belt outshone
(Orion might have wished that night
He'd got a chain drive on).

The poets, so I am informed,
Who lived in ancient days,
Chose attics underneath a roof
Wherein to write their lays.
But I'll write 'neath the open sky,
Said I, without regret;
Inspired by frost if it is fine,
If not, inspired by wet.

At Hounslow there were gathered all
Great Britain's choicest bloods;
Dame Fashion had provided joys
In overalls and duds.
Thank Goodness! there was rain enough,
For, had there been no squalls
And had the night been dry, think what
A waste of overalls.

I saw "I'm It" with twenty-two-
Inch wheels and strange air springs,
And Mundy lowering his gear,
And Vernon Taylor's wings,
And Thompson with his green stream-line
Which all design out-knocks,
And Thomas Frank and O. P. Hill
With crackers in a box

We started from Bulstrode Hotel
To ride the long night through;
Our hearts were stout, our clothes were thick,
Our sou'-westers were new.
But man proposes Exeter,
While Fate, who's always near,
Steps in and utterly upsets
The meshes of the gear.

It was on Egham's little hill,
And somewhere near the top,
Our engine seemed to grow quite tired,
Then faltered to a stop.
Examination in the dark
Evolved the simple fact
That both the gears were in at once,
And neither would retract.

Adjustments made, we journeyed on,
But up hill it was plain
The high gear, acting on its own,
Had sidled in again.
Ignoring the controlling rod,
That high gear would assert
Itself on awkward gradients;
The lower gear felt hurt.

Although as yet we'd hardly got
As far as Hartley Row,
It seemed as though we must have done
Two hundred miles or so.
A mile at moments such as these
Is made of every yard,
And every little eminence
Becomes as steep as Chard.

"The time has come," I said to Brown,
"To talk of many things,
Of ratios and formulas,
Of Karslakes and George Kings."
But Brown replied, "Would I were back—
We still are far from Devon—
At home in pleasant Portland Street,
Number one-fifty-seven!"

And still the engine pulled and pulled,
And didn't stop to bask;
The Ivy clung hour after hour
Right bravely to its task.
Vainly the gear put on the brake,
For still the engine turned;
The Watawata held, although
The gear-bearings were churned.

Which showed what pluck the engine had.
But, hang it all! ye gods!
When both the gears are in at once
Too fearful are the odds.
Some sage advice I gave to Brown
(It came too late, I fear),
"If I were you I wouldn't let
The hub control the gear!"

Upon a slightly sloped incline,
Where mud was thick and svelte,
The high gear hit the lower gear
Somewhere below the belt.
And then we stopped and tinkered things.
Hopeless was our outlook
Till someone told us we were but
A short half-mile from Hook.

A pleasant little spot is Hook,
Not far from London Town;
The villages of Devonshire
No doubt deserve renown,
But Hook in Hampshire's pleasant realm
Is quite as good a spot
As Exeter for writing odes
And mild poetic rot.

We might have gone to Exeter,
'Mid wind and sleet and showers,
Or wallowed in Wiltonian floods
For hours and hours and hours.
Instead of that old Destiny
Rough-hews us as it will,
And bids us stop the night at Hook,
Where we are stopping still.

O, Hook! Sweet Auburn never was
So sweet as thou to us!
Thy charms in poetry or prose
I could at length discuss.
Though Yeovil has its "Mermaid" fame,
And Exeter its "Bude,"
Hook with a temperance hotel.
"The Acorn," is endued.

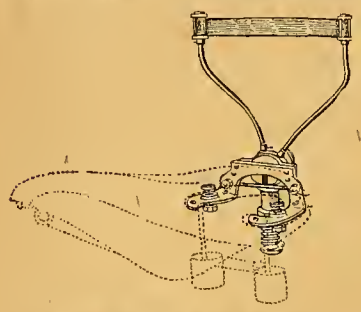
Some have to Middle Wallop gone,
To where Windwhistle blows,
To Crewkerne and to Honiton,
And places such as those.
Well, let them go, as to the Pole
Went Shackleton or Cook,
While we will pause upon our way—
We've got as far as Hook!

FRED GILLETT.

AMONG THE ACCESSORIES.

A Home-made Back-rest.

The backrest of which we append a sketch has been sent us by Mr. H. B. Jeffery, Carter's Corner Place, Aylesham. The device is intended to fit to the bolts which hold the upper ends of the saddle springs to the cantle. The plunger, working in a brass cylinder and controlled by a spring, is adjusted so as just to clear a metal plate passing across the luggage carrier, the adjustment being made when the rider's weight is not on the saddle. The chief advantage claimed for the rest is that the support falls to one side, thus leaving the carrier free for luggage. Back-

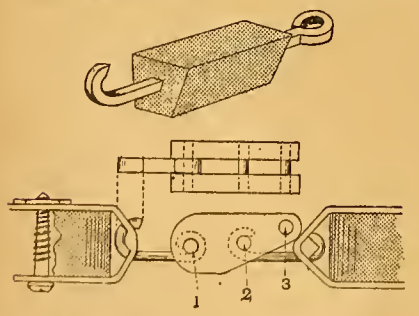


An automatic home-made back-rest.

rests which fall back and down when not in use necessitate the luggage being either placed very far back on the carrier, or left off altogether, because if the bag were in position the rest could not fall flat. Mr. Jeffery informs us that the sample he has made works very well on his own machine, although being only a rough home-made model and unnecessarily heavy.

Adjustable Belt Fasteners.

Adjustable belt fasteners are very handy when raising or lowering the gear and obviate the necessity for carrying another belt of smaller section. They have, however, the following disadvantage. When the long links are in use there is a rather large gap between the ends of the belt which must cause a certain amount of slip. To overcome



this trouble Mr. Stanley T. Robson, 59, Holmoor Road, Birmingham, has brought out some links fitted with small sections of belting which enable the drive to be taken up on the link as well as the belt. We illustrate two types—one made for the ordinary Simplex fastener the other for Mr. Robson's special fasteners. The links, which give various lengths, can be made to suit any type or make of belt.

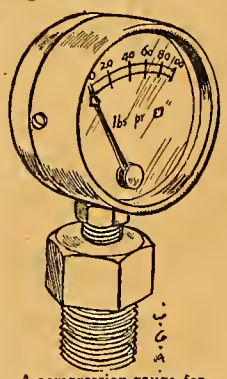
Sleeve Protectors—Compression Gauges.

On the occasion of a recent visit to the depot of Hunt's Stores, 117, Long Acre, W.C. a handsome and moderately-priced lamp and generator were shown to us. The lamp is well designed, and is fitted with a Bausch and Lomb lens mirror, which is held in position by screws, so that it can be easily detached for cleaning purposes. The whole of the lamp is made up with either rivets or screws; there is no soldering. The hinge of the front door is very strongly made, and the burner is adjustable. The generator has a smooth exterior, so that it can be easily cleaned, and it is inter-



Protectors which keep the sleeves clean when undertaking small repairs.

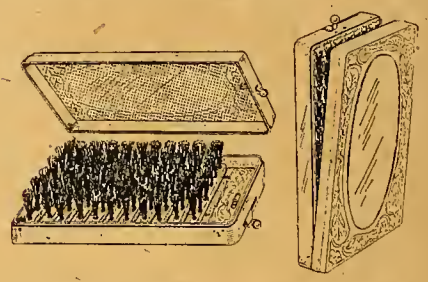
esting to note that with the complete outfit an armoured connection is supplied. It is always nice to know the exact compression of one's engine, and, to enable motor cyclists to be in possession of this useful knowledge, this firm have placed on the market a compression gauge, which indicates to 100 lbs. to the square inch. The gauge, which is not intended to be in position while the engine is running, is made to suit the thread of the sparking plug hole. Other useful articles which are of special interest to our readers, now that the cold weather is with us, are a woollen throat protector, which is slipped over the head and forms protection for both throat and chest, and sleeve protectors, to prevent the coat sleeves from becoming soiled; these protect the sleeve about six inches up from the wrist, and are exceedingly useful.



A compression gauge for motor cycle engines.

A Collapsable Clothes Brush.

One of the neatest little accessories which has ever been brought to our notice is a small collapsable clothes brush which we illustrate. The case containing the brush is only about the size of a small cigarette case, measuring 4in. × 2⅛in. × ½in. thick. When the buttons, shown at



one end are twisted the cover comes off, and by pulling the button on the bristle portion towards one, it moves a small lever which causes the rows of bristles, which have previously laid flat in the case, to rise ready for use The case is of such handy proportions that it can easily be carried in the toolbag or the rider's pocket. This novelty can be obtained from the Rudge-Whitworth Depot, Hertford Street, Coventry.

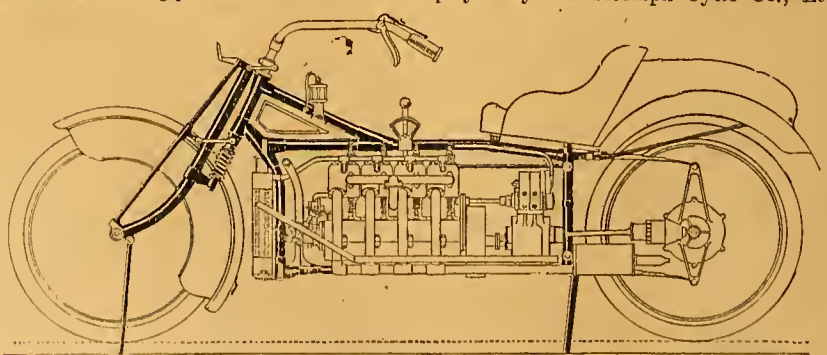
New West End Saleroom.

West End readers will welcome the information that John Barker and Co., Ltd., High Street, Kensington, W., have opened a special department to deal with motor cycles. This firm is catering for motor cyclists in the same manner that it has already dealt with autocarists, and is prepared to supply the best known makes of machines for cash or easy payments. John Barker and Co., Ltd., have such machines as Humbers, Premiers, Singers, and Triumphs, in stock and ready for instant delivery.

New Appointments.

R. H. Bell, who for some years past has been the Midland representative of Palmer Tyre, Ltd., severed his connection with that company at the end of the Old Year to take up the position of sales manager to the Clyno Engineering Co., of Wolverhampton.

A. L. Ommanney, until lately with Rudge-Whitworth, Ltd., is now employed by the Triumph Cycle Co., Ltd.



Latest design of the four-cylinder three-speed T.M.C., which, as will be observed, has a water-cooled engine and bevel drive. The new model is more than ever "a car on two wheels."

N.W. London M.C.C. Open Trial to Gloucester.

UNDER fine weather conditions, on Saturday morning last, sixty-two competitors were despatched from Jack Straw's Castle *en route* for Gloucester. Each man had to make a non-stop run from Hampstead to the top of Dashwood Hill. Over this section, H. F. S. Morgan (Morgan) was early in trouble and later in High Wycombe we passed F. W. Applebee (2 h.p. Centaur) by the roadside with a plug blown out. He eventually climbed Dashwood Hill with a 7½ to 1 gear and l.p.a. Griffiths (2 h.p. Alcyon) was another competitor to make a stop before reaching Dashwood, owing to a broken belt, but surmounted Dashwood with a 6½ to 1 gear and l.p.a. Jack Woodhouse (3½ h.p. O.K.-Precision) lost his oil pump plunger, and was obliged to ride some considerable distance without lubricating his engine. From the top of Dashwood Vernon Taylor (Rudge) and Jack Woodhouse took a couple of young ladies on their carriers into Oxford. Here the first check was held, at Morris's Garage, where hot Bovril and sandwiches could be obtained. Thence the route lay through Farringdon, Cirencester, down Birdlip Hill, to Gloucester. Just after passing through Farringdon, Vernon Taylor, when overtaking a horse and trap on the inside, hit the bank, and consequently had a nasty fall. Luckily, he was unhurt, and did not seriously damage his machine, only slightly bending the footrest. For some distance we kept company with R. Holloway (3¾ h.p. twin Premier), whose machine appeared to be running very sweetly.

Greasy Tramlines and the Result.

The tramlines entering Gloucester were in a terrible condition. Here we found F. E. Pither (Rudge), who had broken his throttle wire and had tried to get going with full throttle. In the grease the result was that directly his engine fired the back wheel slipped under him. After reversing his air and throttle barrels, with the aid of a push he managed to start. Vernon Taylor appeared to be very unlucky, as he was again brought to the ground. Pither skidded just in front of him, both falling in a heap.

Lunch was served at the Spread Eagle Hotel, Gloucester, where competitors were checked both in and out. The route home was the same.

Climbing Birdlip.

At the bottom of Birdlip many of the competitors stopped to cool their engines and lower their gears. Cut-outs were not allowed to be used, and this undoubtedly accounted for a lot of the failures on this hill. Griffiths, unfortunately, broke his belt halfway up, but after repairing same and starting up on the stand, using back tyre and road as a clutch, he successfully reached the top in the saddle with the help of l.p.a. H. Foote made an excellent ascent on his 8 h.p. overhead-valved Bat, geared 3½ to 1. C. Roberts came round the corner on his 3½ h.p. Arno "foot slogging." R. G. Mundy (3½ h.p. clutch Singer) came up well, being somewhat baulked by a horse and cart on the corner.

Competitors were again checked at Morris's Garage, Oxford, where tea and sandwiches were supplied. Lamps appeared to be somewhat troublesome, several competitors being hung up on the road attending to same. Aston Rowant Hill was in a shocking condition at the top, being more like a ploughed field. On the whole, the roads were in a very fair condition considering the amount of rain that has fallen lately. At the bottom of Dashwood Hill we passed G. N. Higgs on his Briton car, he having been at Hampstead in the morning to see the competitors start. On the fairly stiff, though short, hill out of High Wycombe, on the road to Rickmansworth, several of the competitors failed. We passed J. Oliphant (3½ h.p. Premier and sc.), who had failed near the top.

Unpleasant Conditions.

From here the ride was anything but pleasant, being over greasy and very twisty roads, with occasionally some fog. Several of the competitors, being late at High Wycombe, only had one hour to cover the last thirty-two and a half miles; two or three, however, managed to do it in the time. On arrival back at Jack Straw's Castle, we found a very large crowd being kept under control by several policemen.

The route was very clearly marked by means of arrows, and the N.W.L.M.C.C. must be congratulated on the way this competition was held, considering this is its first open run. Hugh Gibson (3½ h.p. chain-driven Bradbury and sc.) reported a nasty spill. Near Wheatley the front lug of his sidecar broke, so he induced another competitor to carry his passenger on the carrier.

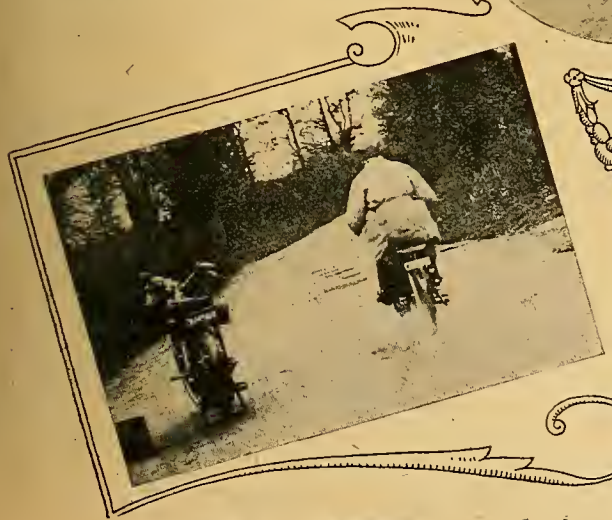
Mishap to a Sidecar.

After strapping it up, he proceeded, but at the top of Aston Rowant the strap slipped, letting the sidecar down and throwing Gibson. He left the sidecar in the ditch and finished solo. Jack Woodhouse was very late in reaching Hampstead, and reported having carried a lady some twenty miles on his carrier. A non-competitor, who had followed the trial on a S.I.A.M.T., having apparently fallen asleep while riding, had

N.W. LONDON TWELVE HOURS' TRIAL TO GLOUCESTER AND BACK.

A competitor at Northwood.





On the way to Gloucester.



Humber and Enfield riders at Oxford on the return journey.

N.W. London M.C.C. Run to Gloucester.—

been brought in on a Zenith sidecar, the lady passenger riding on Woodhouse's carrier. H. G. Dickens (Clyno and sc.) smashed up his timing gear the other side of Oxford on the outward journey. Hal Hill, who had entered his ancient 3 h.p. Centaur, was unable to ride it, as the exhaust valve lifter broke just before starting; he therefore fetched his T.T. Bat, and successfully completed the run.

The awards were made as follows:

Silver cups to those who did not lose more than fifteen marks on each journey.

Silver medals for a loss of twenty marks.

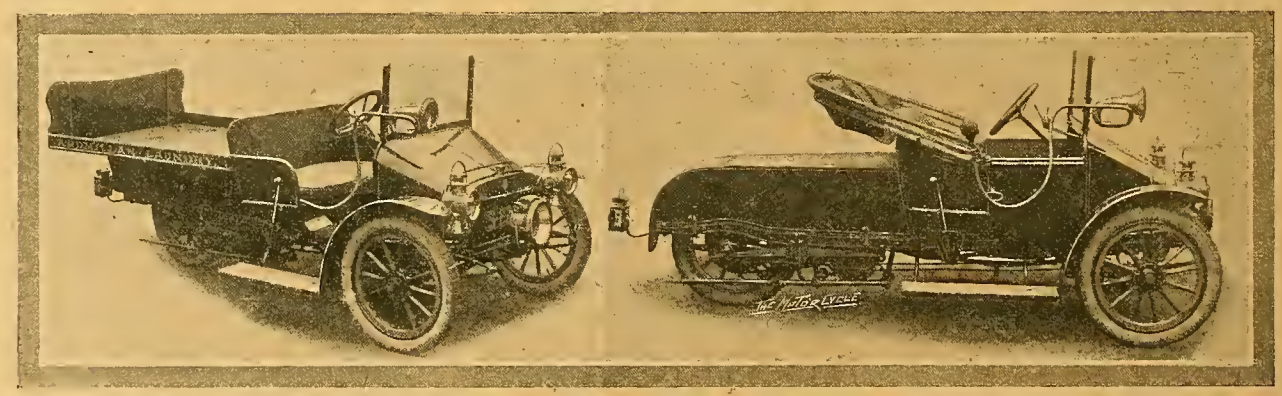
Bronze medals for a loss of thirty marks.

The Survivors.

Glynn Rowden (3½ Triumph)
A. E. Woodman (2¾ Humber)
E. Gwynne (3½ Triumph)
E. Pond (3½ Singer)
W. Cooper (3½ Bradbury)
W. Oldman (5-6 Bat and sc.)
H. C. Mills (3½ Premier)
Hal Hill (5 Bat-Jap)
N. Scott (3½ Triumph)
C. Simpson (7 Indian)
G. G. Burton (10 Mors)
Frank Smith (5-6 Clyno and sc.)
J. Kirner (5-6 F.N.)
A. O. Riner (12 Argyll)
A. G. Peppercorn (3½ Bradbury)
A. Burks (3½ Humber and sc.)
J. Woodhouse (2½ O.K. Precision)
V. Taylor (3½ Rudge)
Hugh Gibson (3½ Bradbury and sc.)
A. J. Hawkins (2½ A.J.S.)
H. H. Berlandina (3½ P.M.)
F. Applebee (3¾ Scott and sc.)
H. Bene (3 N.S.U.)
E. Rose (3½ Triumph)
E. F. Lawrence (3½ Rudge)
J. W. Thomas (2¾ Douglas)
F. Lord (6 Rex sidette)
H. F. S. Morgan (8 Morgan Runabout)
J. Hilyer (3½ Humber)
P. Tustin (2¾ Enfield)
R. L. Printz (5 Bat)
E. Pither (3½ Rudge)
G. Griffiths (2 Alcyon)
H. C. Bean (6 Matchless)
A. S. Phillips (7 V.S. and sc.)
W. C. Knight (3½ Triumph)
W. A. Jacobs (3½ Rex)
C. A. Moss (3½ Rudge)
R. H. Goddard (2¾ Douglas)
J. Oliphant (3½ Premier)
Gordon Fletcher (2¾ Douglas)
G. S. Drew (6 Zenith)
Montague Drew (3½ Zenith)
R. A. Abbott (3½ Bradbury)
F. W. Guinness (3½ Rudge)
R. G. Mundy (3½ Singer)
A. F. Plint (2½ Stuart)
H. Foote (8 Bat)
P. W. Pumphrey (3½ Arno)
L. Cass (3½ Quadrant and sc.)
S. C. M. Witham (8 Matchless)
A. V. Deacock (6 N.L.G. and sc.)
R. Holloway (3¾ Premier Twin)

The following did not finish:

F. W. Applebee (2 Centaur)
E. Purchase (3½ Triumph)
J. C. Prior (8 Bat and sc.)
George Baxter (2¾ Minerva)
K. H. Clark (3½ Corah)
C. Q. Roberts (3½ Arno)
H. G. Dickins (5-6 Clyno and sc.)
W. Wilson (4¼ Precision)
T. E. Lear (2½ Motosacoche)



A 6 h.p. CROUCH CARETTE FOR USE IN SCOTLAND.
As will be noticed, this smart design of three-wheeler has an interchangeable body—(left) a lorry body for laundry work; (right) the full touring body with which the former may be replaced.

THE PRICE OF MOTOR CYCLES.

Sir,—In the issue of *The Field*, dated November 25th, there is an article dealing with the recent Motor Cycle Show at Olympia. The third paragraph discusses the price of the motor cycle of the present day, and, in my opinion, the remarks contained therein are reasonable and justified. I trust you may therefore find space in your columns for a discussion on the subject, and that we may hear the manufacturers' side of the question.

The paragraph quoted is as follows: "There is one point upon which a complaint seems fairly reasonable. Motor bicycle manufacturers do not appear disposed to give their customers the full benefit of that cheapening in construction which we all know to follow greater familiarity and wider use. On almost every stand the standard motor bicycle is listed in a condition in which it is not going to be sold. The necessary additions are, however, included as 'extras.' A 1912 motor bicycle without a free engine clutch is an anachronism, yet where its cost is not plainly observable in the figures asked, it is boldly charged as an extra. Then again, two and three-speed gears, to be quite frank, are not offered at commercial prices. Ten guineas extra for a three-speed hub and seven guineas for two-speeds must strike any engineer as inviting a large measure of exclusiveness, and compare badly with the prices charged in motor car construction. Possibly patents and similar rights have to be blamed for this, but it will appear to many people as calculated to strangle rather than assist the popularity of variable geared machines—the next stage in the evolution of the perfect motor cycle."

I have quoted the whole paragraph, but, to my mind, the crux of the whole question lies in the first two sentences.

My own predilections are in favour of a powerful machine which, to quote a well-worn phrase, "will take a sidecar anywhere." It is difficult to quote a specific case without mentioning the name of the machine, but to take my own case as an example. The machine which I have provisionally decided on purchasing had for 1911 a drive and gear of a certain type. Presumably, this did not prove entirely satisfactory, as considerable alterations have been introduced for 1912. At the same time the price of the machine advances by two or three guineas. In other words, the customer and not the manufacturer has to pay for admittedly necessary improvements. Now this is certainly not the case in car practice, and should not be in the case of motor cycles either. I have been absent from England for some time, and cannot help noticing the considerable advance in the price of motor cycles all round.

I remember a few years ago a discussion in the motor car press as to whether it was possible to produce a reliable small car for the sum of £100. I foresee in the near future a discussion on similar lines as to whether it is possible to purchase a reliable high-powered motor bicycle with sidecar and necessary extras for less than that sum.

One has only to study the excellent "Buyers' Guide" which you published at the time of the Show to realise the point of my prediction.

Apologising for the great length of my communication,

MODERATE MEANS.

B20

Round the Spring Quarterly Trials Course.

THE HARROGATE AND DISTRICT M.C.C. WINTER RELIABILITY TRIAL.



COMPETITORS IN THE HARROGATE AND DISTRICT M.C.C. WINTER TRIAL.

Group of competitors and officials previous to the start from Harrogate on the 27th ult.

G. Hill (3¾ h.p. Scott and sidecar) the only passenger driver to start who, although losing eleven marks, made an excellent performances Sutton Bank proved the set back.

STARTING just after dawn on the 27th ult., the only passenger machine in this trial proceeded on its journey, and, half an hour later, the solo machines were despatched at minute intervals to do their best to cover 146 miles (exactly to schedule time) of probably the most difficult roads chosen for a winter trial. The route was Harrogate, Thirsk, Sutton Bank, Rivers Bank, Helmsley, Pickering, over the Moors, and up Spring Hill to Whitby, where lunch was taken at the Royal Hotel. From Whitby the coast road was taken to Saltburn, including Lythe Bank and Saltburn Hill; afterwards the run home *viâ* Stokesley and Ripon was comparatively easy. The weather overhead was all that could be desired, but the roads were most treacherous. In parts they were frozen and dry, but suddenly the surface would change into perfect quagmires. The danger was increased at night when riding with lamps lit, it being then practically impossible to tell whether one was riding in mud or ice.

Sutton Bank in Winter.

Of the eighteen entrants fifteen started in excellent spirits, but Sutton Bank soon proved a damper, for quite a number failed on this famous ascent at the first attempt. Rivers Bank likewise accounted for one or two failures, but only two competitors had lost time up to lunch. In the afternoon Lythe Bank was the scene of a few failures, as was Dalehouses, but, strange to relate, no one failed on the twisty Saltburn Hill, and it was probably as well, for a check was arranged at the top of this rise.

Soon after leaving Stokesley lamps had to be lit, and, as usual, a few competitors had trouble in that way. Nevertheless, seven riders reached Harrogate dead on time, and were welcomed by an enthusiastic crowd. Difficult as the course was, it proved impossible to find a winner, for two riders tie for first place. The result, compiled from the checkers' cards, but which has still to go before the committee for confirmation is as follows:

The Results.

T. C. Atkinson (3½ h.p. T.T. Triumph).—Lost no marks and had no trouble.

F. Mackay (3½h.p. F.E. Singer).—Lost no marks and had no trouble.

F. Philipp (3¾ h.p. Scott).—Lost 1 mark and had no trouble.

T. Maynard (3½ h.p. F.E. Triumph).—Lost 6 marks.

J. J. Day (3½ h.p. Bradbury, two-speed).—Lost 10 marks; lost way and ran into hedge.

W. E. Grange (3½ h.p. Bradbury).—Lost 1 mark; puncture.

F. Strafford (3¼ h.p. Humber, two-speed).—Lost 2 marks, failed Sutton Bank.

W. Prescott (3½ h.p. Bradbury, two-speed).—Lost 2 marks; ran into wall and damaged lamp.

W. B. Atkinson (3½ h.p. Triumph).—Lost 4 marks; side-slip and warped exhaust valve.

J. Mackay (2½ h.p. Singer, two-speed).—Lost 5 marks: no trouble.

H. W. Fortune (3½ h.p. Triumph).—Lost 8 marks: failed Sutton Bank and had lamp trouble.

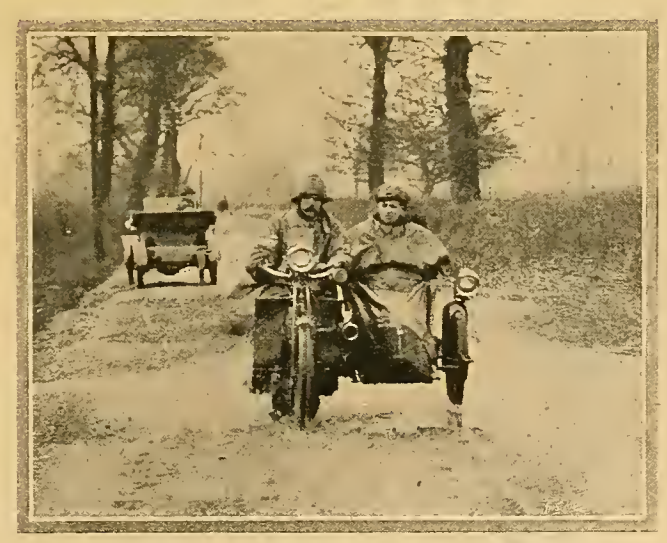
G. Hill (3¾ h.p. Scott and sidecar).—Lost 11 marks; failed Sutton Bank.

C. Nettleton (2¾ h.p. New Hudson, three-speed).—Lost 100 marks; failed on Sutton Bank, lost way, and had lamp trouble.

C. P. Finn (2¾ h.p. Enfield, two-speed).—Arrived at start with bad puncture, afterwards failed on Sutton Bank, so retired.

Gibson, Tindall, Spencer, and Strother did not put in an appearance at the start.

THE LONDON TO EXETER AND BACK RUN.



A Clyno sidecar at the water splash near Milbourne Port, between Sherbourne and Shafteshury.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

A Trio's Troublous Trip.

Sir,—We should like to congratulate "FAF" on "A Trio's Troublous Trip," published December 21st, as we happened to be the good repairer up a side street. Only the staff knows how hard and often the pulley was hammered and thumped to get it off, and well we remember, from what we saw, that after they could not remove the pulley from the engine, they tried their best to take the engine from the pulley; bolts and nuts everywhere. But a happier trio could not be met on the Cambridge Road.

F. BROWN AND CO.

Winter Mudguarding.

Sir,—I am pleased Mr. Ernest Frasetti has accepted my challenge, for he is not entirely unknown to me, and I am one of his greatest admirers, for I think some of his week-end journeys are marvellous, the most notable being, of course, his run from Southampton to Aberdeen. It will therefore be a pleasure to meet such an able and representative "chain driver," and should I be the individual to come out on top in our little "dust up," it will be something to my credit. If on the other hand I am beaten, my consolation will be that I shall have lost to a sportsman and a gentleman. As he has put his cards on the table and exposed his hand to me, I will tell him that I shall ride an 8 h.p. Dot with V.S. two-speed gear.

I have a few more nuts to undo than he has, but everything is quite simple with regard to the removal of the wheel, and he will have to "gallop." Now, as Mr. Frasetti probably knows, I am a musical hall manager, and cannot get away for any length of time (he will have a good idea when I can afford the time), so if he will suit his own convenience with regard to the date and district, I shall look forward with pleasure to our meeting.

ERIC LONGDEN.

Waterproof Motor Cycle Clothing.

Sir,—We beg to thank you for your courteous reception of our letter upon the above subject.

You ask, Why do trial competitors invariably don oilskins if they think they are in for a soaking day's ride? If they do don these garments with the idea that they will be better protected, it is because they have only had experience with cheap, trashy, rubber-proofed suits. If they had once tried a good quality material, they would never be seen in oilskins again. The bulk of rubber-proofed motor cycle clothing on the market to-day is not fit for the purpose for which it is intended.

As a counter question to yours, we would ask you why is it that one of the largest firms of motor cycle manufacturers have bought some dozens of our better quality motor cycle suits solely for their testers to wear? We think this speaks for itself, as efficiency and durability are the primary considerations in the case of testers. We have sold many hundreds of motor cycle suits, and have not had a single complaint of their becoming soddened or unproofed. No doubt there are many ill-designed and bad quality motor cycle suits sold in the effort to appease the demand for cheapness. It is a great mistake, as motor cycling is rough wear upon such garments, consequently they should be made of good materials.

We are certain that a good rubber-proofed motor cycle suit will be eventually cheaper and more efficient than oilskins. We can supply such suits which will withstand hard wear and pouring rain for twelve months, and then will keep the rider perfectly dry.

THE DUNLOP RUBBER CO., LTD.

Will the Ultra-lightweight Return?

Sir,—The letter in your issue of December 21st (page 1399) voices the need of hundreds of people who live in country places a few miles from the nearest town. Many such people have tired of the push bicycle, yet cannot rise to the upkeep of the ordinary motor cycle, but they would gladly purchase a cycle after the specification in J. Hart Smith's letter.

S. EDGE.

Sir,—With regard to J. Hart-Smith's specification, "An engine developing 1 h.p. actual, slung into a Rudge-Whitworth de luxe cycle frame."

Perhaps he has forgotten the different stresses and strains the engine would cause when in use on the road. The drive is not like the smooth pedalling of a rider, but a rough gun-like action instead.

I think that a gear of 13½ to 1 on a long hill would very likely overheat the engine; so much so that, in spite of pedalling, the machine would stop. I think that in actual use a 1½ h.p. built into a lightweight motor cycle frame is about the lowest h.p. for all-round use on the road.

T. MERINGTON.

Multi-pole Sparking Plugs.

Sir,—I notice in your issue of the 21st ult. a letter from Lodge Bros. and Co. in answer to letter signed E. P. Thomas (page 1370) in which they say there is no necessity to go to the expense of fitting a double spark magneto, as precisely the same result can be obtained with an ordinary magneto and double pole plug. Now the Bosch Magneto Co. have already told us in *The Motor Cycle* that an ordinary magneto used with a double pole plug will cause damage to the armature winding. As both the above mentioned firms happen to be experts, may I ask what the poor layman is to think? Both firms cannot be correct, so perhaps they will be so good as to tell us poor seekers after knowledge whether a double pole plug used with an ordinary magneto does or does not injure the armature winding and *the reasons*.

ONE OF THE SEEKERS.

Where to Pay Local Taxation Licences.

Sir,—As a London man, I wish to make some little protest against Mr. W. H. Browne's letter. I am in agreement with his desire to penalise the "unclean counties," but, as far as London is concerned, the matter is on a different footing. The cost of maintaining the Metropolitan Police is partly borne by the London County Council, but beyond this the London county authority has no control whatever over the Metropolitan Police District (extending from Esher on the west to Dartford on the east). The responsibility for police traps rests entirely on the Imperial Government (the Home Office, I believe) in general and the Superintendent of the Metropolitan Police in particular. There is no reason, therefore, why licences should not be taken out in London, as the county authorities cannot reduce the number of police traps.

I believe also that in the matter of ten-mile limits the London County Council has been unsympathetic to the appeals from the local boroughs for unnecessary scheduling.

PHILIP S. WHITE.

Sir,—Every motorist, I think, will agree that the advice contained in Mr. Browne's letter is worth following, as an organised boycott of the counties in which police traps are regularly worked is the best means of forcibly drawing attention to what is a most vindictive practice. According to the daily papers, the tradesmen in Gosalming are

beginning to feel the effects of the boycott instituted by the motorists in the district, owing to the traps in the town, and have applied to the council to do away with the same. If a boycott of the county councils themselves were brought about, I should say more notice would be taken of it, as the councils would lose the money, whereas, in the instance quoted, the tradesmen suffer, who are not responsible for the trapping.

With regard to the county of Derbyshire, which is given in Mr. Browne's list, I can say the police methods could well be taken as a model by other countries, especially those in the South, as I do not know of any traps or prosecutions simply for exceeding the limit. A few cases of dangerous driving have been taken up, and in these it has been proved beyond doubt that the drivers were to blame.

As secretary of the Derby and District M.C.C., I have on all occasions been treated with the utmost courtesy by police officials when arranging trials, hill climbs, etc., in the district.

I do not know whether the postal officials undertake to forward receipts for licences, but I make the offer to motor cyclists residing in trap infected districts, that if revenue forms, duly filled up and signed, be sent to me (13, Wilson Street, Derby), with covering cheque or postal order, I will undertake to pay same here and forward official receipt.

A. B. BENNETT,
Hon. Sec. Derby and District M.C.C.

Proposed Abolition of Cut-outs.

Sir,—I have ridden a lot this summer with a 1911 3½ h.p. and sidecar of popular make, and have had many an enjoyable run, but if my "cut-out," which is only necessary to use on hills, were made illegal those hills would become impossible. I quite agree that a powerful machine with an open exhaust can be, and frequently is, a nuisance to other road users and the public generally, but there can be no doubt that the poor owner of a 3½ h.p. and sidecar, if his "cut-out" be prohibited, will find it impossible to use his sidecar.

E. J. WRIGHT.

Handicapping Club Competitions.

Sir,—Is there any workable method of handicapping successful competitors in hill-climbing competitions? In our club, of about 100 members, we know for a certainty that our six hill-climbing competitions this year will be won by not more than five members. It must be admitted they are all real good tip-top men, capable of holding their own with the best, but a club is not run for the benefit of anyone or a dozen members, but for the whole body. When there are such good men in a club, it is useless for the average rider to compete. He has absolutely no chance at all, and never will have until some workable form of handicapping is universally adopted.

C. B. ROBINSON,
Hon. sec. Westmorland M.C.C.

The Tyre World.

Sir,—"Ixion," in his "Occasional Comments," touches upon one of the most vital forehead-creasing troubles in the motor cycle world, viz., suitable tyres. It is apparent that the much lauded types standardised by nearly all motor cycle manufacturers are totally unsuited to the general requirements of users who claim to do any long distance riding.

Why will not these manufacturers fit wearable covers, which can be honestly recommended, and be part and parcel of their productions?

When will they wake up to the fact that a really good hard-working cover, listed, fitted, and advertised as a coadjunct, will tend to sell their machines?

There is no reason to run round the world and back again to seek the reason of many of these firms fitting unwearable and cheap covers. The fact is that they buy in the cheapest market, and when the machine is sold, their liability, as far as tyres are concerned, becomes a negligible one. Any ensuing trouble has either to be taken up against the tyre manufacturer by the motor cyclist, or his agent.

In the last Six Days' Trials the "penny wise and pound foolish" policy of fitting cheap and nasty tyres was painfully plain to see. The writer was present and saw two competitors actually wear out five of these unsuitable covers during the 1,000 odd miles.

FREDK. J. THISTLETHWAITE.

Hill-climbing.

Sir,—Mr. A. Newman suggests a tour for Mr. Frank Smith's Clyno and sidecar, and, amongst other places, he includes Honister Pass. I suppose he knows the road or else he would not mention it, but he might as well ask Mr. Smith to ride up Great Gable. I know the Buttermere district, and have frequently walked up and down Honister, and only last Easter I helped to turn a 90 h.p. racer round which had failed to get up. The road is at least eight inches deep in loose slag, and it is absolutely impossible for any motor vehicle to climb it from the Buttermere side, at least in my opinion. I do not think Mr. Newman is quite sporting in asking Mr. Smith to accomplish the impossible.

FAIR PLAY IN ALL THINGS.

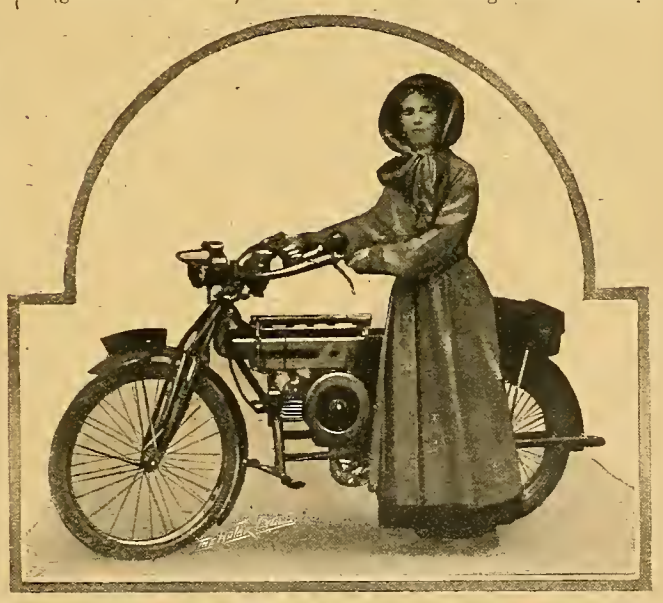
How to Prevent Side-slip.

Sir,—I have read your interesting article on the above, but have never seen mentioned the advantages in grease of a free engine when handle-bar controlled.

I find that when riding over a specially greasy patch, and I wish to reduce the speed of the motor cycle, it is very much better to slip the clutch and race the engine a little rather than check the speed of both the engine and cycle by raising the exhaust valve. I suppose gyroscopic action must come into play; at all events it arrests the slip of the road wheels and steadies the machine immediately. I may say I have my clutch control fitted on the right handle-bar grip and the exhaust lifter on the left, so that if the noise of the explosions gets unpleasant when engine is running free, I simply raise the lifter and the engine continues to revolve without noise. This gives a very nice control.

GUY WROWE.

Sir,—I see in *The Motor Cycle* of the 21st ult., a photograph of Miss Hobson, who says she believed there is only one other lady in Lincolnshire who rides a motor cycle. I am enclosing you a photograph of myself and 2¾ h.p. Douglas (gentleman's model), which I have been riding since last July.



Miss Nellie Drury and her diamond-frame Douglas. She is supposed to be the third lady motor cyclist in Lincolnshire.

During that time I have ridden about 1,500 miles, my longest journey being on July 23rd, when I rode from Sturton-by-Stow to Yarmouth, a distance of 131 miles, in eight hours.

I find no difficulty in managing the machine, having had the saddle removed and a seat fixed on the carrier. I have also had guards fixed over the belt and engine. As regards dress, I think an ordinary walking skirt and long mackintosh quite suitable. I agree with Miss Hobson that many more ladies would join the ranks if they only knew how simple and fascinating a motor cycle really is.

NELLIE DRURY.

Tolls and Taxes.

Sir,—I should like to express my approval of the remarks of "C.R. 10:0" in your last issue. At the time of the naval review at Spithead I and a few friends motored to Portsmouth. We went from Southampton by way of the Bursledon Bridge and paid the toll of 3d. each. Being strangers to the district, we were unaware that a return ticket could be obtained for 4½d., neither were we enlightened. We were very surprised upon our return the same day to find another 3d. per head demanded, as we certainly thought that one payment would take us through upon both occasions. I think, with your correspondent, that it is high time such impositions as these were abolished.

THOS. C. OWEN.

Lubrication Systems.

Sir,—In your recent article on lubrication systems you mention some disadvantages of the splash system as applied to the internal fly-wheeled engine big ends.

Now in an external flywheel engine two of these disadvantages are eliminated. The big end dips right into the oil at every revolution, thus getting far better lubrication than if flywheels were there to fling the oil away. Also the balance weights of the single piece crankshaft dip, throwing enough oil on to the cylinder walls. Again, owing to there being no internal flywheels, there is hardly any power absorbed by internal friction of the oil.

Take an internal flywheel engine, remove cylinder or piston, and revolve the engine by hand, taking hold of the top end of connecting rod, and if the crank case has the usual amount of oil in it, quite an appreciable resistance will be felt, while if the crank case be dry and no oil on the flywheels it is surprising how much more easily the engine revolves.

Now take the grooving of big-end bushes. My idea of lubricating the big end is to get the oil there and keep it there, and not allow it to escape by other grooves, like one engine I know, which has the bearing surface of the big end reduced almost by a third by a number of spiral oil grooves. The oil is supposed to get in by one end of the grooves, and what does get there travels through the spirals out to the other end bush. This, I think, is an absurd arrangement, because the oil should stay in the bearing, and should only escape after having lubricated the surface of crank pin and bush.

One system of oil grooves which I used with great success was to drill the connecting rod with two holes from the top (of big end), leading to two horizontal grooves half-way down the bush, these grooves having blind ends. The oil got there, of course, and only escaped after doing useful work, lubricating the bearing properly.

The size of big-end bearings is not sufficient, too. When we realise that the present-day big end is about the same size as the old De Dion tricycle engine, it is absurd to imagine that these bearings will wear properly when we load them to the extent of another 50% h.p. This, of course, is leaving out the question of bearing material, lubrication, and engine speed.

One thing which I am sorry to see discarded is plain bearings for the engine-shaft. I certainly think that engines used to run more sweetly than those fitted with ball bearings, as there was a certain cushioning effect with the former, whereas with the latter I think engines have a certain amount of "ring" about them caused by ball bearings. It is not an unknown thing for a ball race to come loose in the crank case. Then what is to be done? Either try and find another ball race which is a better fit, or fake the old one, by nickel plating it for instance, so as to make it a tight fit.

It would be interesting to hear the opinion of riders of external flywheel engines and others on the above points.

AMATEUR.

The Quality of Modern Tyres.

Sir,—With regard to correspondence on the quality of modern tyres. I purchased recently a heavy studded tyre, guaranteed for 3,000 miles. After a 600 miles tour I found the studs worn away. I wrote the makers for an explanation, but receiving no answer wrote again, and am still waiting and this is the way they carry out their promises.

J. S. TURNER.

A Suggestion for Second-hand Sales.

Sir,—A difficulty often arises when one, as a private advertiser, is disposing of a motor cycle, as the purchaser seldom brings the amount in cash, and in dealing with strangers it is unwise to accept a cheque. Quite recently I advertised a machine for sale in *The Motor Cycle*, and a gentleman travelled a long distance by train to inspect it. He decided to buy, but the amount being between £50 and £60, naturally could not hand me the purchase price in cash, and although, as far as appearances went, everything was in his favour, I could not bring myself to accept his cheque; we therefore decided upon the following plan. The cheque was handed to me, and the machine deposited with the proprietor of a well-known garage, to whom we both handed our visiting cards, and the undertaking was entered into that the machine was not to be released except in the presence of both parties, an appointment being fixed for three days later. In the meantime, the cheque was cleared, the appointment duly kept, and the machine handed over to its new owner. I daresay quite a number of holes might be picked in the arrangement if viewed from a strictly legal standpoint, and one of them would be that we could not make the garage proprietor responsible. The plan worked excellently, however, in our case, and it might, we thought, be acceptable to other persons placed in a similar situation. The advertisement appeared on a Thursday morning and the machine was sold the same day, while on my return home a caller was waiting, purchase money in hand, and I subsequently received several additional offers.

SATISFIED.

SUMMARY OF CORRESPONDENCE.

"Pedal Cyclist" wishes to warn readers not to fill the carbide containers of combined lamps or separate generators more than half full at most. He has seen several motor cyclists fill the container without allowing for expansion, with the result that the decomposed carbide formed into a solid, practically, gas-tight mass, thus choking the gas outlets.



The motor cycle section of the Coventry and Warwickshire M.C. assembled for the "Yuletide" run last Saturday.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply.

The Steepest Hills.

Will you oblige me by giving a list of the first four steepest main road test hills in England as far as known?—A.H.D.

Four of the steepest hills in this country are: Sutton Bank, maximum gradient 1 in 3.96; Green How Hill, about 1 in 4 (both these are in Yorkshire); Birdlip, near Gloucester, about 1 in 5; Porlock, Somerset, 1 in 3.4.

The Use of a Release Valve.

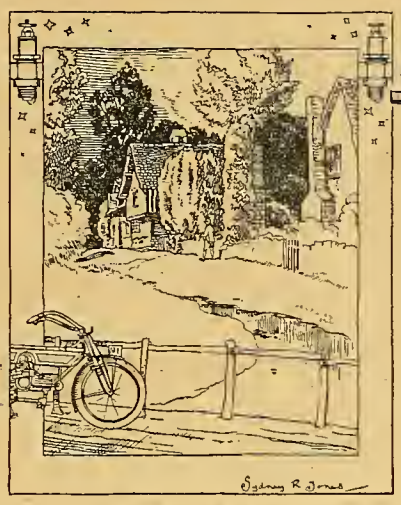
Will you kindly answer these questions? (1.) What is a release valve for in crank case? Is it necessary? (2.) Is $\frac{1}{16}$in. too much clearance between exhaust and tappet? (3.) Can I start a 5 h.p. twin; free engine (on engine-shaft), magneto ignition, with a handle? If not, why?—L.A. 2435.

(1.) A release valve serves to get rid of compression in the crank case. Most of the pressure in the crank case is released so that oil is not blown through the bearings. (2.) Yes. The clearance should be about $\frac{1}{32}$in. (3.) It is very difficult to start a V-type twin with a handle on the engine-shaft, because unless the handle be geared up it is almost impossible to turn the engine fast enough to enable a motor cycle magneto to give a sufficiently strong spark to ignite the charge.

Magneto Timing.

Would you kindly inform me on the following points: (1.) The Bosch Co. say, when the piston is at the top dead centre of compression stroke, the distance between the trailing edge of the armature and the pole piece that it is leaving should be 5 mm. Where is the armature when the highest tension is generated, as I wish to make the points break at that particular point? (2.) I have been riding a Chater-Lea-Lagonda this season; now I have bought a new two-speed Humber. I gave the old machine in part payment. Can I use the same registration letter and number on my machine?—ANXIOUS.

(1.) You will not go far wrong if you set the magneto as pointed out to you by the Bosch Co. For information regarding the maximum position of the armature, which we presume you require to know, we refer you to "Motor Cycles and How to Manage Them," fourteenth edition, pages 57, 58, and 59. This book can be obtained from these offices, price 1s. 2d. post free. (2.) No, you would have to cancel the registration of your old machine, and, if you wish to retain your old number, ask leave to have this number allotted to your new machine.



St. Helens to Starbeck.

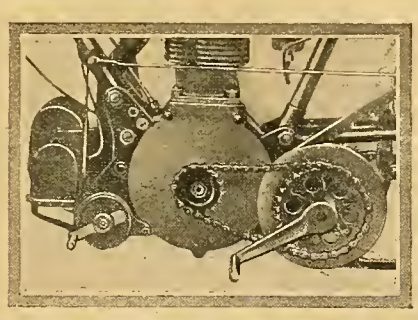
As an old reader of your paper, I shall be obliged if you will inform me the best way from here (St. Helens) to Starbeck (near Harrogate, Yorkshire). Kindly also give distance.—J.H.

Your best route would be as follows: St. Helens, Ormskirk, Preston, Clitheroe, Gisburn, Skipton, Ilkley, Otley, Harrogate, to Starbeck. The distance would be approximately eighty-two miles. The route we have given you avoids most of the big towns

Colchester to Bristol.

I have often seen details of cross-country routes given in your paper in answer to correspondents. I should be obliged if you could let me know if there is a road from here (Colchester) to Bristol avoiding London. I have done the journey through London several times, but it is not a ride that I should care to do at this time of the year.—LB 963.

Your best route would be as follows: Colchester, Braintree, Bishop Stortford, Ware, Hertford, Hatfield, St. Albans, Watford, Rickmansworth, Denham, Uxbridge, to Colnbrook, where you find yourself on the Bath Road. Then you continue through Maidenhead, Reading, Hungerford, Marlborough, Calne, Chippenham, to Bristol.



The Calthorpe two-speed countershaft gear, which is driven by a short chain, the final transmission being by belt, as shown. The gear wheels are always in mesh, and engagement is effected by means of internal expanding clutches brought into operation by a long lever at the side of the tank.

Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Two-speed Single and Sidecar.

(1.) I am purchasing a 1910 3½ h.p. Bradbury two-speed machine and am looking out for a sidecar for use with same. (2.) I should much prefer a coach built car similar to Messrs. Mead and Deakin's Canoelet sidecar. I am told, however, that this is too heavy for the machine and should be glad to know your opinion on the matter. (3.) I do not want to go in for a high-power machine, as the main use I shall have for it will be solo riding to and from business every day, and it will only be on comparatively rare occasions that I shall use the sidecar.—H.B.S.

(1.) With a two-speed motor bicycle you should be able to climb most hills, but of course, with a 3½ h.p., you have not much reserve of power. (2.) The Canoelet sidecar weighs 77 lbs., which is not at all excessive; 90 lbs. being not unusual. (3.) As you intend to use the machine chiefly for solo work, we feel sure you will be able to manage satisfactorily.

Choosing a New Machine.

(1.) Do you think the Arno 3½ h.p. fitted with a Sturmey-Archer three-speed gear, free engine, strong enough to take a Montgomery sidecar, driver, and passenger, combined weight 18 stones, up any hill round about Sheffield? (2.) Do you think the Arno method of fastening the engine to the frame reliable? (3.) Would you prefer a two or three-speed on this machine for the work for which I require it? (4.) Which start do you think is the best—pedal, handle, or kick? (5.) For changing gears which would you advise, foot change or handle-bar?—H.B.

We have a good opinion of the machine about which you specially enquire, and think it would suit your purpose. (1.) The machine should certainly be powerful enough to take a sidecar fitted with the three-speed gear mentioned. (2.) The method of attaching the engine to the frame is quite reliable. (3.) There is no doubt that the three-speed gear would be the more efficient, as the intermediate gear is of great advantage, but probably the two-speed would be slightly more substantial. (4.) The advantages of pedal or kick starting are that it is more certain, and no loose handle need be carried. (5.) It is merely a matter of what the rider is used to—some prefer the foot and some the hand. The Bowden gear has both methods. The Sturmey-Archer lever is on the top tube.

Burton-on-Trent to Portsmouth.

Will you kindly oblige by giving me the best routes from Burton-on-Trent to Portsmouth ?—P.L.C.

You will find the following routes suitable: Burton-on-Trent, Ashby-de-la-Zouch, Atherstone, and along Watling Street to the "Three Pots" Inn, then turn to the right through Wolvey to Coventry. In this way you avoid the miles of trams at Bedworth and beyond. On *viâ* Southam, Banbury, Oxford, Didcot, Abingdon, Newbury, Winchester, Bishop's Waltham, Fareham, Cosham, to Portsmouth. Return *viâ* Cosham, Petersfield, Greatham, Alton, Basingstoke, Aldermaston, follow Bath Road almost to Theale, where turn to left *viâ* Pangbourne, Streatley, Wallingford, Oxford, Banbury, Warwick, Kenilworth, Stonebridge, Coleshill, Lichfield, Alrewas, to Burton-on-Trent. The roads should be fairly good.

Registration for Short Periods.

My brother resides permanently in the South of France, and rides a Douglas. He is coming over to England for a holiday and bringing his motor with him for three weeks, and then returns to France. Which is the best road route to St. Malo from St. Jean d'Angely (which is in Charente Inférieure) ? I understand he does not carry a registration number in France at all. Must he register on the English system whilst over here, or would a simple "F" plate be in order ?—C.P.

The best route would be through Niort, Fontenay, Chantonnay, Montaign, Nantes, Bain, Rennes, and St. Malo. It would be worth while your brother becoming a touring member of the Auto Cycle Union. Unless he exhibits French registration numbers and an international plate, he will have to carry British numbers, pay registration fee of 5s., and the £1 local taxation licence.

Transfer of Numbers.

I have been reported for riding a machine with false numbers and for not having it registered. Herewith are full particulars of my case: In November, 1910, I took out a registration No. C 869 for a P. and M. machine. In May, 1911, I sold the machine on the condition that the purchaser should take out a fresh number, and I should retain my old number, as I was about to buy a more up-to-date P. and M. machine, which I did, and fixed my old No. C 869 on the second machine. Now what I want to know is whether I am right or wrong in doing as stated?—L.B.

The trouble seems to be due to the fact that you did not inform the authorities that you had sold the machine, and that they were to cancel the registration thereof. There is no question of selling the machine on condition that the purchaser should take out a fresh number. You are entitled by law to cancel the registration, and the purchaser has then no alternative but to take out a fresh number. If you then write to the authorities and ask leave to retain your old numbers they will probably agree to your request. We should recommend you to write to the superintendent, or chief constable, and tell him the facts of the case, and that you acted entirely in ignorance.

Horse-power of Twins.

(1.) The 60×76 J.A.P. twin engine is described by the Matchless Company as 3 h.p. and by the P.V. firm as 3½ h.p. Now if the former be correct it would be 1-11th more powerful than the Douglas 2¾ h.p. 60 × 60; if the latter be correct it would be 3-11ths more powerful. Now I wish to buy a twin that will be at least ¾ h.p. more than the Douglas, but I would not change for a paltry 1-11th. (2.) Could you give me the names of firms who supply 3½, 3¾, and 4 h.p. twins of good make? There is a remarkable absence of medium powered twins in the list recently published by you. (3.) Would the belt tension be the same for all positions of the back wheel while "springing" on the P.V.?—J.H.J.

(1.) The nominal horse-power given by makers is not much guide unless the size is known. You may take it that the power of a motor cycle engine varies as the capacity. This is not absolutely true, as the compression ratio, number of revolutions, size of valves, etc., all have an influence on the matter, but as these do not vary very considerably they may be ignored without serious results. (2.) The J.A.P. engine you refer to is 430 c.c., Douglas, Humber, and Centaur 340 c.c., Enfield 343 c.c., Forward 344 c.c., N.S.U. 396 c.c., Wulfruna and Martin Racer 498 c.c., Scott 535 c.c., and Premier 548 c.c. So if we reckon the Douglas as 2¾ h.p., the J.A.P. would be nearly 3½ h.p.; as a matter of fact both engines give considerably more. Twins are generally made as lightweights under 350 c.c. or heavyweights 5 h.p. and upwards. (3.) The belt tension will vary slightly, but the variation will not be appreciable. The machine is most comfortable to ride.

Compression Increased by Longer Piston.

I should like to know if you can advise me on the following points. I have an old Minerva 2 h.p., 70 × 75 mm., a.o.i.v., which used to run very well until I had the cylinder reground and new pistons and rings fitted. The cylinder has a separate head, and when the head of cylinder is removed the piston appears for a quarter of an inch above the top of the cylinder. The timing and compression are right, and the carburetter which used to run it so well will only produce ten miles per hour. I cannot get any more or any less. I might say that the old piston came flush with top of cylinder. Would the new piston coming a quarter of an inch higher affect the engine to this extent ? as I am told it has altered the cubical capacity of engine.—D.A.P.

From what you say it is evident that a longer piston has been fitted. This does not alter the cubic capacity which depends upon the bore and stroke, but has considerably increased the compression ratio. This will seriously affect the running, and we should advise you to obtain a piston of the same length as the old one.

EXPERIENCES WANTED.

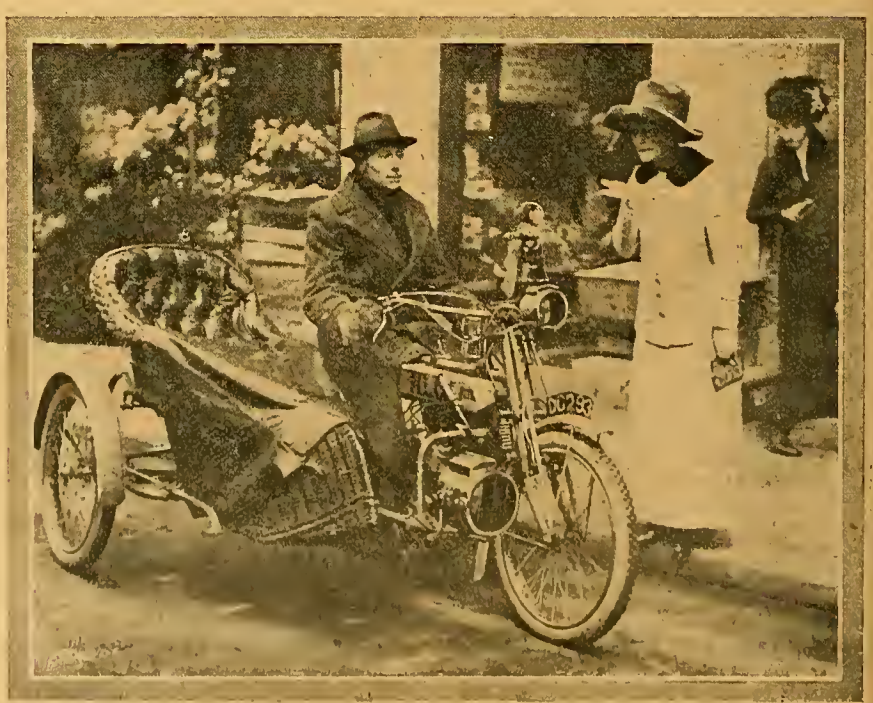
Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"C.M." (Perth).—2¼, 3, and 3½ h.p. Lincoln Elk. With and without sidecar.

"F.G.B." (Eastbourne).—7-9 h.p. Indian. Reliability and petrol consumption.

"D.J." (Portadown).—2¼ h.p. Lincoln-Elk. Reliability and hill-climbing. Also Shamrock-Gloria belts.

"E.C.S." (Worthing).—Triumph new foot control of ignition.



Miss Pauline Chase christening a new motor bicycle before proceeding to the Duke of York's Theatre to resume her part of Peter Pan. Miss Chase has played the *role* nearly a thousand times.

Comparisons are Odious—

but we **really feel compelled** to give you a packet this week. We are being **deluged with enquiries** week by week, since the Show, asking what we can allow on various machines in part payment for others, either new or second-hand. We note that some firms are offering the **most ridiculous prices** for old machines, in part payment for new or second-hand ones. The prices that they are offering are such as they really cannot afford to allow except by **deluding the customer.** Their system appears to be offering to allow big prices, **subject to approval**, and the **innocent customer** sends his machine up, expecting to get **this wonderful allowance**; instead of that, he gets a letter stating that they regretfully inform him that they cannot possibly make the allowance, as, now they have seen it, **it is not worth as much as they anticipated by some £10 or £15.** If, as has been the case in several instances that we know of, they decline their offer, then the prospective customer has **the carriage to pay back**, either to his own place, or to Hitchen's of Morecambe—**that is, to the man who does not offer any fancy prices**, but who names within a trifle of what he is actually prepared to allow, and who also offers this option, in the case of first-class machines, that if the deal cannot be put through, **the machine will be returned to you CARRIAGE PAID.** On the other hand, **they may allow their fancy offer to stand**, but you will find that what they allow more than the fair value of the Motor Cycle **is added twice over to the actual value of the Motor Cycle you are about to purchase**, so in the end you get done, as of course they don't allow you to return the Motor Cycle and **have your money back, as is the case with Hitchen's.**

Then again, you pick up the papers and read perhaps that one of these firms will send you anything you like, from a Sparking Plug to a Motor Cycle, on approval, on receipt of the cash, and from this you naturally conclude that if you don't like the machine, you are at liberty to send it back, and have your money back, as with Hitchen's, but, when you come to try it you find, to your sorrow, that it is not so, but that it simply means **they are only prepared to exchange it for another. They** have got your money, and you have to take what they like, and you keep on paying carriage time after time.

With Hitchen's, you have it straight from the shoulder week after week: if anything you get from us does not suit you, **return it within three days and HAVE YOUR MONEY BACK IN FULL.** If, however, you live so far off that it is impossible to send a machine back so as to arrive within three days, **we are prepared to extend the approval period to six days. We don't** ask you to send the machine back and exchange it for another, unless it is your wish to adopt this course, but we simply **send the money back IN FULL**, and you can then have a packet with some other firm.

ALL our machines are **guaranteed** to be in **perfect RUNNING ORDER**, as we keep expert mechanics on the job to make them so, if they are not in order when they come to us.

By the bye, we are contracting agents for P. & M.'s, Scotts, Zeniths, Eats, Matchless, Humber, Douglas, Clyno, Bradbury, Premier, A. C., Morgans; also can supply Rudge, Hobart, B.S.A., Triumphs, Enfield, A.S.L., and any other good machine on best of terms. Cash, deferred, and exchange.

We have several New Lists just come in from the printer. Send a postcard stating your wants, also ask for any advice you may want.

You cannot have forgotten the address—

Morecambe, Lancashire.

MATCHLESS

"The Passenger Machine"
That takes you out and brings you home again with the speed of an Express Train, and the quietness of a £1,000 car.

6 Weeks' Delivery from date of Order Guaranteed.

ALL Spare Parts in Stock for Engine, Gear, and Machine.

For Immediate Delivery.
1912 8 h.p. Passenger Model.....70 guineas.
1912 6 h.p. T.T. Roadster Model.....84 guineas.

REPAIRS. EXCHANGES.

"The Only Authorised AGENTS"—
The LONDON MATCHLESS MOTOR CYCLE AGENCY
184, Great Portland Street, LONDON, W.

FOX



40/- Rubber-stud Covers.

A few Shop-soiled to clear at

22/6 each.

NET CASH WITH ORDER. APPROVAL.

Not damaged or old stock. They carry same guarantee as ordinary new goods.

ORDER AT ONCE OR YOU WILL LOSE A GREAT BARGAIN.

FOX (Dept. D.), 30, John Bright Street, BIRMINGHAM.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent and Sussex

SECTION IX
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

WAUCHOPE'S

OFFER

MORE & GREATER ADVANTAGES TO MOTOR CYCLE PURCHASERS THAN ANY OTHER HOUSE.

You can prove it by asking for our To-day's LIST, which includes—

	H.P.			£	s.
4748.	2¾	1911	Douglas	30	0
4749.	3½	1908	Brown	15	0
4758.	3½	1911	Single-speed Humber	30	0
4775.	2¾	1911	2-speed Enfield	35	0
4777.	5-6	1910	4-cylinder F.N.	30	0
4784.	3½	1911	T.T. Ariet	30	0
4786.	4½	1910	Twin Minerva	22	10
4792.	5-6	1911	4-cylinder F.N.	35	0
4793.	3½	1911	Bat	35	0
4700.	3½	1910	P. & M.	42	0
4738.	8	1911	Chater-Lea No. 7 and coach-built Sidecar	70	gns.
4738.	3½	1909	P. & M. and Sidecar	38	gns.
4741.	3½	1910	Ariel, variable gear	30	gns.
4742.	3½	1908	Triumph and Sidecar	30	0
4745.	2½	1911	3-sp. New Hudson	35	0
4731.	3½	1911	2-sp. Humber	36	0
4733.	6	1910	3-sp. Chater-Lea and Sidecar	40	0
4729.	2¼	1910	Royal Enfield	24	0
4730.	2	1910	Moto-Reve	21	0
4727.	3½	1911	Kerry-Abingdon	32	10
4723.	3½	1908	Triumph	27	10
4722.	2¾	1911	Douglas	32	10
4720.	3½	1910	2-speed Humber	30	0
4719.	2¾	1911	Douglas	30	0
4603.	3½	1910	Standard Triumph	35	0
4605.	5-6	1910	4-cyl. F.N.	25	0
4607.	3½	1911	Kerry-Abingdon	32	0
4707.	3½	1910	Lincoln-Elk	23	0
4706.	2¾	1911	Lady's Motosacoche	29	0
4701.	2¾	1909	Twin N.S.U.	20	0
4699.	3½	1910	2-speed Humber	30	gns.
4692.	4½	1909	4-cyl. F.N.	20	0
4689.	3½	1910	Tourist Rex	28	10
4686.	3½	1911	Zenith Gradua	42	10
4677.	3½	1910	Bradbury	30	0
4685.	3½	1911	2-speed Humber	37	10
4670.	3½	1911	Bradbury	35	0
4420.	3½	1911	F.E. Premier	40	gns.
3894.	1¾	1910	F.E. Motosacoche	22	10
4308.	7	1910	2-speed V.S. and Sidecar	40	gns.

The largest stock of Up-to-date Motor Cycles ever gathered under one roof, including 1912 models, which all desire but few can get. New 1911 models of the most famous makes; and genuine second-hand machines overhauled and put in perfect repair. Every machine fully guaranteed and certain to satisfy.

SEND DETAILS OF YOUR USED MOTOR CYCLE AND RECEIVE OUR LIBERAL CASH OFFER FOR SAME IN PART PAYMENT OF A NEW MACHINE.

WAUCHOPE'S

9, SHOE LANE, FLEET ST., LONDON, E.C.

'Phone: 5777 Holborn. Wires: "Opificer, London."

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or it "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

1910 Free Engine Excelsior, a splendid machine; offers or exchange for twin.—Bone, Wycombe St., Darlington.

3½h.p. Triumph, magneto, h.b.c., just been overhauled; £18, a bargain.—Turvey and Co., The Motor House, Sunderland.

3½h.p. Triumph, 1907, with 1910 cylinder and piston, magneto and h.b.c.; £23 to clear.—Turvey and Co., The Motor House, Sunderland.

2¼h.p. Royal Enfield Twin Lightweight, new June, 1910, in grand running order; £24, bargain.—Turvey and Co., The Motor House, Sunderland.

3½h.p. 1909 Rex, magneto, Amac carburetter, h.b.c., in grand order; £22 to clear.—Turvey and Co., The Motor House, Sunderland.

3½h.p. Humber, 1911, only been in use 2 months, 2-speed gear, practically good as new; a bargain, £35.—Turvey and Co., The Motor House, Sunderland.

3½h.p. Triumph, free engine, just delivered; immediate delivery from stock.—Turvey and Co., The Motor House, Sunderland.

2¾h.p. N.S.U. Twin, magneto, h.b.c., belt tensioner, spring forks, spares, perfect condition; £22.—Holmes, Dunster House, Durham.

A.J.S., 2½h.p., 2-speed, free engine, chain drive, brand new; list price £46/4, accept £42, or nearest.—Muir, Yarm Lane Corner, Stockton.

3½h.p. 1910 N.S.U., 2-speed gear model, complete with sidecar, lamp, and horn, in perfect condition; £37/10.—Apply, Shaw, 39, Eldred St., Carlisle.

TRUSTY Triumph, 1909, September, perfect condition inside and out, lamp, generator, horn, and numerous spares; £30.—Holmes, Dunster House, Durham.

3h.p. Automoto, h.b.c., B. and B., 26in. wheels, very low, spring seat pillar, Brooks, horn, reliable; for quick sale £6, or nearest.—Bishopbriggs, Crown St., Carlisle.

TRIUMPH, 3½h.p. (2/12/07), newly plated and enamelled, new Kempshall front, new Rom back, new Dermatine belt, horn, and tools; £26.—Dent, joiner, Linthorpe, Middlesbrough.

SECTION II.

York and Lancashire.

INDIAN, 7h.p., blue, condition excellent; £47/10.—Seal and Ball, Southport.

1908 Triumph, new Palmer rear, Dunlop belt, a fine mount; £26.—Cross, jeweller, Rotherham.

1911 Standard Triumph, in fine order, £39; 1911 T.T. Triumph, £37; 1911 6h.p. 2-speed Matchless twin, belt, £60.—Cross, agent, Rotherham.

1912 MODELS 1912

PREMIERS. CHA ER-LEA.
MATCHLESS. CLYNOS.
RUDGES.

Early Deliveries—Best Exchanges.

TRIUMPH, 1909, two speeds £37 10
PHANOMEN, 6 h.p. twin, two speeds.... £35 0
TWIN REX, 6 h.p., accumulator ignition £13 10
5½ h.p. Twin **REX,** free engine £11 10
3½ h.p. **REX,** M.O.V., low built £6 18
MINERVA, Twin, 4½ h.p., spring forks.... £16 10
N.S.U., 4 h.p., brand new, single-cylinder, ideal sidecar machine; listed £48 .... £36 0
REX DE LUXE, 5 h.p., twin, two speeds, handle starting, M.O.V., 1911 model .. £43 10
REX DE LUXE, 5 h.p., twin, two speeds, 1910 ..... £42 10
REX, 3½ h.p., spring forks, magneto, h.-b. control, 1909 model £22 10
HUMBER, 3½ h.p., 1909, two speeds, handle starting, h.-b. control £26 10
REX, 3½ h.p., 1908, spring forks, magneto, h.-b. control, beautiful condition .. £16 10
N.S.U., 3½ h.p., two speeds, magneto £19 10
N.S.U., 3½ h.p., magneto, good order £16 10
QUADRANT, 3½ h.p., magneto, spring forks £16 10
REX, 5 h.p., twin, with forecar £9 10
N.S.U., 3½ h.p., M.O.V., magneto £15 10
N.S.U., 3 h.p., M.O.V., nice order £10 0
REX DE LUXE, two speeds, magneto, handle starting, h.-b. control £26 10
ENFIELD, 2½ h.p., M.O.V., acc. ignition £9 10
TRIUMPH, 2½ h.p. £6 10
HOBART, 3 h.p., vertical engine, low £8 10
ROYAL STAR, 2½ h.p., vertical engine .. £5 10
KERRY, 2¾ h.p., 26in. wheels, vertical engine £8 10
OLYMPIC, 3½ h.p., vertical engine, 26in. wheels £6 10
PREMIER, 3½ h.p., 1912, three-speed gear £58 0
PREMIER, 2½ h.p., 1912, three-speed gear £47 5
QUADRANT, 3 h.p., vertical engine..... £5 10
ARIEL, 3½ h.p., vertical engine, M.O.V., 26in. wheels, nice condition £8 10

PUSH CYCLES TAKEN IN EXCHANGE.

TRICARS.

TWIN REX, air-cooled, belt drive. Fit-all two-speed gear £14 10
STEVENS 4 h.p., single-cylinder, air-cooled Roc two-speed gear, handle starting £14 10
TWIN REX, 5 h.p., air-cooled £9 10

CARS.

DARRACQ, 9 h.p., two-seater £15 15
EAGLE, 14 h.p., four-cylinder, five-seater, two speeds and reverse £23 10
HUMBER, 5½ h.p., two-seater, bucket seats, two speeds and reverse £13 10
PHŒNIX, 8 h.p., two-cylinders, magneto, hoods, screen, and lamps £56 0

MISCELLANEOUS.

Darracq Chassis, with wheels, tyres, steering gear £5 0
Gear Box, three speeds and reverse £4 0
Longuemare Carburetter, h.b. control 7/6
Ditto, B. & B., and Amac 12/6
Back Wheel, with Roc 2-speed and 2¾ tyre £5 0
Twelve Accumulators, want cleaning, each 1/6
New Pistons, 81 mm. bore ..... each 2/6
New Twin Roc Cylinder, M.O.V. 12/6
Good Rigid Sidecar 57/6
Powell and Hammer 27/6 Lamp 12/6
New 26 × 2¼ Tubes, with valves 3/10
Tee Bee Spring Seat-pillar 7/6
Carburetters, Longuemare and F.N. 4/6
New Amac Carburetter, h.b. control 5/-
Long Handle-bars, drop ends .. 5/6 and 6/6
Coronet Silencers, up to 5 h.p. .. 3/3 and 4/6
XL All Spring Forks 9/6
Gripskin Belting, ¾in. 10d., ⅞in. 11d., 1in. 1/-
Wide Mudguards, 3in. 2/3, 4in. 2/11 per pair.
Handle-bar Watches, with holders 4/3
New Sidecar Frame and Wheel 35/-
Trembler Coils, 6/6; plain 2/11
Powell and Hammer £1 Lamp 11/6
16 Guinea Lowen Sidecar £5 0
Nearly New Coronet Sidecar £3 10
New 4½ Screw-cutting Lathe, £9 10 or exchange.
New 3½in. Treadle Lathe, £3 or exchange.

Booth's Motories,
Keighley Mills, Bedford Street North, Halifax.
Tel. 1062.

MOTOR BICYCLES FOR SALE.

1911 5h.p. Free Engine Indian, new June, 1911, very little ridden; £45.—Below.

1911 4h.p. Bat, new August 18th, in splendid condition, numerous spares; £35.—Below.

1911 5-6h.p. 2-speed Matchless and Coach-built Sidecar, 2 F.R.S. lamps, Cowey, spare tubes, cover, valves, etc., good as new; £65.—Below.

1911 4h.p (86×100) S.P.K., 3-speed and free engine, splendid sidecar machine, been very little used; cost £55, to quick buyer £33.—Below.

1909 F.E. Triumph, a real good machine, in fine condition; £31.—Below.

1911 New 3½h.p. 3-speed Premier, delivered here December 23rd, 1911; £52.—Below.

1911 3½h.p. Standard Premier, adjustable pulley, absolutely new; £40.—Pickles, Motor Agents, Keighley. Tel.: 259 Keighley.

1908 5h.p. Rex, just enamelled, plated, and re-bushed, perfect; £18.—86, Fargate, Sheffield.

LIVERPOOL Official Agents for Humber and Dot. Henry Whitlock and Co., 40, Hope St

MOTOR Cycle, 2½h.p., exchange for 3½h.p. engine; offers.—Letters, 36, Tonbridge St., Leeds.

1911 3½h.p. 2-speed Humber, new and unused; low cash offer accepted.—Collier, Westgate, Halifax

PRESTON.—Several second-hand modern motor cycles, all in good order, guaranteed, for sale or exchange.

PRESTON.—Your new mount fix up now with us and thus ensure freedom from motor worries during 1912.

PRESTON.—We are sole district agents for Zenith-Gradnas, Rex-Jap, Ivy Precision, etc., but can fix you up with almost any make, and take your present mount in exchange.—Note address, the Motor Cycle House, 82a, Fishergate (next door to Fishergate Post Office), Preston.

CLYNOS and Rudges, multi-speeds; deliver March; book now to secure.—Smith, Motor Agent, Horbury.

T. PARISH, Bradbury and Douglas specialist, Preston —Orders being taken; good second-hand machines, sidecars.

5h.p. Indian, 1910; £35; lately overhauled; getting sidecar outfit.—Edward Tinne, Mostyn, Aigburth, Liverpool.

INDIAN, 1911, free engine, 5h.p., machine and tyres new condition; £45/10.—Chadwick, Cedar St., Blackpool.

HALIFAX.—1911 3½h.p. 2-speed Rex de Luxe, only used about 500 miles; £39/10. — 1o, Westgate, Halifax.

3½h.p. Excelsior, £47 1911 model, everything as new, £32; also Whittle, ¾×7ft. 6in., 15/-.—1, Crown St., Chorley.

SCOTT, 1910, 4h.p., 2-speed, chain driven, in good going condition; £35. — Dr. Ross, Chapel St., Leigh, Lancs.

TRIUMPH, recently overhauled, 1911 handle-bars, new tyres, etc.; £26.—103, Waterloo Terrace, Ashton, Preston.

1910 5h.p. Indian, red, fine condition; £37; exchange 1911 2-speed Douglas.—5, Bank Buildings, Meltham

PHELON and Moore (June, 1911), condition unusually good, done 2,000; £50.—Smith, Bank House, Thorner, Leeds.

1908 Triumph, 2 speeds, new condition, Kempshall rear, take 2 up any hill; £31.—Midgley, Bethel Rd., Rotherham.

1911 1½ Moto-Reve, 2¼h.p., twin, new tyres and belt, in excellent condition; £39, or exchange.—17, Peel St., Accrington.

1910 Premier, 3½h.p. twin, Lucas lamp, horn, tools, footboards, fine condition; £28.—Henshaw, wheelwright, Stockport.

1907 3½h.p. Triumph, magneto, spring forks, studded tyres, excellent condition; £20, or offer—65, Hilden St., Bolton.

1909 3½h.p. Scott, late 1910 improvements, splendid condition, all accessories; £28/10.—Blackburn, Atlas Lane, Brighouse.

MATCHLESS Twin, 6h.p., m.o.v., new August, 1910 perfect; any trial; £42.—F. Carter, 27, Whitworth Rd., Grangetown, Yorks.

1911 B.S.A., new, delivered too late for customer; for immediate sale will accept £39; the chance of a lifetime.—Hey, Normanton.

SCOTT, 1911, brand new, not covered 200 miles; owner buying car, will accept £59; this is a genuine bargain.—Spence, North Parade, Ripon.

ARIEL, 3½h.p., 1911, and sidecar, free engine, variable gear, Whittle belt, as new; £45, or sell separate.—Butler, 261, Kirkstall Rd., Leeds.

1912 3½h.p. T.T. James, done 60 only, bargain, £44 show model; new sidecar, £4/10.—Anderson, James agent, Gorsehill, Stretford, Manchester.

1910 Standard Triumph, like new, free engine clutch; sell or exchange for twin, with sidecar, or any kind scrap metal.—82, Thornes Lane, Wakefield.

CORONET SIDE CARS

FREAK SIDECARS.

We are not making sidecars "Bath" or "Hansom Cab" pattern, weighing 1½ cwts. Our sidecars average 53 lbs., are stronger than the clumsy freaks mentioned above, and 3½ h.p. machines can take them comfortably. We know what is required.



MODEL C.—£7 2s. 6d.



MODEL A.—£5 5s.



MODEL E.—£7.



MODEL D.—£7 12s. 6d.

Instructive Catalogue post free, giving illustrations and full particulars of all models of Coronet Sidecars. Every model certain to satisfy and save money for buyers. Full of improvements. Quick detachable joints. Latest car pattern mudguards. Wicker, cane, or coach-built bodies. Child's reversible seat. Excellent upholstery.

NOTE front arm which grips main tube of sidecar, which is the only correct mechanical method—nothing lopsided about this attachment.

Delivery from stock to suit TRIUMPHS, N.S.U.'s, REXES, P. & M.'s, BRADBURYS, etc.
Discounts to Agents.



TEE BEE LOW SEAT-PILLAR, 5/- each.

GREAT CLEARANCE LINE.

New Dunlops, 28 × 2 and 2¼, wired edges .. 10/6
Dunlops, 28 × 2, beaded, heavy treads 14/9
24 × 2 and 2¼ Beaded Clipper Covers, new .. 8/6
Best Quality Butt-ended Tubes 7/9
150 New Tubes 26 × 2¼..... 5/11
Rubber-studded Covers, best make 25/-

ENGINES:

¼ h.p. Twin N.S.U., with Bosch gear-driven magneto, brand new from makers £11 10
¼ h.p. Twin N.S.U., with magneto £9 0
1¾ h.p. CLEMENT GARRARD pattern .. 27/6
3 h.p. FAFNIR, silencer, etc. £3 10
Water-cooled FAFNIR with broken crank case £1 10
9 h.p. DARRACQ, water-cooled £9 10
10 h.p. CLEMENT, two cylinder..... £12 10
3½ h.p. REX, M.O.V. £3 10

3½ h.p. AUTOMOTO £2 0 | 2 CYCLONE, m.o.v. £1 15
1¾ h.p. MINERVA £1 8 | 2¾ h.p. BROWN .. £3 5
3 h.p. QUADRANT £3 0 | 2¾ h.p. MINERVA £3 5

Exchanges entertained.

MAGNETOS. MAGNETOS. MAGNETOS.

We have a large stock of the best makes from 59/6. Your old coil and acc. taken in exchange.

NEW CARBURETTERS FOR OLD.

22/- and your carb. secures a new B. and B. with h.b. control.
20/- and your carburetter secures a new Amac with variable jet and h.b. control.
Delivery per return.

BOOTH'S MOTORIES,
KEIGHLEY MILLS, BEDFORD ST. NORTH
(off Pellon Lane), **HALIFAX.** Tel.: 1062.

MAUDES BARGAINS

THE PORTLAND SIDECAR



£6 6s. model less apron. £6 6s. model with apron.



£7 7s. model. £8 8s. model.

26 x 2½ Michelin tyres. Double Cee Springs. Wide mudguard. Three-point suspension. Dropped bearer bar if desired. Double stove enamelled.

Guaranteed twelve months. Need we say more ? ? ?

Special New Year Clearance of New, Shop-soiled, and Second-hand Goods. All reduced. Subject unsold. Approval. S.S. denotes shop-soiled only. S.H. denotes second-hand.

GREAT BARGAINS.

PALMER Cord Cover, 650 x 65 mm., fit 26 x 2½in. rim, studded; list price, 52 9; our price ..... 39/6 S.S.
DUNLOP, 26 x 2½in., studded, beaded.. 30/- S.S.
CONTINENTAL Model de Course Cover, 26 x 2in. ..... 20/- S.S.
TURCO, 26 x 2½in. extra heavy Studded Cover. ..... 17/6 New.
ROM Rubber and Steel Studded, 26 x 2 25/- S.S.
G. & J. 28 x 2½in. heavy Studded .... 32/6 New.
CONTINENTAL 26 x 2½in., Fox retread, studded ..... 15/- S.H.
TURCO 26 x 2in. heavy Studded ..... 17/6 New.
MICHELIN 26 x 2½in. Beaded Cover .. 21/- New.
CLINCHER 26 x 2½ Ribbed tread, heavy, beaded ..... 15/- S.S.
AVON 24 x 2in. 7-line, special bargain, beaded ..... 8/6 New.
ROM 28 x 2in. combination, steel and rubber ..... 20/- New

Accumulators, Fuller, 20 amp., 4 volt; list price 17/6; clear at ..... 8/- New.
Bosch Magneto, DA2, single-cylinder, £4 14s. model, new, but slightly soiled, perfect spark 60/-
Long Bars, black celluloid covered .... 6/6 New.
Long Bars, plated ..... 5/- New.
Triumph Pattern Horns ..... 3/9 New.
Three-twist Horns, large size ..... 4/- New.
C.A.V. Coils, guaranteed 12 months .... 11/9 New.
Trinote Horns, 3 separate notes ..... 8/- New.
Binote Horns, 2 separate notes ..... 6/- New.
Tubular Carriers, best quality ..... 4/6 New.
Footrests, plated end pieces .... pair 3/6

LAMPS.

P.R.S. Lamp, less front, Mangin lens .. 12/6 S.H.
POWELL & HANMER, separate generator, 27/6 line ..... 10/- S.H.
PORTLAND DE LUXE Lamp only, 30/- line ..... 14/6 S.S.
P.R.S., side fixing, Mangin lens ..... 15/- S.H.
P.R.S. 500ft. beam model, want's front 17/- S.H.
PORTLAND Lamp alone, less glasses... 6/9 S.S.
Separate Generator type Lamps ..... 6/9 S.S.
RUSHMORE pattern Lamps, divided glasses ..... 12/6 S.S
P. & H. self-contained ..... 17/6 S.S.
P.R.S., Mangin lens, as new ..... 17/6 S.H.
Many other goods too numerous to mention. Let us have your requirements.

CASH OR EXCHANGE

MAUDES' MOTOR MART

136 GT. PORTLAND ST. LONDON W.

MOTOR BICYCLES FOR SALE.

1909 3½h.p. Brown, spring forks, Brown-Barlow carburetter, best fittings, perfect condition; £18, or nearest; trial, appointment.—Milner, Westhourne Rd., Selby.

1908 3½h.p. N.S.U., magneto, new belt, and in good condition, £20; also T.T. 1911 Bradbury, lamp, horn, tools, etc., £33.—Dobson, Motors, Bury. Nat. Tel.: 294

BARGAIN.—1908 5h.p. V.S., Bosch, Truffault forks, Whittle belt, B. and B., in splendid order, excepting front cylinder broken; £16/10, or near offer.—15 Glover St., Preston.

1911 Premier, £34; 1911 Bradbury, £35; 1910 Triumph, £35; 1910 P. and M., £38; 1912 Triumphs, P. and M.'s, Bradburys, Ivy motor cycles.—T. Reed, Nettlesworth.

SEE, Write, or Wire, Geo. Merrick; he's the man for Bradburys; in stock, Rudge, B.S.A., A.J.S., N.S.U., and runabouts.—Merrick's Stores, Lieterbills, Bradford. Tel.: 2439.

TRIUMPH, free engine, new August, run 700 miles; owner bought car; with lamp, horn, etc.; £47; mackintosh suit, 20/-, new.—Graydon, 19, Kensington Rd., St. Annes-on-Sea.

THREE Motor Cycles, cheap, good running order; must be sold to make room for new stock; also P. and M., 3½h.p. 1911, with sidecar; owner buying car.—350, Waterloo Huddersfield.

1911 2¾h.p. Enfield, just overhauled by makers, new tyres, all tools, accessories, host of spares, tyres, tubes, chains, valves, etc.; £45, deposit.—No. 9,210, *The Motor Cycle* Offices, Coventry.

1911 Bargains.—Bradbury, shop-soiled, £39; 2¾h.p. 2-speed F.N., in splendid order, £32; 3½h.p. Premier, run 150 miles, £33; 14-guinea Millford castor cane sidecar, hardly used, £11/5.—The Brighouse Motor Agency, Bailiffe Bridge, Brighouse.

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

THE North Wales Motor Exchange, Rhosddu, Wrexham. Tel.: 283.

EVERY Machine a genuine bargain; we invite inspection.

1912 Free Engine Rudge, unerated; first cheque £55.

1911 3½h.p. James, C.A.P. carburetter, Jones speedometer, Lucas headlight; £40.

1910 Royal Enfield, only done 500 miles; £25.

N.S.U., 3½h.p., 1910 machine, brand new Kempshall on back, new Shamrock-Gloria belt, fitted with N.S.U. 2-speed gear, fine sidecar machine, in beautiful condition; £35.

1911 Bradbury, absolutely like new; £35.

1909 Triumph, fine condition; £30.

3½h.p. Quadrant, Bosch magneto, spring forks, very fast; £17.

1908 5h.p. Twin Rex, grand order, footboards; £25.

EARLY Delivery of Rudge, A.J.S., James, Humbers, Douglas, guaranteed: write at once, and let us quote you for your present mount.

PHELON and Moore, new 1911 model, just arrived from makers; best offer.—Moss, Wem.

5h.p. Twin Peugeot, 2-speed; any trial arranged; £15 cash, or exchange.—Gittins, Lawn, Oswestry.

F.N., 1909½, 5-6h.p., 4-cyl., magneto, perfect order; cash 20 guineas.—E. Smith, Rutland Sq., Bakewell.

TRIUMPH, 1911, September, clutch model, very little used, perfect condition.—Fitzsimmons, Canal St., Tipton.

INDIAN, 1911, blue, 2-speed, standard, perfect condition; what offers?—Particulars, Barrington, Junction Rd., Leek.

1912 Bradbury, new, in crate; offers wanted; owner ordered abroad. — Box 9,220, *The Motor Cycle* Offices, Coventry.

1912 Free Engine Rudge, new; offers wanted; take Triumph part.—No. 9,219, *The Motor Cycle* Offices, Coventry.

3h.p. Quadrant, B. and B., adjustable pulley, stand, carrier, lamp, perfect order; £10.—96, Overend St., West Bromwich.

3½h.p. F.E., magneto, also 3½h.p. accumulator, both perfect; must sell; going abroad; offers. — 34, Paradise St., Northwich.

NORTON, 3½h.p., touring, 1911 engine, winner numerous hill-climbs; full particulars; £30, offers.—Macdonald, Crich, Matlock.

TWIN-CYL. Rex, magneto, very fast, has not been used for some time; £13/10, great bargain.—Williams, motor agent, Bala.

MAUDES BARGAINS

ZENITH, 6 h.p., brand new, 1912 model, actually in stock £70 7
RUDGE, 3½ h.p., new 1912 clutch model, in stock £85 0
RUDGE, 3½ h.p., tourist, 1912 model, new, in stock £48 15
REX, 6 h.p., 1911, 2-speed, de luxe models, new £48 15
RUDGE, 3½ h.p., 1911, tourist, like new, bargain £37 10
TRIUMPH, 3½ h.p., practically new, 1911 clutch model £42 10
F.N., 4½ h.p., four-cylinder, like new £30
REX 5 h.p. de Luxe, new, 1911 models £60
BRADBURY, 3½ h.p., vertical engine, spr. forks £18
PREMIER, 3½ h.p., 1910, twin, very fast .. £32
MINERVA, 4½ h.p., twin, spr. forks, good tyres £22
REX, 5 h.p., 1910, model de Luxe, two speeds £42
SCOTT, two speeds, magneto, Palmer tyres .. £28
REX, 1910, 5 h.p., M.O.V., gold medal winner £35
REX, 1911, 7 h.p., two speeds, excellent order £51
REX, 5 h.p., magneto, very fast £24
TRIUMPH, 1909, 3½ h.p., standard model £32
ARIEL, 1910, 3½ h.p., footboards fitted, F.E. £30
N.S.U., 1908, 5½ h.p., two speeds, perfect £25
TRIUMPH, 1908, 3½ h.p., XL'All saddle £34
REX, 1907, 5 h.p., free engine, spring forks .. £16
REX, 5 h.p., 1910½, two-speed, M.O.V..... .. £42
PEUGEOT, 7-9 h.p. Twin, magneto, pan seat £26
ARIEL, 2¾ h.p., lightweight model £10
MATCHLESS-J.A.P. 8 h.p., side valves £37
ANGLIAN, 2¼ h.p., good running order £6
KERRY ABINGDON, 1910, 3½ h.p., clutch .. £32
REX, 1911, 7 h.p., tourist model, very fast.. £37
HUMBER, 1911, 3½ h.p., two speeds..... £37
REX DE LUXE, 3½ h.p., two speeds, magneto £24
REX DE LUXE, 3½ h.p., 1911, as new £44
RUDGE, 1912, clutch models in stock £55
RUDGE, 1912, standard, in stock £49
TRIUMPH, 1911, clutch model, as new £44
T.A.C., 1910, 7 h.p. four-cylinder, three speeds £48
N.S.U., 3½ h.p., magneto, cream finish £22
TRIUMPH, 1911, clutch, Montgomery sidecar £50
V.S., 5 h.p., 1908, magneto, Truffaults..... £32
REX Sidette, 5 h.p., 1911 model, as new £45
N.S.U., 3½ h.p., 1910 model, like new £28
ANTOINE, 5 h.p., footboards, just overhauled £20
HUMBER, 3½ h.p., 1909, two-speed £32
TRIUMPH, 3½ h.p., 1909, footboards..... £34
N.S.U., 3½ h.p., magneto, spring forks £22
CALTHORPE, 3½ h.p., 1911 model, as new .. £38
ZENITH, 4 h.p. 1911 model..... £42
N.S.U., 3½ h.p., very low, magneto..... £17
V.S., 7/9 h.p., two speeds, fine sidecar mount £38
SINGER, 3½ h.p., 1911, only done 100, F.E... £47
TRUMP-JAP, gray finish, 1911 model £32

50/- deposit secures—

LLOYDS, 2 h.p..... £10 **BARTER**, 2½ h.p... £8
MINERVA, 2 h.p. .. £8 **L.C.**, 3 h.p..... £10
CUNARD, 3 h.p. .. £10 **RIP**, 2¾ h.p. £8
QUADRANT, 1¾ h.p. £8 **ANTOINE**, 2½ h.p. £7

Balance 5/- weekly.

CARS AND TRICARS.

REX Litettes, 1911 models, as new £80
BROWN, 3½ h.p., two speeds, air-cooled £16
STAR Car, 9 h.p., three speeds, engine under bonnet £28
REXETTE, 6 h.p., latest model £22
REX Triette, 5 h.p., free engine £22
BEDELIA Car, 1911 model, two speeds, magneto, only done about 300 miles £45
PEUGEOT, 9-11 h.p., 2-cylinder, 3 speeds and reverse, dual ignition £25
PHŒNIX Quadcar, 8 h.p., 2-seater, hood, screen, magneto, etc., etc. £30

1911 REXES. 1911

We have a few brand new and fully guaranteed **REXES** to dispose of at advantageous prices. All models. Lowest prices. Send for Lists.

Now comes your opportunity to purchase for summer. No storage charges. Exchange your under-powered single for a powerful 2-speed twin. Special exchange allowances.

MAUDES MOTOR MART,
136 GREAT PORTLAND STREET,
LONDON W
Telephone 552, Mayfair
Telegrams "Abdicate" London

(LISTS POST FREE)

In answering these advertisements it is desirable to mention "The Motor Cycle."

The Halifax Motor Exchange

Largest Rex Dealers,

16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams: "Perfection."

WE have a few Brand New 1911 **TOURIST** and **DE LUXE REXES** on hand, and we are prepared to make liberal allowances for Second-hand Rexes in Exchange. Discount for Cash. Special quotations to the Trade.

GUARANTEED IN RUNNING ORDER.

1912 Twin **REX** Sidette, in stock	£75 0
1911 3½ h.p. 2-speed **BRADBURY**	£37 10
1911 3½ h.p. Tourist **REX**, done 750 miles	£32 10
1911 2½ h.p. Two-speed **REX** Junior	£39 10
1911 3½ h.p. **REX**, clutch model	£37 10
1911 5 h.p. Two-speed **REX DE LUXE**	£47 10
1910½ Twin **REX DE LUXE**, brand NEW	47 Gns.
1910 7 h.p. **REX DE LUXE**, two speeds	£48 0
1910 7 h.p. Twin **REX**, HOT STUFF	£37 10
1910 5 h.p. Twin **REX**, very fast	£29 10
1910 5 h.p. **REX DE LUXE**, fine sidecar machine	£42 10
1910 3½ h.p. **REX**, very fast, special machine	£27 10
Two speed, free engine Twin **REX DE LUXE**	£27 10
Twin **REX DE LUXE**, Roc clutch, wants tuning up	£16 10
1908 3½ h.p. Magneto **REX**, very fast	£24 10
1907 3½ h.p. Magneto **REX**, spring forks	£19 19
5½ h.p. Twin **REX DE LUXE**, Roc clutch, sp. forks	£24 10
Brand New 3½ h.p. **REX**, spring forks and pedals	£31 0
Brand New Twin Magneto **REX**	£37 15
2½ h.p. 1910 Two-speed Magneto **F.N.**	£27 10
Magneto-**TRIUMPH**, spring forks, specially low	£25 0
3½ h.p. **REX**, very good order	£8 10
3½ h.p. **REX**, very fine condition	£15 10
5½ h.p. Twin **REX**, extra good	£16 10
Four-cylinder **F.N.**, magneto, spring forks	£18 18
F.N. Magneto Lightweight	£16 10
3½ h.p. Magneto **FAFNIR**, M.O.V.	£19 0
3½ h.p. **WOLF**, Stevens engine, h.-b. control	£12 10
Twin Magneto **MOTO-REVE**	£17 10
3 h.p. **QUADRANT**, spring forks, h.-b. control	£12 10
3 h.p. **HUMBER**, chain drive	£9 10
MOTOSACOCHE, Druid forks	£14 10
WOLF, Lightweight	£10 10

Easy Payments at Special Rates.

£4 DOWN and 6/- weekly secures prompt despatch of any of these machines.

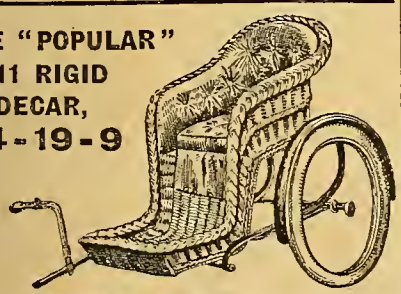
3 h.p. **QUADRANT**, V belt, h.-b. control, sp. forks	£12 10
4 h.p. **ANTOINE**, M.O.V., good order, reliable	£14 10
Lightweight **MOTOSACOCHE**, spray, runs well	£14 10
3 h.p. **QUADRANT**	£10 10
2¾ h.p. **KERRY**, spring forks	£10 10
Twin Magneto **MOTO-REVE**	£17 10
3½ h.p. **WOLF**, spray, smart, h.-b. control	£12 10
5½ h.p. Twin **REX**, fine machine	£16 10

CARS.

15 h.p. 4-cyl. **REX REMO**, Bosch magneto, grand touring car, many accessories, spares	£160 0
16-20 h.p. 4-cylinder **WOLSELEY**, 2-seater	£49 10
5½ h.p. single-cyl. **BABY PEUGEOT**, 2-seater	OFFERS

1912 BRADBURY / REX — LIBERAL EXCHANGES.

THE "POPULAR" 1911 RIGID SIDECAR, £4-19-9



Backed by 10 years' experience. Every car guaranteed 12 months.

"Popular," Clipper or Continental tyre	£4 19 9
"Superbe" type, with best tyre, apron, etc.	£6 6 0
Ditto, with reversible child's seat	£7 0 0
Ditto, with best coach-built body	£7 12 6

Improved Quick-detachable Joints are fitted to all models. Prompt delivery to suit Rexes, Triumphs N.S.U.'s, Indians, and any other make.

Discount to Trade. Exchanges entertained.

MOTOR BICYCLES FOR SALE.

RUDGE, 1912 models, early delivery guaranteed; catalogue free.—Talbot Garage, Ltd., Stockport, sole agents for Stockport and district.

1911 Bradbury, as new, all spares, butt tubes, and spare, two new Lycos, Lucas Projector, all perfect; £38.—43, Edleston Rd., Crewe.

MATCHLESS, 1912 models, early delivery guaranteed; catalogue free.—Talbot Garage, Ltd., Stockport, sole agents for Cheshire and High Peak.

1911 2-stroke Levis Lightweight, Amac, hardly ridden, condition throughout like new, complete with lamp, horn, cyclometer, etc.; £28.—Gordon, Baxter Rd., Sale.

1911 B.S.A., in perfect condition, tyres as new, with or without Albion free engine; £40, or near offer; property of an officer.—Apply, Fox, Whittington Barracks Golf Club, Staffs.

RUDGE T.T., July, 1911, good competition machine, capable 60 miles per hour, and has not been faked, spares, £38; 1912 variable geared Rudges, at £60, and guaranteed delivery in February; standard models immediate delivery.—Wedge, Willenhall.

SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

FOR Singers, James, and Ariels, write, Cordock Cycle and Motor Co., Scunthorpe, Lincs.

3½ h.p. Tourist Rex, new June, 1911, splendid condition; £30.—51, Frederick Rd., Stechford.

2 h.p. Minerva, Eadie, £4; 3½ h.p. Rex, magneto, Barlow, control, £10; exchange Triumph.—Judge, Holbeach.

FOR Disposal, either 1910 F.E. Triumph, or 1909 2-speed F.E. Vindec, 5-6 h.p.—Claverholme, Stoke Park, Coventry.

1912 Clutch and Standard Triumph, also New Hudson, 3-speed, in stock.—Mason, Triumph agent, Wellingborough.

3 h.p. Fafnir, h.b.c., good tyres, new belt, just overhauled, spares; £10; seen by appointment.—R. R. Evans, Heath Terrace, Leamington.

1911 Humber Lightweight, adjustable ignition, complete tool kit, 2 new belts and spare inner tube.—8,624, *The Motor Cycle* Offices, Coventry.

RUDGE, late 1911, F.E., not done 500 miles, condition and tyres as new; buying car; £45, offers.—C. Wakeman, 16, Broad St., Birmingham.

P. and M., new April, 1911, perfect condition, 2½ tyres, chain guard, geared for sidecar, recently overhauled by makers, including spares; £50.—Morley, Station Rd., Wylde Green.

1911 Scott, brand new, never been used, for immediate delivery, £60; splendid opportunity; also S.H. 1910 Scott, for £35; guaranteed.—Colmore Depot, 51, Colmore Row, Birmingham.

SINGER, 3½ h.p., 1911-12, with or without N.S.U. 2-speed gear, condition equal to new; price with spares and gear, £48; without gear £43.—No. 9,041, *The Motor Cycle* Offices, Coventry.

8 h.p. Bat-Jap and Sidecar, Phelon and Moore 2-speed, large tyres all round, £36; 4h.p. twin Premier, little used, like new, £32; 1911 T.T. Triumph, splendid condition, £40.—Ling, Rempstone, Loughborough.

REX, 3h.p., magneto, all latest improvements, footboards, Continental tyres, Druid forks, spring seat-pillar, brand new, only been tested, drip feed lubricator; sacrifice £31/10.—9,225, *The Motor Cycle* Offices, Coventry.

BRADBURY, 1910, very little used, in perfect condition throughout; will accept £32 for immediate cash sale; we are now booking orders for early deliveries of all models; price lists and full particulars on application free.—Hayward and Ball, Bradbury agents, Stratford-on-Avon.

SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon and Bedford.

1910 F.E. Triumph, good condition; £35/10.—Parker and Son.

1911 F.E. Triumph, new; £48.—Parker and Son.

1911 F.E. Triumph, very little used, lamp, horn, mirror, etc.; £45.—Parker and Son.

1911 T.T. Roadster, only ridden 1,500 miles, Dunlop belt; £42.—Parker and Son, St. Ives, Hunts.

BRADBURYS.—Early delivery all models; new 1911 standard, offers.—G. Langley, Motor Depot, Bedford.

£6, great bargain.—2½ h.p. Kerry, h.b.c., Brown and Barlow, perfect running order.—Aspland, Thetford, Norfolk.

LAMBERT, Thetford, for early deliveries of 1912 Triumphs, Bradburys, Matchless, Humbers, Rudges, B.S.A., etc.

1912 Bradburys; guaranteed delivery; free engines, standards January, 2-speed March; cash, easy payments, or exchange.—Wilmott Bros., Norwich.

REY, 5, HEATH ST., HAMPSTEAD

Close to Hampstead Tube Station.

Telegrams: "Rey, Hampstead." Tel. 2678 P.O., Hampstead

EXTENDED PAYMENTS

Taken on any Machine or Runabout.

TERMS: QUARTER DOWN, BALANCE IN TWELVE EQUAL MONTHLY PAYMENTS.

BRADBURY, 1912, standard	£48 0
BRADBURY, 1912, T.T.	£48 0
BRADBURY, 1912, free engine	£54 10
BRADBURY, 1912, two-speed gear, Jan.	£55 0
RUDGE, 1912 standard model	£48 15
RUDGE, 1912 T.T.	£48 15
RUDGE, 1912 free engine	£55 0
ZENITH, 1912, 3½ h.p.	53 Gns.
ZENITH, 1912, 6 h.p.	67 Gns.
ZENITH, 1912, 8 h.p., 2 weeks	69 Gns.
BAT, 1912, 3½ h.p., two-speed	£59 0
BAT, 1912, 6 h.p., two-speed, Jan.	£70 12
BAT, 1912, 8 h.p., two-speed, Jan.	£72 12
F.N., 1912, 2¾ h.p., two-speed gear	45 Gns.
F.N., 1912, 5-6 h.p.	80 Gns.
SINGER, 3½ h.p., 1912, free engine	£55 0
LINCOLN ELK, 1912, 2¾ h.p.	£28 10
LINCOLN ELK, 1912, 3 h.p.	£30 10
LINCOLN ELK, 1912, 3½ h.p.	£34 0
DOUGLAS, 1912, Model H	£47 0
TRIUMPH, 1912, T.T. Roadster	£50 0
BEDELIA Cars	59 Gns.
G. & N. Runabouts, 8 h.p. (in 6 weeks)	87 Gns.
A.C., speed sociable type, (in Feb.)	£87 10

Any other makes on application.

ALL THE ABOVE MACHINES IN STOCK. No waiting.

1911 New Machines to clear at Bargain Prices.

B.S.A., 3½ h.p., standard £50 model	£41 0
HOBART, 2¾ h.p., lightweight, £38 model	£29 0
TRIUMPH T.T. Roadster, £50 model	£47 0

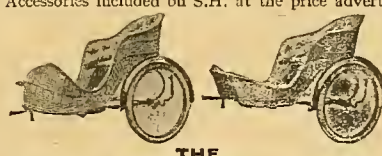


Sole London Agent for the famous LINCOLN ELK. Finest value on the market for quality and reliability. All models on view and for immediate delivery.

Second-hand Machines at Bargain Prices to clear.

BAT, 8 h.p., good condition, all accessories	£28 0
BAT, 8 h.p., 1910, with Millford sidecar	£40 0
LINCOLN ELK, 3½ h.p., 1911, clutch, and sidecar	£30 0
HOBART, 2¾ h.p., soiled only	£29 0
MOTO-REVE, 1911 model, twin	£19 0
PRECISION, 2½ h.p., 1911, almost new	£25 0
B.S.A., 2¾ h.p., new cylinder wanted	£4 10
F.N., 4½ h.p., good order	£18 0
F.N., 2¾ h.p., two-speed, good condition, 1911	£27 0
F.N., four-cylinder, 1911, almost new	£29 0
F.N., 5-6 h.p., four-cylinder, 1910	£22 0
REX, 6 h.p., 1911, F.E.	£37 0
REX, 4 h.p., T.T., twin, 1911 model, splendid order	£26 0
DOUGLAS, 2¾ h.p., 1910, fine order, all accessories	£25 0
DOUGLAS, 2¾ h.p., 1910, good order	£23 0
DOUGLAS, 1911, Model D, all accessories	£26 0
DOUGLAS, 1911, two-speed	£33 0
ZENITH, 1910, good order	£32 0
ZENITH, 1911 3½ h.p.	£39 0
ZENITH, 1911, 3½ h.p.	£40 0
ZENITH, 1911, 3½ h.p.	£42 0
TRIUMPH, 1910, F.E.	£39 0
TRIUMPH, 1910, F.E.	£38 0
BAT, 3½ h.p., P. and M., two-speed gear	£33 0

All Accessories included on S.H. at the price advertised.



THE £4-10 REY Sidecar £3-10

With Hutchinson or Michelin 26 x 2¼ Tyre and Tube 30/- extra.

The famous "REY" EXHAUST WHISTLE now reduced to 12/6 each.

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY

REY, 5, HEATH STREET, HAMPSTEAD

Beautifully Safe on greasy roads.



MODEL DE LUXE. £5 5 0.



MODEL C. with Cane Body. £6 0 0.



MODEL E. with Reversible and Detachable Child's Seat. £6 10 0



MODEL D. with Coach Built Body. £7 0 0.

Absolutely the finest value on the market.

LESS POWER.

It is admitted by experts that, owing to the unique design, far less power is required to propel Farrar's Sidecars than any other style on the market.

NOTE OUR front arm which grips the Sidecar CENTRE, nothing lopsided about this attachment.
OUR quick detachable joints are a treat.
OUR cranked back axles are extensively copied.
OUR design is the safest on the market.
OUR 12 months' guarantee is honestly carried out.

ALL COMPLETE with MUDGUARD AND TYRES.
Discount to the trade.
Delivery from stock to suit TRIUMPHS, REXES, P. & M.'s, N.S.U.'s, etc.
LIGHT, STRONG, AND SPLENDID VALUE.

SPRUNG LIKE A CAR.
Round or Car pattern mudguards at customers' option.

1912 MICHELIN TYRES.

26 x 2¼in. Covers	18/6
26 x 2¼in. Tubes	9/9

POST FREE.

TYRES. TYRES. TYRES.	
Heavy Rubber-studded Covers, 26 x 2¼	18/6
26 x 2½ Hutchinson Heavy T.T. Covers	25/-
26 x 2 and 26 x 2¼ Wired-edge Covers	12/6
Continental Rubber Non-skids, 26 x 2¼ or 2½	30/-
Hutchinson, ribbed tread, 26 x 2¼in.	18/6
Continental, beaded, 26 x 2	16/6
Tubes, all sizes, guaranteed	9/6
New Butted Tube, 26 x 2¼	8/6
New Butted Tube, 26 x 2½	8/3
Special Heavy 26 x 2¼ Tubes, guaranteed	7/6

MISCELLANEOUS BARGAINS.

Lycett's Carrier Toolbags, new	7/6
1 h.p. Electric Motor, 230 volts	£7 0
5½ h.p. Water-cooled Engine and Clutch	£7 0
New 4 h.p. N.S.U. Engine, perfect	£7 0
5½ h.p. Aster engine, water-cooled	£7 0
New Bosch Magneto, DA2, for single	75/-
One ditto, second-hand	67/6
Second-hand Bosch, wants repairs	£1 0
1¾ h.p. Clement-Garrard engine	30/-
Lomax non-skid band, 700 x 85	7/6
Trailer, 26in. wheels	25/-
Goodlads speedometer, 5-40 m.p.h.	15/-
Light car chassis and tyres	£4 0
New Toolbags, 9 x 6 x 3½in.	4/6
Sidecar Aprons, green or red, with studs	7/6
Druid Spring Forks, new	£2 5
New Lycett's Tubular Carriers	4/11
New Lamp and Generator, plated	12/6
1912 Brown and Barlow carburetters	29/-
Longuemare Carburetters	5/-
Brown and Barlow Carburetters	7/6

FARRAR'S MOTOR EXCHANGE,
19, 21, 23, 25, Hopwood Lane, HALIFAX (Two minutes from G.P.O.)
Telephone 919.

MOTOR BICYCLES FOR SALE.

1912 Torpedo Precision, 2¼h.p.; £37; best lightweight on the market; £10 deposit, 50/- monthly.—Willmott Bros., Norwich.

3½h.p. Quadrant, 1911 frame and ball bearing, Bosch magneto, spring forks, low built, footboards, in very good condition; £21.—Banks, 70, Mawson Rd., Cambridge.

B.S.A.! B.S.A.! B.S.A.! — Early deliveries of all models of these celebrated machines; second-hand machines part payment.—A. F. Garnham and Co., sole agents, Ipswich.

LATE 1910 5h.p. Indian, in exceptionally good order, been carefully used, plate and enamel like new; £33; want late 3½h.p. magneto machine.—Wallis, 29, Hilla Rd., Cambridge.

3½h.p. Zenith, open spring frame, Fafnir engine, free engine, 2-speed gear, accumulator, spares, good tyres; £14, or nearest cash offer.—Lambert, Fincham Common, Downham Market.

SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

BOOK Your Order early for Clyno. At present I can guarantee delivery this month.—Below.

IMMEDIATE Delivery 1912 Zenith, Triumph, Rudge, B.S.A., Singer, Humber, New Hudson.—Clarke's Garage, Port Talbot.

ARIEL, 3½h.p., 1910, free engine, variable gear, splendid condition; £30.—Young, 19, Priory St., Dudley.

FOR Earliest Deliveries of Triumph, Humber, Enfields, Singer, Premier, apply at once, Griffiths, Cycle Emporium, Llanelly.

DOUGLAS, 1911, late, first-class condition; any trial; through sickness hardly used; best offer.—9,209, *The Motor Cycle* Offices, Coventry.

TRIUMPH, 3½h.p., September, 1910, good condition, horn, Garner whistle; any reasonable trial; £36; bought T.T. Triumph.—Kelly, Colliery agent, Dock St., Newport.

SLIGHTLY Soiled 2¾h.p. New Hudson, 3-speed, free engine, usual price 47 guineas, sacrifice 37 guineas; also 3½h.p. ditto, 2½in. tyres, usual price 57 guineas, sacrifice 47 guineas.—Ivor Roberts, Oxford St., Swansea.

6h.p. Twin, beautifully enamelled and plated, as new throughout, handle starting, clutch, 1911 Bosch, B.B., adjustable pulley, Cantilever spring seat, forks, engine pull anything; exchange lighter machine; sell, £32.—70, East Gate St., Cowbridge.

SECTION VII.

Gloucester, Oxford, Buckingham, Berks Wilts, and Hants, and Channel Islands.

1909¾ Triumph Motor Cycle, brand new covers; nearest offer to £30.—Stretton's Garage, Gloucester.

TRIUMPH, 1910, recently overhauled by makers; £75; unexpectedly promoted abroad.—23, Oldbury Court Rd., Bristol.

1910½ Douglas, perfect condition, not used during the winter; £28, or exchange good sidecar combination.—75, B. Square, Aldershot.

1911 Standard Triumph, new, Palmer cord tyres, excellent opportunity for a bargain; what offers?—Morris Motor Cycle Garage, Oxford.

1911 Humber 2h.p. Lightweight, new, Dunlop tyres, excellent machine; great bargain, £30.—The Morris Motor Cycle Garage, Oxford.

1912 Triumphs.—We can give very early delivery of all models; cash or easy payments.—Morris Motor Cycle Garage, Oxford.

1912 Enfield Lightweight, in stock for immediate delivery; cash or easy payments.—Morris Motor Cycle Garage, Oxford.

DOUGLAS, 1911, 2-speed, free engine, clutch, hand starting, footboards, complete with accessories; £40.—J. M. Coleman, 8, Parkend Rd., Gloucester.

BROWN, 3½h.p., Bosch magneto, new Palmer cord on back, just been overhauled, new rings fitted, £17/10.—Ledboro' View, Candleman Lane, Beaconsfield, Bucks.

TRIUMPH, 3h.p., most reliable machine, in splendid condition, lamp, Jones speedometer, etc.; £25; any trial.—Phayre, Yorkshire Regiment, Blackdown, Farnborough.

CLYNO, the sidecar machine; we can give early delivery of 1912 models for cash or easy payments; trial runs arranged at any time.—Morris Motor Cycle Garage, Oxford.

BRADBURY, new January, 1910, with 1911 cyl., piston, good tyres, new belt, lamp, horn, Garner whistle, patent leather mudguard; £27.—Lissaman, Acacia Lodge, Wokingham.

DOUGLAS, 1911 model E., footboards, free engine, handle starting, 2 speeds, only ridden 500 miles, condition perfect, splendid lamp and accessories; bargain, £40.—Boulton, Royston House, Westbury, Wilts.

STOCKTAKING

JANUARY 31st.

Previous to our annual "balance up" we will accept any reasonable offer.

CASH, CREDIT, OR EXCHANGE.

1912 MACHINES.

1912 3½ h.p. **New Hudson**, 3 speeds	67 Gns.
1912 2¾ h.p. **New Hudson**, 3 speeds	47 Gns.
1912 2¾ h.p. **A.J.S.**, 2 speeds, chain drive	44 Gns.

MOTO-REVES.

Handy in grease, free from vibration, splendid hill-climbers.

1908 Twin-cylinder, very good	£16 0
1910 2¾ h.p. Twin, very good	£22 0
1911 Single-cylinder, record machine	£22 0
1910 2¾ h.p. Twin, very fine order	£23 0
1910 2¾ h.p. Twin, with 1911 fittings	£24 0
1909 2¾ h.p. Twin, 50 x 70 mm.	£20 0

All have magneto, h.-b. control, Druid forks, toolbag, tools, and inflator.

SINGLE-CYLINDER REXES.

1910 3½ h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p. 1908 Featherweight Rex, Bosch mag.	£17 0

TWIN-CYLINDER REXES.

5-6 h.p. 1909 De Luxe, 2 speeds	£35 0
7 h.p. de Luxe, two speeds, M.O.V.	£48 0
5-6 h.p., 1908, two-speed, and sidecar	£32 0
5-6 h.p., de Luxe, 1908, two-speed model	£28 0
5-6 h.p., de Luxe, 1908, two speeds, special	£29 10
5-6 h.p., 1908, two-speed de Luxe, 1909 eng.	£32 0

N.S.U.'s. N.S.U.'s N.S.U.'s.

5½ h.p., two speeds, Bosch, B. & B. carb.	£25 0
5 h.p. Twin, Bosch magneto	£19 0
1910 6 h.p., M.O.V., two speeds	£33 0

OTHER MAKES. OTHER MAKES.

3¾ h.p. Twin **Premier**, very fine	£26 0
1911 3½ h.p. **Singer**, clutch model	£37 0
1911 Two speed **Brauoury**, fine	£37 0
1911 Lady's **Hobart**, Armstrong three speeds	£35 0
3½ h.p. **L.M.C.**, 1910 model	£25 0
3 h.p. **Singer**, Bosch, V belt drive, B. & B.	£16 0
3 h.p. **Quadrant**, Bosch, B. & B., spr. forks	£16 0
3½ h.p. **Quadrant**, h.-b. control, spring forks	£16 0
2¾ h.p. **Humber**, chain drive	£7 0
1¾ h.p. **Minerva**, V belt	£4 10
3½ h.p. **Minerva**, Bosch magneto, Amac	£22 0

SIDECAR COMBINATIONS.

5-6 h.p. Clutch Model **Rex** and new Sidecar	£29 0
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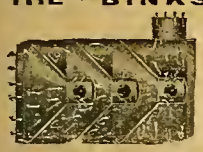
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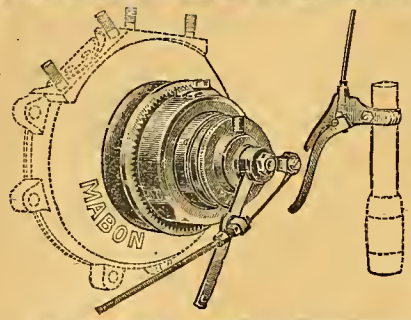
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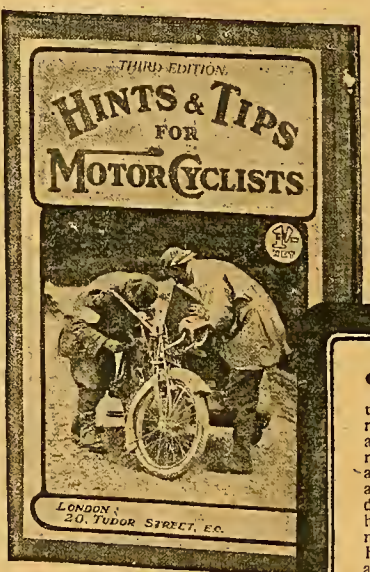
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THE MOTOR CYCLE

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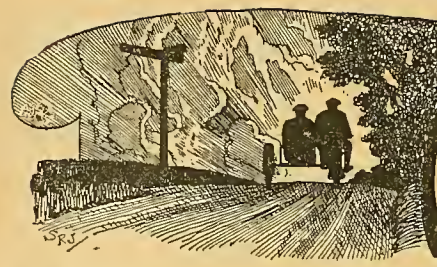
This Year's Tourist Trophy Race.

IT is high time the course for the Tourist Trophy Race should be settled. Though several applications have been made to the Isle of Man authorities for permission to hold the race, no reply which will lead one to suppose that consent will be given by the Tynwald Court has been received up to the present. Time passes quickly, and those who intend to enter should know when and where this event will be held. Unfortunately, the Isle of Man cannot be altogether blamed for its hesitancy. A few of those who went over last year allowed their spirits to get the better of their discretion, and, we regret to say, by no means a good impression was made. Wherever the race is held, we sincerely hope that participants, their helpers, and spectators will be merry and wise, and let their "hosts" see that they can be happy and enthusiastic without giving way to any objectionable degree of hilarity.

Most people are of the opinion that the Isle of Man is the only place where British motor cyclists could hold a road race, and think that the race must be held in the British Isles. It certainly should be so, but if the Isle of Man does not give its consent at once, or if consent be definitely withheld, there is nothing to prevent the race being held in France, where permission could be obtained without the sanction of Parliament. French enthusiasm is displayed in a manner unknown over here; in fact, owing to the *entente cordiale*, the British riders would receive a right hearty welcome. The Auto Cycle Club de France would receive the idea with enthusiasm, as it could, without doubt, get the Government's permission merely for the asking, and the holding of the race would serve to forge another link in the chain which binds the two countries together in a stronger bond of friendship than has ever existed before. Hand-in-hand, the A.C.U. and the A.C.C.F. could organise a race which would be held on roads safer and faster than any we have in these islands, on a course preferably near Dieppe, which is really closer to London than the Isle of Man.

The cost to competitors would be no greater, perhaps even less, than if the event were held in the Isle of Man, while the fact that by holding the race in France friendly international rivalry would be promoted is not to be lost sight of. Fighting as they would on their own ground, the Frenchmen would have a better chance to compete with the British machines, and a more sporting contest would be promoted. To revert to the course. Those parts of France adjacent to Great Britain cannot offer a course as sporting or quite so good for testing the machines as that in the Isle of Man, but rather one which is a series of long, straight stretches, perhaps not altogether flat, but with easy gradients. At the turning points, however, the corners are likely to be acute, and British competitors would find that at corner work the Frenchman is unrivalled, as members of the N.W. London M.C.C. who raced near Lyons last year will remember.

Those members of the Manufacturers' Union who have agreed to sign a bond not to compete in a T.T. race in the Isle of Man would be under no obligation not to race in France; in fact, the suggestion to hold the race in France was made to us first by a trade member. We must say we think the suggestion worthy of most serious consideration, and, in any case, the location of the course should be decided upon at once.



The Choice of a Variable Gear.

By B. H DAVIES.

THE man who does not own a variably geared machine in 1912 will not infrequently feel that he is behind the times and out of date, though he will get his own back when he tackles a fairly straightforward piece of country and roars up everything at full r.p.m. or encounters a fellow motor cyclist in trouble with some detail of his gear. But, contrariwise, many a motor cyclist in riding his first variably geared mount will find food for reflection, and occasionally wish that he had invested in a different type of gear. The purpose of this article is to suggest certain principles which govern the wise selection of a variable gear.

Suitable Gearing.

The main principle is very simple. The lower the power of the engine, the greater the number of gear ratios with which it should be provided. Two road illustrations of this principle may suffice. Imagine a man who used a sidecar in 1911 with a single geared 3½ h.p. cycle. Remembering that last season he not infrequently had to shed his passenger, and that once or twice his cycle refused to pull the empty sidecar up rather exceptional hills, he invests in a two-speeded 3½ h.p. machine for 1912. Before next August he will often and ardently have longed for a three-speed, a four-speed, or an infinitely variable gear. Granting that he is much better off than he was in 1911, there are times when the iron enters into his soul. Owing to the extra weight of his outfit and the heavier build of his engine, he finds his new combination less lively and flexible on top gear than the old single geared set; and he resents the long, slow, noisy grinds on bottom gear up prolonged gradients of 1 in 12 or so. An intermediate gear would often have been welcome.

The Three-speed Mediumweight.

Or, again, consider the mediumweight man. He may choose between two or three speeds for his 2½-2¾ h.p. machine. Supposing that both machines are equally frictionless and reliable, the three-speed is ideally desirable. It provides him with a high top ratio, on which he may touch high road speeds with his engine turning over quietly and slowly, while it possesses a lower emergency ratio than the two-speed, and (if the machines are of equal quality) can therefore make more certain of ascending phenomenal hills. The two-speed medium weight requires an exceptionally well-balanced engine if it is to be comfortable and vibrationless at high speeds; an exceptionally efficient engine if it is to be capable of climbing everything. This particular question is at present complicated by the fact that one or two of the two-speeders have reached a higher stage of evolution than some of the three-speeders. In the near future the three-speeders in this class ought to take a lead.

Chain Drive.

The second principle is that a chain drive is probably preferable for all passenger work. The belt is cheap to replace, and easy to "fettle"; but, as "Ixion" points out, it is at its very weakest in the hour of its keenest trials. Set it to tug a heavy load up a bad hill in severe weather, and it may behave in heart-breaking fashion. The belt still claims the superiority for solo work, but is undoubtedly inferior for passenger use. Then, too, the chain does not slip in bad weather.

Type of Brake.

These principles dismissed, we may turn to details of less importance. For instance, it is not safe to take the efficiency of the brakes for granted on variably geared machines. When the back wheel is moved, as on some variably geared machines, the problem of ensuring the power of the main brake is complicated, and the designer's success in tackling this vital detail needs verification. When the rear belt rim is a separate entity, spoked apart from the wheel, similar precautions are advisable. The brakes of many chain-driven mounts are notoriously unsatisfactory within limits. A wire-operated tyre rim brake is less powerful than a belt rim brake, and is bound to occasion more trouble. A band brake may be excellent in the hands of a rider who will take the trouble to keep its band true and adjusted and its wearing surfaces free from glaze and charring; the rider must consider whether he is ready and able to observe these precautions, which are not so simple in fact as they are in theory. The dummy belt rim, provided solely for braking purposes, is in my view infinitely preferable. Bands glaze till they lose grip, and buckle till they rub on their drums and cause friction.

Chain Adjustment.

Again, with chain drive those patterns are preferable which possess a separate adjustment for each chain; and as such types become common the old type with two chains sharing a common adjustment is bound to become obsolete. Very fair success can be obtained with the old type by building up the longer of two sister chains in two sections, one of which contains exactly the same number of links as the shorter chain, and swopping the two at intervals. Flimsy miniature drawbolts on the back spindle, though satisfactory on push-bicycles, are a nuisance on motor cycles. They bend and strip their threads.

The Choice of a Variable Gear.—

I used up three pairs in two months on a 1911 mount. The newer gears, almost without exception, avoid this defect.

Accessibility of Rear Wheel.

Further, convenience of access to the rear wheel must not be forgotten, and this applies to certain free engine machines as well. It is probable that the hard rider will have to remove his back wheel several times in a year, either by the roadside or in hotel yards, in order to fit a new tube or cover. With some of the variable geared machines this is a long and awkward job; with others it is little less easy than on a T.T. single road racer. Such machines deserve preference.

Still another point is the question of engine starting. Some gears necessitate jacking up the machine on the stand before the engine can be started with the pedals. The buyer has also the choice of hand starters and foot starters.

Finally, the real amateur duffer should plump for a machine with a really low emergency ratio, irrespective of whether he is buying a heavy roadster, a medium weight, or a sidecar outfit. It may seem ridiculous to insist on a bottom gear of 9 or 10 to 1, when the cracks accomplish sensational uphill flights on gears of 4 or 5 to 1. But the emergency gear has to cope with (1) a rider whose "tuning" abilities are zero; (2) possible ascents of freak hills like Barbrook, Farlow, or Amulree; (3) extremities of surface and weather. Before the season is over, the real duffer may taste the sensation of feeling anxious on a hill with his engine all out on a 9 or 10 gear. The conclusions described above may be tabulated as follows:

Gears and their Uses.

(a) Genuine 80 lb. lightweight.—As low a gear as possible.

(b) Medium weight for solo use.—Three-speed ideal; two-speed perhaps better evolved at present. Chain drive, or combined belt-cum-chain drive. (Complete belt drive spells a small engine pulley, and more likelihood of belt troubles.)

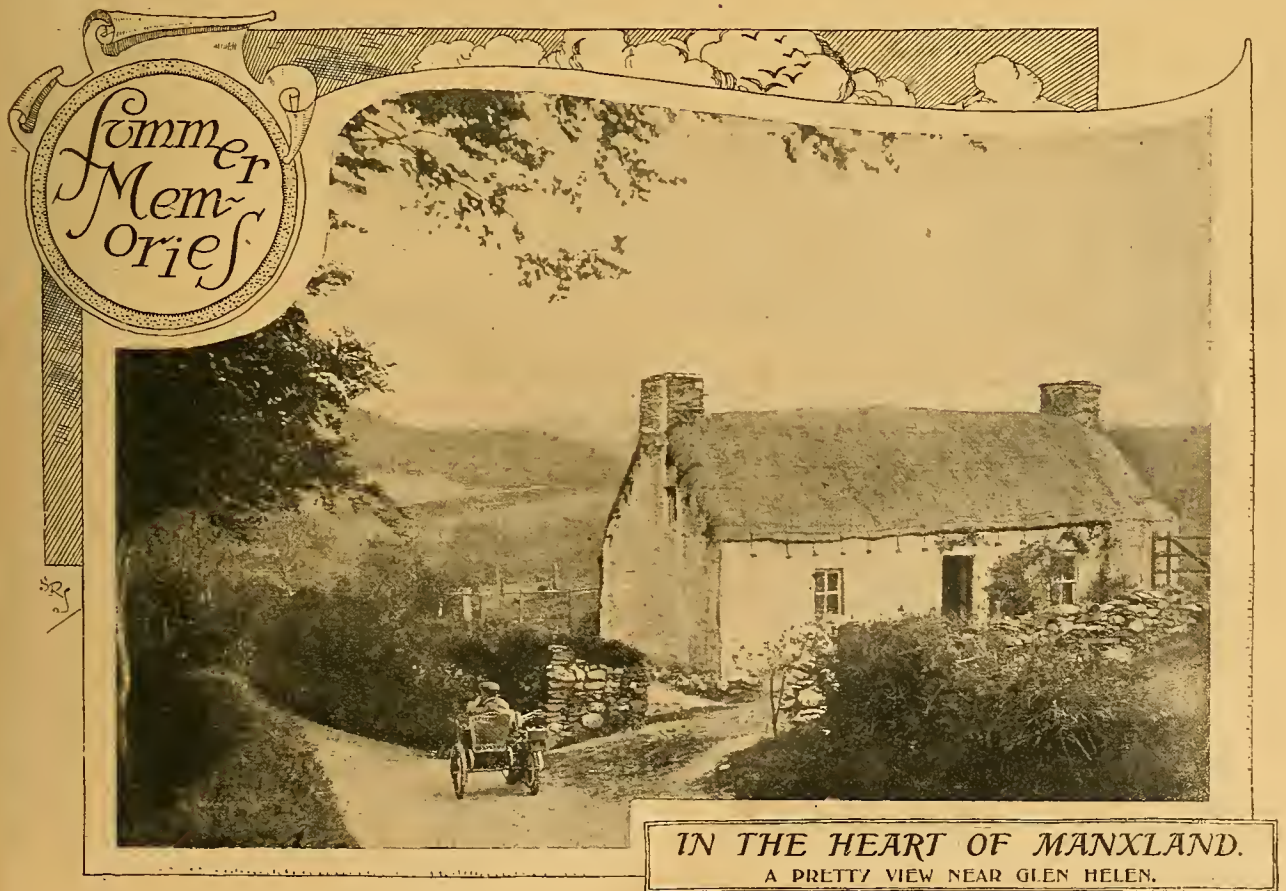
Medium weight for use with sidecar.—Not recommended.

(c) 3½ h.p. for solo use.—Two-speed with belt drive satisfactory.

3½ h.p. for sidecar work.—Three-speed, with chain drive, or belt-cum-chain drive, is ideal. In its absence, two-speed with chain drive is recommended.

(d) 5-8 h.p. solo use.—Single geared belt drive satisfactory. Two-speed with either belt or chain is luxurious.

5-8 h.p. for sidecar work.—Two-speed with chain drive is entirely satisfactory. Belt drive not advised. Three or more speeds the height of luxury.



IN THE HEART OF MANXLAND.
A PRETTY VIEW NEAR GLEN HELEN.

CLEAN COUNTIES.

FOLLOWING on recent correspondence recommending readers to renew their licences in counties absolutely free from police persecution, we have pleasure in reproducing from *The Autocar* the following list, and would like to draw readers' attention to an editorial footnote to a communication in the "Letters to the Editor" columns this week, wherein is explained the method of allotting the licence fees to the Road Board and the counties in which the fees are collected. The following counties had no police traps in 1911:

Bedfordshire, Cambridgeshire, Dorset, Gloucestershire, Herefordshire, Leicestershire, Middlesex (Middlesex *Metropolitan* had twenty-seven), Norfolk, Northants, Northumberland, Oxford, Rutland, Suffolk, and Wiltshire.

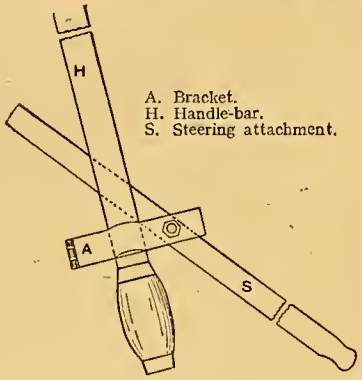
It should not be forgotten that licences paid into post offices within the area of county boroughs are usually pooled by the borough and county authorities.

The registered number (fee 5s.) can also be obtained from any county or borough, and the only licence which *must* be procured in the town or county of residence is the driving licence (fee 5s.)

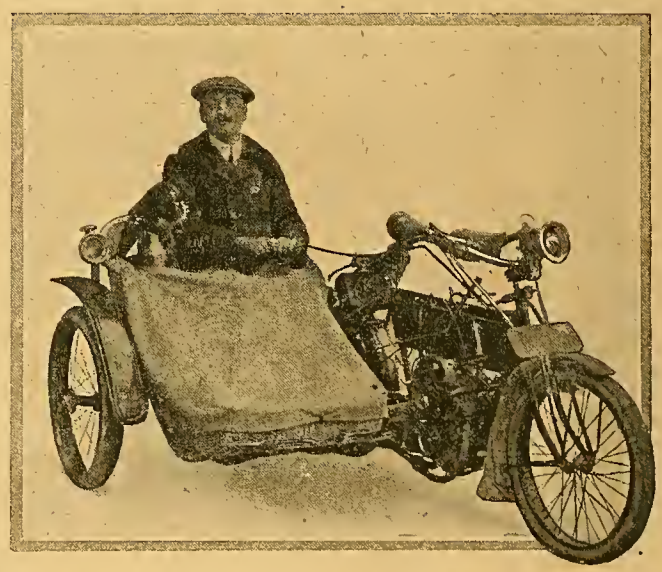
We should also like to make it clear that we should support the authorities in any prosecution for dangerous or reckless driving if sufficient separate evidence were forthcoming to prove it, our quarrel being only with the pernicious police trap, generally planned over tempting stretches of road where no danger is attached to speeds in excess of twenty miles an hour.

DRIVING FROM THE SIDECAR SEAT.

MR. OSCAR C. FRIED, of Rekawinkel, Austria, sends us some details of an attachment by means of which it is quite easy to drive from the sidecar seat, and, as he finds this more comfortable than riding in the saddle, he makes it his usual practice when he has no passenger. The attachment is very simple, and consists of a flat bar of iron, which is clamped to the steering column and to the handle-bar just in front of the handle grips. To this is attached the exhaust lifter, worked by a Bowden wire and lever. If the carburetter control be on the side to which the sidecar is fitted there is no need to move it. Mr. Fried has also fitted a long spring to the pedalling gear, with the object of keeping the pedals always in the same place for starting and braking purposes (his machine has a back pedalling brake). The attachment does not interfere with the ordinary use of the combination, as can be seen from the sketch, which shows the method of attachment to the handle-bar. The dog, we are informed, is entirely automatic in action, never failing to take his seat at the proper time.



A. Bracket.
H. Handle-bar.
S. Steering attachment.



Mr. Fried's Phänomen sidecar outfit.

On the last Thursday of February a new paper, dated March, will be issued by the publishers of *The Motor Cycle*. Its title, *The Arena*, when not supported by any opportunity for a perusal of its contents, cannot give an adequate idea of its scope. In this it will differ very materially from any existing publication, since it will specialise particularly on all matters likely to be of direct interest to past and present members of the great Public Schools and of the ancient Universities. These form, as a whole, a class which is possessed of immense loyalty and affection for the great institutions to which it is so much indebted, and consequently *The Arena* looks for support, not only of a merely casual interest in current events, but based upon a real desire to keep in mental touch with men and places which may be physically far removed. In addition to a staff composed entirely of Public School and University men, the new paper has enlisted the services of a number of expert contributors on matters of sport and outdoor life, while another of its many aspects will attract rather those who find pleasure in matters of tradition and history. The paper will be published monthly at the price of sixpence, and its illustrations —which will in the main be photographic—will be largely selected for their artistic merit, and will be reproduced as perfectly as possible on the highest quality of paper. If any of the readers of *The Motor Cycle*, many thousands of whom are themselves Public School or University men, would like to convey any suggestions to the Editor of *The Arena*, he can be found at 20, Tudor Street, London, E.C.



Cost of Running a Motor Cycle.

On the last day of the old year the *Sunday Chronicle* published some remarkable assertions on the subject of motor cycles; and as its contributor uses the same pen-name as myself, I should like emphatically to controvert most of his statements. Here are several quotations which show the general trend of his ideas:

1. "... *the man who can afford an initial outlay of £50, and an annual outlay at the rate of 10s. a week at least.*"
2. "... *a motor bicycle is a delightful toy.*"
3. "... *at least he should be in receipt of an income of £250 to £300 a year.*"
4. "... *I regard the pleasure (of motor cycling) as overrated.*"

Every practical motor cyclist will understand at a glance why an individual who has spent £26 a year on upkeep should regard motor cycling as an overrated hobby. There are a few people about who are constitutionally unable to acquire that very slight mechanical ability which enables a man to do his own running repairs. Such a man has to take every tiny derangement to a garage, and if he bought a very third-rate machine, his annual expenses might be £26. I have never spent anything like £26 on the upkeep of one machine during a single season.

In 1903 I owned a rank bad machine, I was working too hard to do my own repairs, and I covered upwards of 6,000 miles; yet my bills totted up to less than £10 for the season. Of late years, since I have become qualified to do my own repairs, the upkeep charges have dwindled to the vanishing point, and like most clubmen, I could guarantee to ride any first grade machine 10,000 miles for less than £26; and 10,000 miles means at least two seasons' work for an average rider who does not use his machine for business purposes.

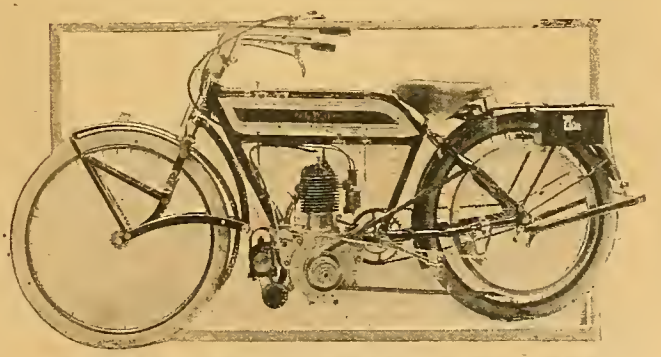
To call the motor bicycle a "toy" is a trifle ridiculous in days when thousands of business men prefer it to the train as a means of locomotion in the ordinary course of professional work. Only yesterday I was conversing with a knot of men who travel for a big colliery. Five of them have adopted the motor bicycle as an all-weather mount within the last two years. Each of these five claimed to be from £30 to £60 a year in pocket by the substitution. A large percentage of the manufacturers' orders come from men in middle life, who use motor cycles mainly for professional purposes, preferring them because of their convenience, comfort, economy, healthfulness, and reliability.

When we turn to the minimum income at which the ownership of a motor bicycle is advisable, we are on more controversial ground. The writer in question warns "working lads with 25s. or 30s. a week" not to contemplate purchase; and here I agree with him. If a Carnegie chose to present a thousand such lads with up-to-date machines, they could afford to run them. Such a youth can live on £1 a week, and the extra 5s. tots up to £13 per annum, which would easily cover the upkeep for 5,000 miles. But a lad in this position ought to be saving, and to spend the whole of his surplus income on a hobby is thriftless. Anybody who can afford £50 for a new machine and very much less for a good second-hand one, and can see his way clear to devote £10 per annum to upkeep, can afford to run a motor bicycle. This is regarding the matter purely as a question of finance. I admit that the expense may often be unjustifiable from other standpoints. In my opinion, a man who does not ride a motor bicycle, and admits having "chucked" it, should delegate the duty of writing about it to some person who does ride.

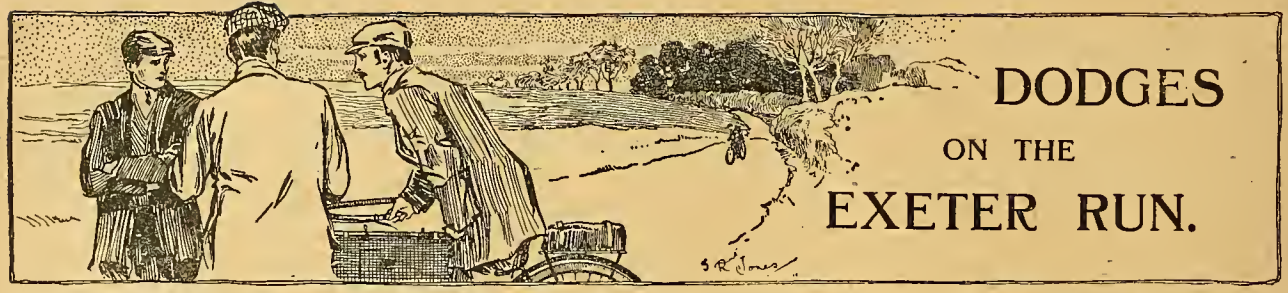
How to Prevent Side-slip.

The author of the interesting article in our issue of December 28th has omitted a few maxims which I consider vital. The chief safeguard is not to funk it. If you think you are likely to tumble, you *will* tumble. The second is to use a wide handle-bar; the more leverage the bars give, the better the prospects of correcting an incipient skid. The third is not to carry heavy weights on the tail of the machine; in some districts where the grease is particularly treacherous I find it considerably more difficult to keep a machine vertical when I have a big bag on the carrier, though, strangely enough, certain patterns I have ridden do not seem to mind added weight at the rear.

The point mentioned about keeping the saddle well forward is highly practical, but often entails using a special short handle-bar in winter. One machine which I recently owned was a terror on bad grease until I sawed about 6in. off each end of the handle-bar, and got a new saddle pin which brought my weight further forward. After these alterations it was very steady to ride, even in towns where grease abounds and there is a fair amount of traffic.



An Australian-built motor cycle—the E.W.B.-J.A.P.—quite an up-to-date design assembled and marketed by E. W. Brown, of Melbourne, Victoria. It will be noticed that Truffault spring forks are fitted.



DODGES ON THE EXETER RUN.

CONSIDERING the untoward nature of the circumstances—sloppy seas of mud underfoot and drizzling rain overhead—the intrepid-looking crowd of enthusiasts who were congregated under the flickering glare of acetylene flare lamps at the Bulstrode Hotel, Hounslow, on Boxing night, was a remarkably good natured and merry one. Most of them, too, were fairly busy. Here one would see hasty repairs, alterations or adjustments being made; or a protesting hand would be held out

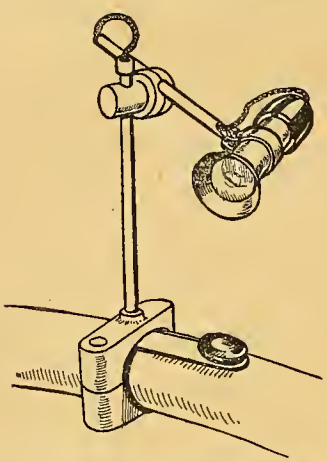


Fig. 1.—Home-made speedometer lamp on Bentley's Triumph.

to "ask your pardon, but my carburetter is somewhere down in that puddle, and I have not got a spare with me"; and in one dark corner, to the accompaniment of exasperated cursings, the entrails of a machine were being laid open to the elements.

Preparations in the Dark.

All around was the noise made by the use of spanners, the gurgle of emptying petrol cans, the buzz of conversation, and the slippity-slosh of dripping overalls. Men would be seen every now and then groping about in the dark with short-lived matches; others would devise means for tying something else on to a machine which was already a store of accessories and "bodgments"; anxious minds would carefully count their acetylene generators to see that none had dropped off in the ten mile run-out from town. Altogether a stirring scene of restless activity, glare, noise, and the smell of leaking acetylene gas.

And the machines themselves! A poor advertisement, I opine, for the motor cycle in general and an object lesson that one can hardly fail to regret could be taken advantage of by so few actual manufacturers of machines. True half a dozen hours of steady rain falling on mud-surfeited roads make riding conditions none of the best—and perhaps few of the machines were over-clean to start with—but only one description of them can be applied, and applied to one and all, they were absolutely filthy. From front number plate to back tyre, they were smothered with mud, it dripped—the more liquid parts of it—from lamp bracket, hubs, tanks, frames, engines, from everywhere that it could. Several of the machines really looked as if they had been dipped in a mud bath—and amongst them being some with specially fitted guards.

Penetrating Mud.

It is evident that mud takes a great deal more of exclusion than most people imagine. One thing, however, is rather remarkable. Here is a motor cycle trial which exceeds neither in distance nor in difficulty rides which are often undertaken under all sorts of weather conditions by ordinary amateurs who rarely trouble to make special provision as to weather-proofing and illuminating. Yet there was scarcely a machine entered for this competition that did not have some special fitting or other. Belt shields, extra mudguards, large tool cases, leg-guards, hand-muffs, monstrous lighting outfits—all these betrayed the fact that few riders or manufacturers have the courage to face four hundred miles of mud-plugging on standard machines. And there is yet another remarkable fact. Year after year the Exeter run produces machines with special devices, some of which are good, some bad, and some indifferent; some are fitted by amateurs, some by manufacturers, but all suffer from a common complaint—one seldom hears anything of any of the devices until the next Exeter run comes round again! Slipping belts are a bugbear, but a well-designed shield will overcome the trouble. So much is proved. Why then, one may ask, are these belt shields not fitted as standard to every machine which makes a pretence to being an "all-weather mount"?

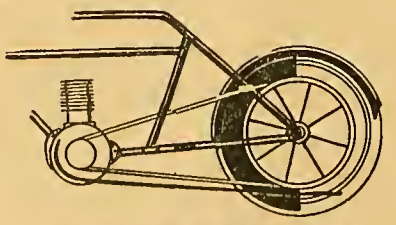


Fig. 2.—Mudguarding arrangement on 3½ h.p. Rover.

Interesting Fittings.

The following is a rough description of some of the more interesting devices which a stroll round the yard of the Bulstrode Hotel disclosed.

Fig. 1 shows a neat little turret-light contrivance fitted to his Triumph by P. H. Bentley. Although it was a home-made affair, the workmanship was irreproachable, and it formed quite one of the neatest little fittings imaginable. The electric lamp bulb is carried in a mounting which swivels in all possible directions, and which is carried on an extensible arm, which in turn is supported by a cross-head which can be slid up and down the central column. This last is carried by a special clip upon the handle-bar, wherefrom it is insulated by a packing washer of fibre. Both the column and the arm are hollow, the conducting flex being threaded through them. The switch consists of a blade similar to that which is used for magneto cut-out switches, and throws the lamp into circuit by earthing the column and clip to the handle-bar.

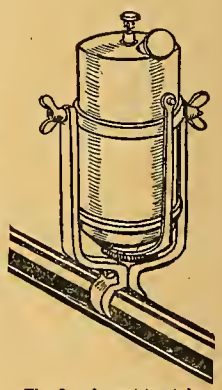


Fig. 3.—A neat top tube generator clip.

A Belt Shield.

Fig. 2 shows diagrammatically the arrangement which Harold B. Karslake had fitted to his 3½ h.p. three-speed Rover to keep mud off the belt. It was a shield of a very comprehensive nature indeed, and, to judge from the appearance of the belt after ten miles of the filthiest roads imaginable, was by way of being extremely effective. The principal point about it was the method of "filling-in" the back mudguard with a crescent of sheet metal, the edge of which lay *between* the tyre and the belt rim. This crescent extended exactly over the forward half of the wheel, and was riveted to the ordinary mudguard. At its bottom end the filling-in piece supported one end of a flat mudshield running underneath the belt to the crank chamber, where it was upswept over the engine pulley. The device closely follows the Dot method.

Another Karslake dodge is figured in the third sketch, and still another in the fourth. Both of these relate to the illumination, the first being a new genera-

Dodges on the Exeter Run.—

tor attachment and the second a novel arrangement of head lamps. As a means

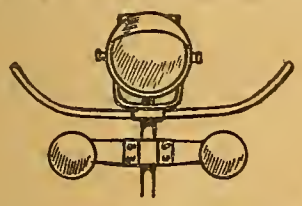


Fig. 4.—Novel lamp arrangement adopted by H. Karslake.

for clipping a generator to the top tube, Mr. Karslake's device strikes us as being quite the best thing we have seen, as it is at once so simple and strong, and supports its burden perfectly centrally. We understand it is shortly to be put upon the market by a firm of lamp manufacturers.

In the arrangement shown in fig. 4. the upper lamp is a large F.R.S. supported directly above the handle-bar stem by a plain bracket, which holds it centrally and extremely rigidly. The two smaller lamps are electric ones, which, although small, give a remarkably bright light. One of the great advantages of this arrangement will not escape the attention of riders who have gone in for several lamps at a time, namely, that the big acetylene lamp is fixed centrally above the steering head, and consequently has no bad effect on the steering.

Amongst several other provident ones was W. Cooper, whose Bradbury was fitted up with the device shown in fig. 5. Attached to the crank chamber was a V-shaped shield, as shown, of some breadth, which well protected the engine pulley and N.S.U. two-speed gear. In the point of simplicity, Mr. Cooper's device must be considered very effective indeed, although the greater part of the belt is not protected from mud splashed up from the road.

An Effective Underscreen.

T. W. Tattersall had provided his 5-6 h.p. R.A.G.S. with a monstrous undershield, designed to protect not only the belt but the whole of the rest of the machine, including the rider. It was a piece of sheet metal, almost eighteen inches wide, turned up in the front to form a wide rounded flap, and going backwards under the engine as far as the back tyre. It is rather surprising to find this sort of thing used so little, as it is extremely simple to make and fix, can be detached when necessary in a few minutes, and is beyond doubt extremely effective without any further additions. One of its great advantages, to the mind of one who happens to have tried such an undershield, is that it

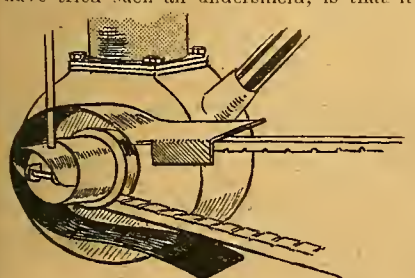


Fig. 5.—Engine pulley belt shield on W. Cooper's Bradbury.

keeps the legs and boots quite warm and dry—a very important consideration in winter riding.

The majority of additional mudguards that were to be seen had reference to the comfort of the rider rather than to the special protection of any mechanical part, thus one found most of them applied to the front wheel.

Fig. 6 shows the manner in which mudguarding of the front wheel was carried out on the Rudge machines. The arrangement was not particularly pretty, but appeared to be quite effective in screening the engine, etc., from mud. On each side of the ordinary guard are deep side flaps, which at the bottom terminate in a triangular horizontal flap, behind which again is a very large shovel-shaped leather flap trailing just clear of the ground. Fixed at each side to the blades of the spring forks is a convex panel, supported at its front edge only, and turned outwards at an angle of about 30°. It will be noted that this panel, or scoop, extends below the hub centre. Its purpose is to catch and deflect the mud and water, which is carried by the tyre past the front of the

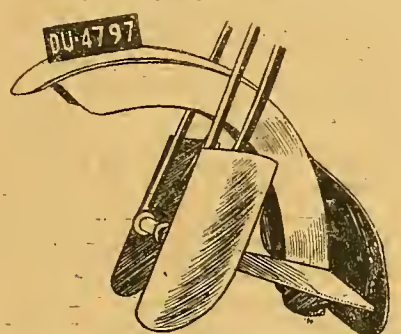


Fig. 6.—Special mudshields on Elce's Rudge.

main guard, and so blown back on to the legs of the rider and on to the engine.

Another machine with an unusual front guard was Geo. Wray's Bradbury sidecar, in which, as shown in the diagrammatic sketch, fig. 7, nearly a half of the front wheel was entirely enclosed by large leather flaps at each side, tightly laced on the ordinary mudguard.

Fig. 8 shows a home-made leg shield on a N.S.U. machine. Its construction should be obvious from the sketch. The down pieces were plain ordinary waterproof. Needless to say, there was a good show of Miller, College and E.L.I. shields.

The Question of Lamps.

Turning now to lighting arrangements, there were few riders indeed who contented themselves with a single head lamp. Many solo machines had two or three, whilst four on a sidecar combination was nothing out of the ordinary. In the matter of generators, there was no lack of quantity, the average number being three, although there were five on several mounts. One or two had provided themselves with dissolved acetylene outfits, the advantages of which system have only to be known to be appreciated. Electric lighting sets also found a good many adherents.

Several riders had forsaken purely motor cycle accessories for the more ambitious "car stuff"; indeed, it was almost the rule to find, at any rate on the bigger sidecar machines, a regular 60 h.p. head lamp. This, generally, was fitted up in a purely temporary manner, the usual place being on the front stay between the bicycle frame and the sidecar, though in a good many cases it was

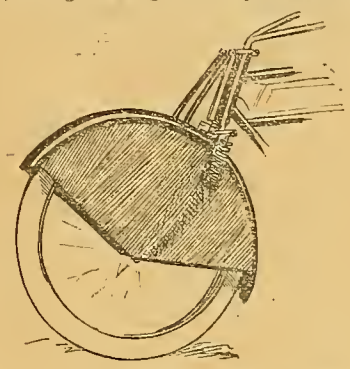


Fig. 7.—The large front guard on G. Wray's Bradbury.

fixed on the "toe" of the sidecar itself.

One of the few who had taken the trouble to "make a job of it" was W. Pratt, whose P. and M. carried a monstrous Lucas head lamp, carried as indicated in fig. 10. It was supported by a couple of massive columns proceeding direct from the front hub and braced to the ordinary lamp bracket. We understand the rider found this big and heavy lamp did not appreciate the bumps its unsprung position laid it open to; and the overhanging of so much weight did not make steering on greasy roads any too easy.

A Dynamo Set.

Probably the best lighted vehicle in the competition was F. B. Webber's Morgan runabout, which carried a complete C. A. Vandervell dynamo installation, the generator being driven by Whittle belt from a pulley fixed on to the outside flywheel of the engine. The lamps were a couple of C.A.V. car pattern ones, and gave an enormous light. Similar lamps, with special metal filament bulbs and silvered parabolic reflectors, were to be seen on two of the Rudges which were fitted with sidecars. In this case, the large battery of accumulators was carried in the sidecar, immediately behind the passenger's legs, whilst the 8in. head lamp was supported directly on the steering head, as shown in the small sketch (fig. 11), by a couple of brackets fixed to the handle-bar itself.

Route cards, speedometers, watches, etc., were generally lit by electric lamps,

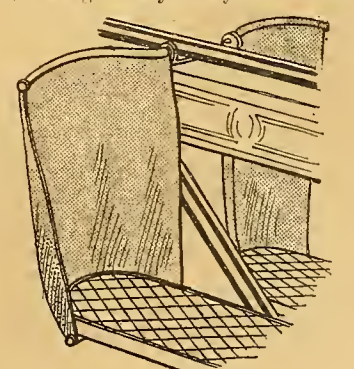


Fig. 8.—Leg shield on an N.S.U. machine.

Dodges on the Exeter Run.—

either fixed to the handle-bar or to the top tube. These lamps were, of course, intended for occasional use only, though, to judge from the battery capacity in some cases, they would outlast the night if kept hard on all the time. One man had gone the length of fitting up a full-sized electric side lamp on the handle-

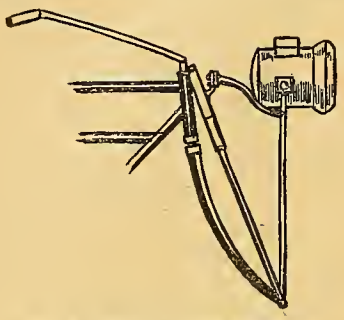


Fig. 10.—Special car lamp bracket on W. Pratt's P. and M.

bar in order to illuminate his route card. This excess of light is, however, in our opinion, a great mistake, as, unless one's head lights are of perfectly enormous power, the glare arising from the illumination of a route card or speedometer is likely to dazzle one at a moment when all the clearness of one's vision is wanted.

After seeing the lighting arrangements of most of the Exeter machines, we cannot fail to come to the following conclusions. They deserve, in our opinion, the closest possible attention, as they certainly appear to indicate that, as far as lamps and generators are concerned, there is room for a good deal of improvement.

Conclusions Arrived at.

1. Only a very few riders consider the light from even the largest motor cycle head light as sufficient for a long run. It was noticeable that the "old hands" had each a pair of head lights at least, almost without exception, or, if not, they had a motor car head light. In conversation with several well-known riders, we ascertained that they would willingly have carried as many as four head lamps if they could have done so safely or even found a place for their attachment, and this for no other reason than that something bigger and better than generally used at present is next to a necessity for a serious night ride.

2. Experienced riders have none too much confidence in even the best of acetylene generators, or else a couple would be considered ample for what is approximately twelve hours of darkness. It is quite evident that generators are not expected to operate for the time for which their makers claim them to produce gas. With regard to electric batteries, it is here not so much a slight lack of confidence that is manifest, but a go wrong, which can only be taken to positive expectation that they would mean that the average motor cyclist is of the opinion that accumulators have in no way improved since the days of the battery ignited machine. Partially, perhaps, this may be due to the fact that in many cases special accessories are fitted for the Exeter run only at the last moment, and that this test is the first occasion for their use over a prolonged time. It is all very well to be on the safe side—that,

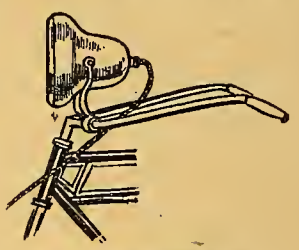


Fig. 11.—C.A.V. lamp arrangement on Elce's Rudge.

after all, is the merest prudence—but there is no reason that we can see why lamps and generators should not be at least as adequate for their work and as reliable as any other part of a motor cycle. No one, that we could see, was carrying spare magnetos or carburetters! Be it noted, also, that no one taking a car through such an event would festoon it with spare lamps and generators, the standard outfit being capable of doing all that is required of it.

A MECHANICAL VAPORISER.

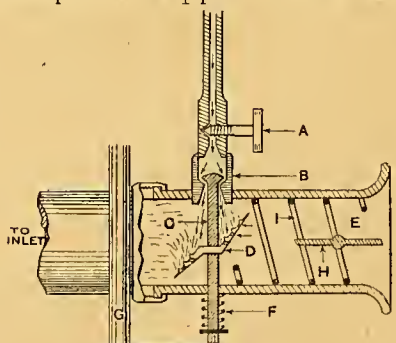
MANY and various are the designs of carburetters and methods of vaporising that we read of or see from time to time, yet never have I seen or heard of experiments in the same trend as contained in the following lines. This experiment was carried out by the writer during 1906 when endeavouring to obtain the last ounce of power from an old automatic inlet single that was used for racing purposes.

No other field of motordom has such scope for experimental work as carburation. Those whose inclinations have been in this direction well know the reward.

The arrangement here described was used entirely for speed work, and at no time did I test it for touring purposes. It was rather extravagant in spirit, but this was only a minor detail in my case, hence economy received little consideration.

Benzine was the fuel always employed, but an incident which proved the vaporiser was up to its duty with kerosene is here related. I had completed my preliminaries, some six or seven laps, and a few minutes prior to the start handed the machine to the attendant, who filled the tank. This completed, I got on the mark, and was somewhat perplexed, when the gun went, to find the machine, usually fast at kicking off, just the reverse, and it was with difficulty I got a move on. However, when once going it fired splendidly right throughout the race. After examination revealed the fact that kerosene had been placed in the tank, whether deliberately or otherwise will never be known, but many such shady practices were in evidence in this country then. [This does not refer to England.—Ed.]

The accompanying sketch clearly shows the working of this vaporiser. The tank was made of brass, capacity about one quart, while the filler cap contained an ordinary Dunlop air valve taken from a cycle inner tube. After partially filling the tank, pressure was applied per medium of a cycle pump connected to the Dunlop valve. A pipe led from the tank



The mechanical vaporiser described in the accompanying article.

cock to a needle valve A, which acted as a jet. B is a valve seating attached to the jet, while C is a small valve. Fastened to the valve stem of C is a Z-shaped collar D, ridged and drilled with 1/16in. holes, which break the spirit up. The above was attached to the inlet pipe E, which faced to the front of the machine.

The valve C protruded through the inlet pipe, where the spring F was placed to seat it firmly. Now from the exhaust cam an extension was carried, and on this was attached another cam, which worked the rod G, similar to the present overhead mechanical valve. This was timed to open the valve C just prior to the induction stroke, and to close it on its completion.

The pipe E was closed at its extreme end by the air throttle H, worked by a lever from the tank. A piece of wire I, in spiral form, to act as a quick thread, which gave the incoming air a revolving motion, was soldered inside the inlet pipe.

It will be readily seen that, on the induction stroke, the valve C being open, the spirit, with pressure behind it, strikes the collar D with some force and is converted into very fine spray. The air entering through the inlet *vid* the throttle H meets the spirit at this collar also, and, while assisting in vaporising the fuel through the holes in D, is at the same time thoroughly mixed with it.

No throttle for governing the gas was fitted, it being unnecessary for racing purposes, the control being entirely by the air and the ignition.

This vaporiser, when used with the automatic valve, could not be cured of popping, which eventually led to the inlet valve being converted to a mechanical overhead, when the trouble disappeared.

The advantages of this style of vaporiser are many. The choked jet trouble is non-existent, a thorough mixture is obtained, which is forced into the cylinder by the pressure of the inrushing air, hence the latter is charged with gas to its utmost capacity. S.L.B.

M.C.C WINTER RUN TO EXETER AND BACK.



COMPETITORS' EXPERIENCES.

MY entry being the first received by E. B. Dickson, the trial hon. sec. for this event, I had the advantage of starting first for motor cycles. Sharp at seven o'clock I was given the word to go by Timekeeper F. T. Bidlake and R. H. Head, the chairman of the club. The first few miles required great care over the tramlines, and W. H. Wells with his big 7 h.p. Indian sidecar, came past me going great guns. I certainly tried to overtake him, but owing to the bad state of the roads through Bagshot and Egham, was quite unable to do so. Egham Hill was being observed by F. J. Jenkins, and he informed me later that no fewer than thirty-seven failed here. No doubt many of them were new to night driving. Surely the old hands would never fail so hopelessly. Soon after we had passed Blackwater I was joined by V. Olsson on his new twin Trump-Jap, he having taken delivery of the machine two days previous to the run. It was certainly one of the quietest machines in the trial, and always had a good turn of speed.

Several of the men were complaining about having lamp trouble, but I was one of the fortunates this time, having fitted one of the Lucas lamps with two separate generators, and also an electric lamp and dry battery.

Just before reaching Andover I noticed Jack Woodhouse and his back tyre having a few words together.

I arrived at Salisbury, the first checking place, at 10.50, and all were quite ready for their first "breakfast." Several of the machines could not be taken into the hotel yard, and had to be left in the road while the riders refreshed the inner man.

The Course Well Marked.

W. H. Wells and I left Salisbury in the second stage of the journey, and I kept a very sharp eye for the turning at Wilton, this being the place where so many of us went wrong last year, but, thanks to the trials secretary, the course was very well marked with lanterns at the back of the arrows, and no one need to have gone wrong.

The narrow roads and lanes beyond Shaftesbury were in a deplorable state, and floods were met which caused my belt to slip in taking the splash, and, in fact, I saw two cars skidding all over the road.

Yeovil saw a good number of the men taking in supplies.

Chard was the next stumbling block for the majority of the riders. Mather and I struck the hill together, but, unfortunately for him, he fizzled out, whilst I slipped in my low gear and sailed comfortably to the top. I was much surprised to see such a large gathering of spectators so early in the morning, and yet a section of the trade say they do not want competitions. It is a pity they do not go through some of these trials and witness the enthusiasm all along the line.

Alan Hill told me he failed first time with his Rudge and sidecar, but went down again and made a clean ascent; in fact, I quite believe fifty per cent. failed owing to their striking the hill unawares in the dark.

At Yarcombe I waited at the top to witness several of the climbs, and the best I saw was by W. A. Sale (7 h.p. Indian), who came up at a great speed, and V. Olsson (Trump Jap), also Harry Bashall with Enfield sidecar.

The weather now had become very bright and riding conditions were much better. One thing I am quite sure about, had we known the roads were in such a dreadful condition when riding over them in the dark, we should not have taken such risks. However, "All's well that ends well."

The first return check was about one mile from Yeovil, and I felt convinced several would be disqualified for being too early.

I was not due before 10.25, but I noticed some of the back-markers had signed in at 10.8.

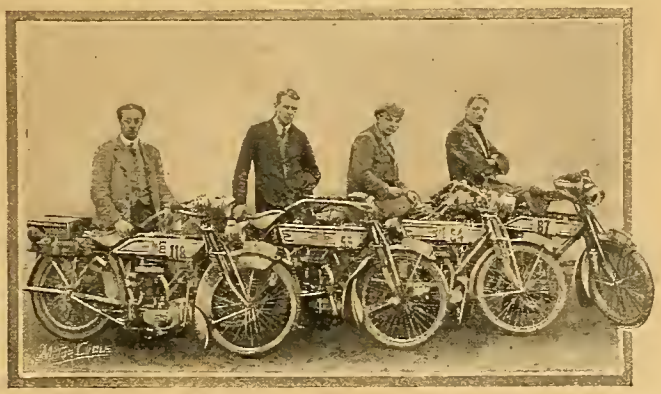
The floods were still out, which caused the belt-driven machines much trouble. A good many people witnessed the ascent of Shaftesbury. Bell (F.N.) and Hull (Indian sidecar) led the field as far as Basingstoke, where Southcombe-May was in charge of the second check, which caught several of the riders napping.

At Bagshot I caught up Bell lighting his lamp. We both were very anxious to be the first to finish, so I took the risk over grease and mud and checked in first at the finish at 5.43, having gone through the most arduous and trying trial that I ever remember, my machine—a Bradbury—never giving me a moment's trouble, except the petrol pipe, which somehow got choked. The tyres—R.O.M.—did their work remarkably well considering the nature of the roads, and held up splendidly.

W. COOPER.

Experiences of the Competitor using the Smallest Engine.

When I left home on Tuesday afternoon it was raining hard, and my belt was slipping very badly. On arrival at Hounslow I found that nearly all the competitors were there busily engaged putting finishing touches to their machines. Just prior to leaving, I heard that A. V. Sumner had been unfortunate enough to break the axle of his S.A. three-speed gear. At 7.57 p.m. I was despatched with F. L. Goodacre (A.S.L.), rain falling slightly. We kept company until Basingstoke was reached, where we found several competitors who had stopped for a smoke and something to eat. G. N. Higgs (A.C. Sociable) supplied us with hot coffee from his Thermos flask, and S. B. White (4 h.p. Service) with some beef tablets, both of which were thoroughly appreciated. Finding that my exhaust valve had lengthened, I filed a piece off at the garage. In the middle of Salisbury Plain I found H. A. Cooper (Bradbury) and R. Croucher (3½ h.p. Kerry and empty sidecar) with sandwiches and hot Bovril. As time was getting on, I restarted only to be stopped very soon by Frank Thomas and O. Hill (G.O.K. sidecar) for some petrol, as they had run out, so we turned the little Alcyon over, and got some out *via* the filler cap. Then my troubles started. About one mile after leaving Thomas, the exhaust valve broke, and all my spares were too long. I here discovered that I had, among other things, lost my file, so there was nothing else to do but take off my belt and pedal. Thank goodness, not very far off I found a signal box, so went up the railway bank and knocked at



The team of Ariel riders in the 1911 M.C.C. London-Exeter-London Run. F. C. North, G. Boswell, C. B. Duberly, and S. C. Perryman. All four succeeded in gaining gold medals.

Competitors' Experiences in the M.C.C. Winter Run.—

the door. After a little searching round, the old signalman found what I wanted, and I was enabled to file a little off a valve and proceed into Salisbury. Here I found C. F. Halsall (Clyno) just getting ready to leave. Having filled up with petrol, oil, carbide, etc., I was just about to enter the hotel when H. Foote (8 h.p. T.T. Bat) arrived, having had trouble with his front tyre. I was now something like two and a half hours late, so we pushed on together.

We were travelling together at a very reasonable speed, when Foote hit a water splash, but, luckily, did not stop in the middle. After examining this for depth, I decided to risk it, so took it "all out." We then, of course, found our belts slipping, so stopped and applied some more "Belticum," which immediately stopped the slip. I had applied some of this stuff before leaving Hounslow, and I must say it is nothing short of marvellous on either a rubber or leather belt for stopping slip. A few hundred yards further on we came across another water splash, so took it "all out" again, Here we passed Halsall going very slowly, and with his engine transmission making a terrible noise. Yeovil was our next stop, where we filled up with petrol, etc., and the garage proprietor very kindly supplied us with hot coffee, etc., the Mermaid Hotel being closed.

Chard Hill.

I managed to get nearly to the top of the steep pitch, and feel sure I could have climbed to the top could I have pedalled, but, as mentioned earlier, I was minus a chain. After pushing the machine up to the cottage, I managed to get going again, and flew to the top. I was very worried again over Yarcombe Hill, but was agreeably surprised to find that I was able to get round the first two or three bends; then Foote pushed me a few yards now and again till I reached the top. About fifteen miles out of Exeter I was stopped by J. Chater-Lea (Chater-Lea sidecar), who had broken the spring of his contact-breaker, so after leaving him a new contact-breaker complete I pushed on into Exeter. Having left Salisbury so late, I had no time for food, and had immediately to turn round and come back. At Yeovil we were feeling pretty bad, not having had anything to eat since leaving Salisbury, and plenty of work to do. While Foote ordered some drinks, I saw that the machines were filled up with petrol, and bought some buns. The next stop was for oil, as I had been giving my little engine plenty. On Shaftesbury Hill Foote again helped me to the top by means of a few pushes on the shoulder. I must repeat that I am sure it would have been quite possible for me to have climbed all the hills had I been able to give a little pedal assistance. Then on to Salisbury, where we had a meal which we thoroughly enjoyed, being almost starving.

Just outside Salisbury I took the wrong road, but only for a few hundred yards, when I discovered my mistake. Nothing happened after this until I arrived back in Hounslow nine minutes inside twenty-four hours.

With the N.W. Londoners to Gloucester.

On Christmas morning I fetched my 3½ h.p. clutch Singer from Euston Station, and, never having been on a machine of this make before, I was very anxious to try it. I rode the machine straight home, and did not get a chance to try it again till Friday, when I had a short run round, and then went up to Hampstead in the evening, to be on the spot for the start to Gloucester. After trying many places, we (H. Foote and myself) eventually arranged to sleep on a sofa at the Bull and Bush Hotel, all the beds being engaged. Here we found Montague Drew, who had knocked the silencer off his 3½ h.p. 1912 Zenith.

Coffee Tin Silencer.

As the rules of the competition stated that noisy machines would be disqualified, we fixed up a coffee-tin to act as silencer. It was not till 3 a.m. that we had finished this, together with sundry adjustments to our own machines. The coffee-tin silencer was a great success, and held together during the run to Gloucester and back. We then retired to our "beds," only to rise again at 5.15. At 7.15 the first man was despatched. The road from "Jack Straw's Castle" was somewhat twisty, but very well arrowed; only once did I, in company with G. Fletcher Douglas) nearly take the wrong road. Luckily, Fletcher saw our mistake just in time. I had not been able to test the Singer's hill-climbing capabilities, and was really astonished at the way it literally flew up Dashwood with cut-out closed and nothing like full throttle.

The Writer Helps a Stranded Competitor.

About fourteen miles from Oxford one of my lamp-bracket bolts broke, and I was therefore obliged to carry lamp and bracket in one hand and steer with the other. I was somewhat late, and it was not a very nice experience, riding fast with only one hand, on a greasy road. Just outside Oxford Dickens was stopped, having run short of petrol. After giving him a couple of horn bulbs full, I proceeded to Morris's Garage. The run into Gloucester was uneventful, excepting the tramlines, which were in a terrible condition for skidding.

The most interesting part of the return journey was the ascent of Birdlip, with its long gradual gradient and then a corner, which is fairly stiff for a hot engine with cut-out closed. The Singer, however, came up here without a falter. Then for a few miles we ran through a fog.

It was now getting dark and I was lampless! However, I managed to buy an ordinary bicycle oil lamp, and with this I got into Oxford. Here, at Morris's Garage, I borrowed a very ancient Autoclipse head light.

There was a big crowd waiting in High Wycombe to see the competitors climb the fairly stiff and greasy hill leading out to Stanmore. A few miles on, I passed Griffiths on his little Alcyon, who had been delayed owing to belt troubles. After giving him a spare belt-fastenr link, I pushed on as time was fleeting. All went well till the Bull and Bush was reached, when I discovered that I was two minutes ahead of time. I decided to allow myself half a minute to get to Jack Straw's Castle. This, I found to my sorrow, was not quite long enough, as I was twenty seconds outside my maximum time.

The Runs Compared.

There is really no comparison between the two runs. Whereas in the first competitors had to climb Chard and Yarcombe in the dark, in the last, Dashwood and Birdlip were ascended in daylight, which is quite another matter. The roads to Exeter were in a far worse condition than those to Gloucester, and, coupled with the bad roads, a lightweight is very hard to get through without even any pedalling gear. I would suggest next year the competitors should all have to make a non-stop from Gloucester to the top of Birdlip.

R. G. MUNDY



R. O. Clark (four-cylinder F.N. and sidecar), one of the successful competitors in the M.C.C. Exeter run. On all hands one heard expressions of approval concerning the silence of this machine.

London to Gloucester and Back.

BELOW will be found the results of the N.W. London M.C.C. twelve-hour trial to Gloucester, on Saturday, December 30th, subject to confirmation by the committee:

SPECIAL PRIZE (solo machines).

W. Cooper (3½ Bradbury)

SPECIAL PRIZE (passenger machines).

F. W. Applebee (3¾ Scott sc.)

SILVER CUP WINNERS.

(Lost less than 30 marks.)

Glynn Rowden (3½ Triumph)
A. E. Woodman (2¾ Humber)
E. Pond (3½ Singer)
W. Cooper (3½ Bradbury)
W. Oldman (6 Bat and sc.)
H. C. Mills (3½ Premier)
R. Scott (3½ Triumph)
C. M. Simpson (7 Indian)
C. J. Burton (10-12 Mors)
A. E. Hawkins (2½ A.J.S.)
H. H. Berlandina (3½ P. and M.)
F. W. Applebee (3¾ Scott sc.)
J. Beal (3½ N.S.U.)
Eric Rose (3½ Triumph)
E. F. Lawrence (3½ Rudge)
J. W. Thomas (2¾ Douglas)
M Morgan (8 Morgan Runabout)
R. Lord (6 Rex Sidette)
J. A. Hilger (3½ Premier)
R. L. Printz (5 Bat)
H. Bean (5 Matchless)
A S. Phillips (7 V.S. and sc.)
W. C. Knight (3½ Triumph)
A. O. Rivon (16 Argyll)
P. H. Goddard (2¾ Douglas)
Gordon Fletcher (2¾ Douglas)
G. S. Drew (6 Zenith)
M. Drew (3½ Zenith)
L. S. Guiver (3½ Rudge)
R. G. Mundy (3½ Singer)
A. F. Plint (2½ Stuart)
Hal Foote (8 Bat)
A. V. Deacock (6 N.S.U. and sc.)
R. Holloway (3¾ Premier Twin)

SILVER MEDALS.

(Lost less than 40 marks.)

O. Tustin (2¾ Enfield)
W. Jacobs (3½ Rex)
Frank Smith (5·6 Clyno sc.)

BRONZE MEDALS.

(Lost less than 60 marks.)

G. Griffiths (2½ Alcyon)
L. Cass (3½ Quadrant)
A. G. Peppercorn (3½ Bradbury)

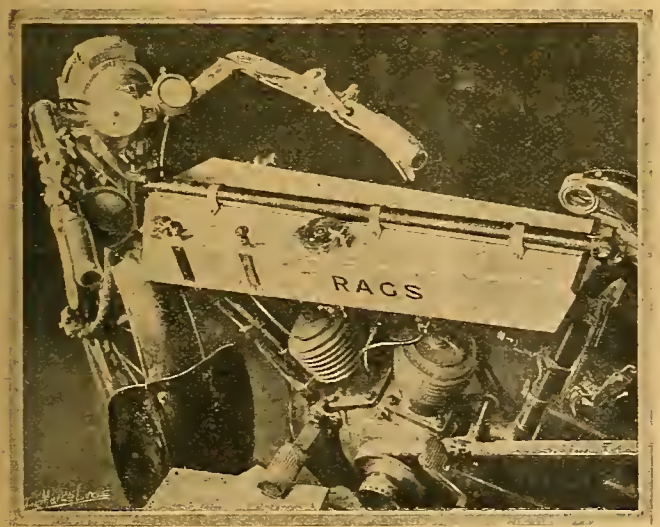
We have been asked to point out that several competitors lost all their marks through making adjustments in the control at Gloucester—a contravention of the rules.



W. Tormey, the Sydney motor cyclist who recently lowered the motor cycle record between Melbourne and Sydney (Australia). During the journey he was charged by a cow, which afterwards rolled over him. The existing time was 48 hrs. 40 mins., which Tormey improved upon by 4 hrs. 37 min. His mount is a 3½ h.p. Kerry-Abingdon.

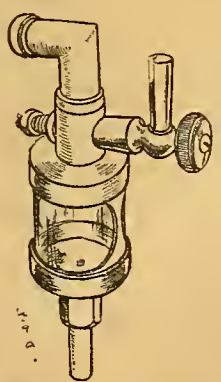
A TAPERED TANK.

MR. A. C. DAVISON, the well-known manufacturer of tanks and other motor cycle adjuncts, has, in response to a demand for a tank of larger capacity than usual, brought out one which holds slightly over two gallons, and yet is not abnormally wide in that portion where width would be an inconvenience. The tank is pointed at the front, wide at its foremost end, and then gracefully tapers away. The width at the widest point is 7in., and at the narrowest 5½in. When mounted on the frame it has quite a neat appearance, while the advantage of carrying two gallons cannot be overestimated.

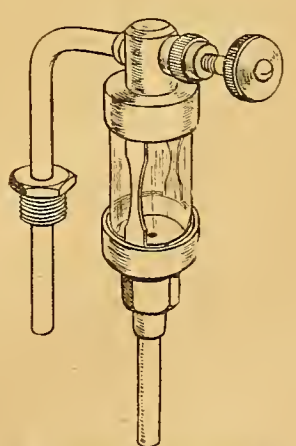


A special tapered two-gallon tank with binged stoppers made by A. C. Davison.

NEW LUBRICATORS.



Davison's positive drip-feed.



A new automatic drip-feed lubricator.

Other novelties of Mr. Davison's production are a 1¾in. hinged stopper, which is of a most convenient size and two new drip feeds (see sketches) one working by suction and the other by gravity.

CURRENT CHAT

TIME TO LIGHT LAMPS.

January 11th	...	5.10 p.m.
,, 13th	...	5.13 ,,
,, 15th	...	5.16 ,,
,, 17th	...	5.19 ,,

Birmingham to York and Back.

At a meeting of the Birmingham M.C.C. committee on Wednesday last week it was decided to award a gold medal to V. Busby (2¾ h.p. twin Humber) who finished second to F. A. Mc.Nab. The twin Humber was the smallest machine in this difficult trial.

The Year's Motor Cycle Records.

For hanging up in the office, we have had the list of British motor cycle records which appeared in our issue of November 30th, mounted on cardboard. Readers who would like a copy for reference pnrpeses should apply to *The Motor Cycle* offices, 20, Tudor Street, E.C., enclosing 2d. in stamps to defray postage.

French Winter Trial.

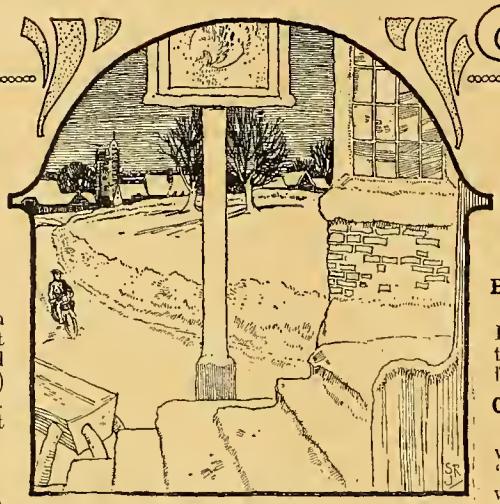
The Marseilles M.C. will hold a motor cycle competition on February 18th, which will include a hill-climb and a speed trial on the flat. The climb will be on La Cède, a hill with a maximum gradient of 1 in 8. The results will be decided on formula, and no change of gear will be allowed in the hill-climb and speed tests. A number of prizes are offered, and further particulars may be obtained from the secretary, 14, cours Belzunce, Marseilles.

M.C.C. de France Annual Reunion.

The Motor Cycle Club de France assembled on Saturday evening last to distribute the prizes won in the recent Circuit de Melun, and to participate in a banquet. Many representatives of the sport and industry were in evidence, among them visitors from the Motor Cycle Cln' de Paris. During the evening an announcement was made that the M.C.C. de France and the M.C.C. de Paris would shortly be amalgamated, the former to absorb the latter. The remainder of the evening was devoted to a lantern lecture on the beauties of the Meuse and Rhone Valleys.

A.C.U. Annual Dinner.

The annual dinner of the Auto Cycle Union will be held at the Waldorf Hotel, Aldwych, W.C., on Saturday, 20th January, at 6.30 for 7 o'clock, when Mr. Robert Todd, the chairman of the Union, will preside. As usual a most interesting musical programme, at which several well-known artistes will appear, will follow the dinner. For the convenience of those clubs which are making up parties to attend the dinner, seating accommodation will be arranged so that friends may sit together. Ladies are invited to be present. The price of the ticket is 7s. 6d., and may be obtained upon application to the secretary, Auto Cycle Union, 89, Pall Mall, London, S.W.



Australian 24 Hours' Record.

Until recently the twenty-four hours' motor cycle record was held by H. B. James, who covered a distance of 460 miles on Western district roads. P. J. O'Brien (riding a 1909 3½ h.p. Triumph) has improved upon this mileage. Starting at 4.5 a.m., O'Brien rode for 23h. 50m., in which time he covered 504 miles. His ride was not without incident. The petrol tank was punctured by a stone being thrown up, and the wire control to the exhaust valve lifter broke, thus necessitating the opening and shutting of the compression tap by hand. The roads on the whole were very bad, there being in places bad, sandy patches 6in. deep, which, of course, caused very slow going. The route taken was through Essendon, Woodend, Lancefield, and Carlsrnhe. O'Brien had one bad fall during the night on Battlepork's Hill, and, owing to his lamps failing, the trips through the Black Forest necessitated cautious riding.



P. J. O'Brien, an Australian motor cyclist, who recently lowered the Australian twenty-four hours record, covering a distance of 504 miles in that period. He rode a Triumph.

SPECIAL FEATURES.

CHOICE OF A VARIABLE GEAR.

FEATURES OF 1912 AMERICAN MOTOR CYCLES.

THE YEAR'S IMPORTS AND EXPORTS.

Birmingham M.C.C. Passenger Trial.

Mr. Herbert Austin, president of the Birmingham M.C.C., has offered a cup for that club's passenger trial, which we referred to last week.

Cost of Running.

We are obliged to hold over until next week further letters on the subject of "Cost of Running a Motor Cycle," which feature has now been running in these columns for several weeks.

A Protest.

We have received a copy of a letter written by J. J. Woodgate to the Auto Cycle Union protesting against the awards in the recent Sutton Coldfield A.C. two-day reliability trial. Mr. Woodgate contends that certain competitors placed in front of him transgressed the rules, whereas he made a non-stop run.

Ninety-two Motor Cycles in Two Years.

It is extremely likely that the record —if there is such a thing—of riding the largest number of motor cycles in a year belongs to a member of the staff of *The Motor Cycle*. The rider in question sampled no less than forty-five different motor cycles and five cars during last year, the total for 1910 being forty-two, *i.e.*, ninety-two in two years. The average distance ridden on each machine was about fifty miles, the experience of some extending to several thousand miles.

A Reader's View of the Exeter Run.

A correspondent has compiled from our columns the following list of 100% successes in the M.C.C. winter run, and sends it to us with the following remarks: "It would appear there was a gold medal for every competitor except the very unfortunate, and that the entry fee was sufficient to buy a gold medal and leave something towards the expenses from each competitor."

Douglas ...	7	entered	7	gold medals
Bradbury ...	6	,,	6	,,
Bat ...	5	,,	5	,,
Triumph ...	5	,,	5	,,
Rover ...	4	,,	4	,,
Ariel ...	4	,,	4	,,
Chater-Lea	4	,,	4	,,
New Hudson	2	,,	2	,,
Arno ...	2	,,	2	,,

Then follows a list of single successes.

Affairs in the States.

An account of an interview with Mr. George M. Hendee appears in an American contemporary. Mr. Hendee tells some interesting facts about his great business. 15,000 machines are to be made, and all are to be delivered before July 1st. The output since January 1st is one hundred machines per diem—an average of one machine every five and a half minutes.

An Easy Record.

During 1911, 7,357 motor cycles of British manufacture were sent abroad, representing with parts a value of £358.847.

The Midland Race Track.

Mr. F. A. McNab informed us last week that arrangements are well in hand for the flotation of a company to build the proposed two-lap racing track in the Midlands. Two sites are in view—one near the old waterworks at Aston, the other at Shirley; the former is the one preferred by Mr. McNab, as being more convenient for the general public.

The Proposed Yorkshire Invitation Trial.

The Ilkley M.C.C. invitation winter reliability run is not to be held, mainly on account of the A.C.U., which refuses permission to hold an open trial on Sunday, and many will support the governing body in its decision. Besides that, the Ilkley Club finds that under the rules, every participant would have to be affiliated to the A.C.U.

Winter Mudguarding.

The issue of last week containing a leaderette on winter runs had only been published a few hours when we received a message from Rudge-Whitworth, Ltd., informing us that they had experimented with our suggestion for a detachable form of mudguard extension for winter riding. The attachment had been made temporarily and tried on the road by Friday morning, and promises to be successful.

Brooklands and the Six Days' Trials.

The Motor Cycle suggestion to transfer the last days' run of the Six Days' Trials to Brooklands, which has received general approval, is unlikely to be adopted, this year at any rate—more's the pity. It appears that the chief objection is the cost of hiring Brooklands for the occasion—about £25—but surely there would be a good return from the "gate money," as it is extremely likely that hundreds would welcome the chance to witness the final, seeing that it is usual for trials machines to be fitted with new departures undergoing test for the succeeding year.

Up 1 in 8 at 10 m.p.h.

The open reliability trial on the 20th inst., organised by the Herts County A.C., is likely to attract a good deal of attention. Mr. Cooke interviewed the Chief Constable of St. Albans last week, and he is quite interested in the ten-mile per hour climb up Holywell Hill in the centre of St. Albans. It will be an interesting and instructive test, for the Mayor of St. Albans recently stated in court that he doubted whether a motor cycle could climb the hill at ten miles per hour. He happens to be an old motor cyclist, so Mr. Cooke is inviting him to be present on the day of the contest. Holywell Hill has gradients of approximately 1 in 8 in places, and a ten-mile an hour limit is imposed.

The Winter Trials.

E. Marshall, as well as the passenger of the Bounds-Jap sidecar, have written correcting H. Bashall's statement in the last issue that the Bat was the only single-geared sidecar successful in the Exeter run. The Bounds-Jap had a fixed gear, and, we are told, made a non-stop run, except for occasional lamp troubles.

A. T. Stanton desires us to make it known that the coupling of Hugh Gibson's sidecar, which gave way in the Gloucester run, was not of Bradbury manufacture. It appears that owing to the rush for delivery, Gibson had to borrow a sidecar attachment from a friend.

Jas. L. Norton assures us that he is quite a stranger to valve trouble, and that the real cause of his retirement from the Birmingham to York and back run was due to the sidecar tyre peeling off the rim, the resultant delay occupying 30m., which was the limit of time allowed, thus entailing disqualification.

In our report of the Gloucester run, W. F. Guiver was referred to as F. W. Guinness. In drawing our attention to the slip, Mr. Guiver mentions that he completed both the twenty-four hours' London-Exeter run and the twelve hours' run London-Gloucester and back without opening the toolbag of his 3½ h.p. Rudge.

A. Mabon (Rudge sidecar), who was reported in our last issue as not having arrived at Hounslow within thirty hours at the end of the London to Exeter run,

FUTURE EVENTS

Jan. 20.—Herts. County A.C. Open Trial.
" 20.—A.C.U. Annual Dinner.
Feb. 17.—Sutton Coldfield A.C. Open One Day Trial.
Mar. 2.—A.C.U. Open One Day Trial.
" 23.—B.M.C.R.C. Race Meeting.
" 30.—Derby and District M.C.C. Open Hill-climb.
Apl. 5-8.—N.W. London and Herts. County M.C.C. Joint Trial and Open Hill-climb (Yorks.) and Ladies' Competition.
" 8.—Westmorland M.C.C. Open Hill-climb at Shap Fell.
" 13.—Oxford M.C.C. Open Hill-climb

informs us that he arrived at Hounslow in twenty-seven hours. The checker, however, had left. Mr. Mabon, who had been delayed by severe tyre trouble, established proof of his arrival, and the matter is now being placed before the committee of the M.C.C.

J. C. Prior writes to say that he did finish the N.W. London Club's Gloucester run, but not until 11 p.m. His delay was due in no way to his Bat sidecar, but to the fog which caused him to run some miles off the course. Mr. Prior tells us that he climbed Dashwood on top gear and Birdlip on low gear with half throttle, and this without stopping to cool his engine at the hill foot.

It is interesting to note that although the Bowden two-speed gear is designed for 3½ h.p. machines, it successfully withstood the hefty horse-power developed by an 8 h.p. J.A.P. engine pulling a sidecar in the London to Exeter winter run, and helped to earn its rider a gold medal. Owing to an obstruction on Chard Hill, the rider came to a stop, but the engine was started by means of the kick starter, and the combination was got under way without difficulty, and without the rider leaving the saddle. This performance was applauded by those who witnessed it.

About five miles from Salisbury, a new Lucas lamp dropped off the sidecar of Hugh Gibson's Bradbury. He offers 10s 6d. reward to the finder.

Half-yearly Index.

An index to the last half year of *The Motor Cycle* is now ready, and copies may be obtained for 3d. post free, on application to these offices, 20, Tudor Street, E.C.

Auto Cycle Union Notes.

TOURIST TROPHY RACE.—The Secretary has been instructed to write to the authorities concerned to learn when permission to hold the Tourist Trophy Race in the Isle of Man will be granted, and in the event of no definite reply being received within a reasonable time to communicate with one of the principal French motor cycle clubs with a view to holding this important event in France.

SIX DAYS' TRIALS.—It has been definitely decided to hold these trials in the West of England, with Taunton as a centre. The new rules have been drawn up, and after being laid before the Standing Joint Committee (consisting of members of the A.C.U. committee and the Manufacturers' Union) they will be brought before the General Committee for confirmation.

BROOKLANDS AND THE SIX DAYS' TRIALS.—The Competitions Sub-committee carefully considered a suggestion which appeared in *The Motor Cycle*, that the last day's run of the trial should be held on Brooklands Track, but, mainly on the score of expense, it was agreed that this year, at any rate, the suggestion should not be carried out.

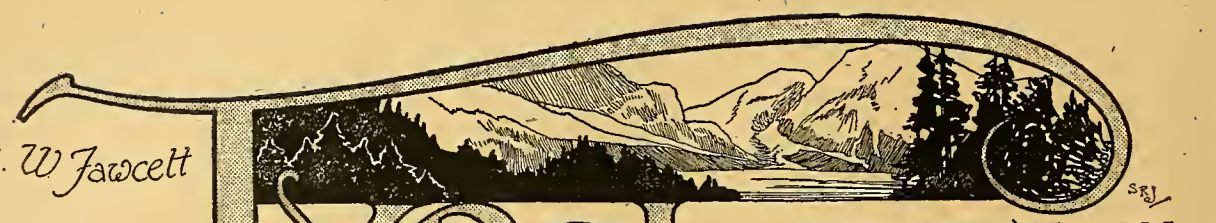
QUADCARS.—The Auto Cycle Union has been requested to grant permits to clubs organising trials for the above type of vehicle. As these are not classed as motor cycles by the Local Government Board, the Union feels it has no jurisdiction over them, and in consequence permits cannot be granted at present to clubs to run trials for these cars. The Union has, however, asked the Royal Automobile Club if it will take steps to encourage their development.

AFFILIATIONS.—The following clubs have become affiliated to the governing body: The South Birmingham M.C.C., the Bristol M.C.C., and the Ceylon M.C.C. The latter is the first colonial club to become affiliated to the Auto Cycle Union.

MEMBERSHIP.—At a recent meeting of the General Committee, sixty-seven new members were elected.

PERMITS.—Permits to run one-day open trials have been granted to the following clubs: The Bristol B. and M.C., August 2nd, and the Sutton Coldfield A.C., February 17th. One day is considered to be twenty-four hours.

At a recent committee meeting of the A.C.U., the following resolution was passed: "That, in view of the prevalence of police traps in many of the counties throughout the country, the committee strongly recommend the members of all affiliated clubs to pay all their local taxation licences for 1912 in 'clean centres.'" Motor cyclists are reminded that the whole of the licence fees for dogs, armorial bearings, and men-servants, and part of the motor cycle, car and carriage licences, benefit the counties in which they are taken out. Many counties are making special appeals to residents not to take out licences elsewhere.



By W. Jawett

TO THE TYROL AND BACK ON MOTOR CYCLES

(Continued from page 17.)

Sunday was the next day, but we decided to get along, and left busy Dijon for Dôle, the weather being still comparatively cool.

Just before Dôle was reached we came upon the nicest village we had yet seen, which looked ideal as we slowly approached down a long twisty hill. However, once there we were too busy to admire much, for the main street was bumpy and steep, and we were in for a nice steady pull up out on to the hills again. Poligny was our next stopping place, this time to enquire our way and for Grange to tighten a nut on the carburetter. We were now faced by what appeared to be a wall of hills, and, ascertaining that the road went over them, we set off, delighted to be able to let our motors "out"; nor were we disappointed, for we soon struck something that was worth tackling. I was taking a rather nasty hairpin when I came face to face with a bullock cart and two dull-eyed bullocks. These being successfully passed, I helped my machine with a few sharp digs of the pedals, and after tackling one or two more hairpins the road finished with an almost straight long pull up, which gave no trouble. A further ten miles brought us to Champagnole, and whilst I was buying petrol Grange essayed his French at a *café* and asked for lemonade. A few minutes later he came and asked me why they brought him gin in a bottle and three tall glasses! I tried my luck to see what would happen, and got lemonade, but it was pink.

Over the Juras into Switzerland.

Leaving Champagnole, we soon came to a fork in the road. As I could not make it out on my map and the corner post gave towns or villages I could not find, we took the right-hand road, and after twenty miles reached Lons-le-Saunier-les-Bains, to give the place its full name—which, by the by, it does not deserve—in the middle of the afternoon, and there being no other place of any importance for a good distance on our route, we decided to stay the night here, the day's distance being ninety miles. We found the C.T.C. Hotel Genève excellent. Grange was rather bothered to-day with a slipping belt, but this did not cause any trouble worth mentioning.

Next morning, Monday, July 17th, was as sunny as usual. On wheeling the bicycle out, I found the saddle was loose, and on further inspection I saw the saddle-pillar was broken. I was, luckily, able to have another fitted, at a cost of two shillings, at a cycle shop almost opposite the hotel. Perhaps I had better say here that this saddle-pillar was not supplied with the machine, but was taken with saddle, etc., complete from my last year's mount of different make, as I prefer a saddle that has been ridden some time to a new one.

A very enjoyable run of thirty miles brought us to our proper road, which we joined at Laurent, the scenery now being very impressive, as in the distance we could see mountains like a dark bank of clouds. Grange was quite impressed when told we must cross over them, but no doubt we should find a twisty road and sneak through almost without knowing it. We now began to tackle the Col de la Savine in the Juras, and the going was excellent, the splendid road leading through a pine forest which gave every now and again lovely panoramas of distant mountains and valleys.

A Wonderful View.

A descent to Morez, and we were climbing again, this time the Col de la Faucille, a nice sporting climb some five miles long, amidst magnificent scenery. Very sorry were we to reach the top. At Les Rousses we stopped at the French customs, although I did not think it necessary. A look at our tickets, and we were sent on our way again, to be met by another motor cyclist who had no doubt just left Switzerland. We thought we had reached the top of the Col, but were mistaken, for we afterwards passed it, with its hotel and a number of cars that had run up from Geneva. We were now descending, and very soon came to a view that brought us off our machines in quick time, for we appeared to be on a road cut out of the cliff side, and away to the left could be seen the glittering lake of Geneva, with Geneva itself bathed in sunshine, whilst the road leading down to it appeared twisting all ways. This lovely view kept us full of admiration for nearly half an hour before we started the descent properly. Round the corners very careful driving was necessary, especially after I had seen a light racing car come tearing up, with its driver in a racing helmet and ear rolls all complete. Every now and again a house was passed flying the French flag, denoting we were still in France, although we had left the French customs house a few miles back.

Along Lake Geneva.

Through Gex and then to Grand Saconnex, we came to the Swiss Customs House, and had a chat concerning motor cycles with a customs officer who spoke excellent English. Our C.T.C. tickets were shown here, and we again had no trouble, not even undoing a strap. The roads on the borders of the two countries were in a bad state and very loose.

To the Tyrol and Back on Motor Cycles.—

Arriving at Geneva in the early afternoon, we put our bicycles on the stands, and after tea we saw more motor cycles in the next half-hour than we had seen for a week. The place was alive with them. All appeared to be lightweights, very low geared, the Moto-Rêve and Motosacoche predominating, although the latter is not to outward appearances anything like those seen at home. Our machines and luggage had meanwhile drawn quite a crowd outside, which made our departure rather embarrassing. A halt at the bottom of the street, and we were at the lakeside, with its very animated scene of white pleasure steamers, motor boats dashing about, and white-sailed yachts, etc. We were reluctant to leave Geneva, and decided to revisit it on our way home.

Lausanne was distant about thirty-five miles along the lakeside, and a remark of mine to Grange that we should have just nice time to amble along and then get a good wash before dinner called forth the advice that we must hurry. "But why?" said I; "it is only half-past four." "Rot; it is half-past five," said Grange, and pointed to a clock; then I realised the variation between Swiss and French times, and had meekly to put my watch on an hour.



A fine stretch of Swiss road approaching the Austrian frontier.

The run along the lakeside was charming, but Grange had broken another glass in his goggles, and was troubled with the midges getting into his eyes. At Morges we stopped for a smoke, and watched an angler in a pretty little harbour. Grange had overcome his belt slip just before entering Switzerland by hammering his belt rim up a bit and touching his pulley up with a file, so it did not trouble him again, which was as well, for we expected Lausanne to be on a level with the lake, and were surprised when the road took a sharp turn to the left, and we were confronted by a nasty little hill. The abruptness of the turn and the fact that half the road was up pulled us both off our machines, but only for a moment, and we very soon reached the Hotel Victoria, where we found everything that could be desired.

A Morning's Overhauling at Lausanne.

Next morning, Tuesday, July 18th, we decided to have our first day's rest, and spent it in the hotel garage. We took our cylinder heads off, scraped pistons and cylinders of deposit, and touched up the valves the least bit. I at once became unpleasantly aware that my gudgeon pin and bearings were not wearing as they should do, and I decided to give a pumpful of oil every ten miles instead of fifteen. Grange thought this a good opportunity to put in his new cam wheel, but it would not fit! This was a nuisance, as the old one had given not the least trouble, and the question was, was there sufficient metal left to hammer over again? When replaced and hammered, the old wheel looked like holding, so was left as it was, the new one being put back amongst the spares.

The afternoon was pleasantly spent by a walk down to the quay at Ouchy and thence by lake steamer to Evian-les-Bains, Villeneuve, Chateau of Chillon (which, with all due respect to its admirers, we thought a barn-like affair), Territet, Montreux, Vevey, and back to Ouchy. This trip took all the afternoon, and was well worth it, notwithstanding the inflictions of a man on the boat with a harp.

We had not had a drop of rain so far, and next morning, Wednesday, July 19th, we put on our overalls in continued sunshine, and set off along the lakeside to Vevey, but I had not gone far on this very pretty but dusty road before misfiring set in, to be cured by cleaning the plug and contact-breaker.

All along the road there were plots of land or small fields rising from the lakeside in terraces, given up to the cultivation of the grape, and the men were seen very busy with portable tanks and sprayers syringing the vines, whilst there were also what I call "rain guns"—that is, nothing more or less than a huge funnel-like gun pointing skywards, the idea being to fire it off when a rain cloud is overhead, when, with a bit of luck, one can get rain to order.

At Vevey we turned to the left and began a long climb of several miles up a twisting road, and overhauled and passed a car, much to its driver's surprise.

Along through Bulle we shortly took a road to the right, and Fribourg was soon passed, over a beautiful bridge with the river swirling beneath. Once over the bridge the road to the left was taken, leading to Berne, the Swiss capital, and about eighteen miles away.

Bad Roads in Berne.

On entering Berne I had to wait for Grange, whose petrol supply had almost given out. It was not nearly so easy to obtain petrol as in France, and with only sufficient to last for twenty miles one should begin to think about filling up.

To the Tyrol and Back on Motor Cycles.—

I was rather surprised in Berne to find that the simplest questions in French were scarcely understood, nearly everyone speaking German. The roads, or at least the roads we took through the capital, were a disgrace, and many a back street in a manufacturing town at home would put them to shame.

We were now almost through Berne, and not a sign of petrol had we found, so we asked a man where we could obtain some "essence." A blank stare. Then I tried "Petrol," "Moto-Naphtha," "Stelline," and a few more names, until at last a light dawned on him, and he exclaimed: "Ah! Benzina." We had found another name for that useful spirit. We had to go over a mile to procure it, and I gave Grange some out of my tank before we arrived at a small house with the sign, "Auto - Benzin," where we both filled up.

How hot it was! And our poor engines were hot, too, for the petrol we had bought was awful stuff, and our bicycles ran rather sluggishly on it.

Straight on, through magnificent scenery, over the river Emme, into Langnau. A halt for a cooling drink, a photograph in a pretty village that looked just as if it had been made out of a child's toy box, and we were again off, passing at times lumbering waggons with teams of horses, the drivers often holding a cherry tree branch, which they had torn off some of the many fruit trees lining the roads, and idly plucking the black fruit. The horses were relieved a good deal from the troublesome flies by perforated buckets full of smouldering leaves or some damp sacking which were attached to the pole shaft.

We soon reached another small river, which we followed for some time, when the Bradbury suddenly stopped, without a sign of misfiring. We guessed the trouble immediately, and Grange very quickly had the magneto chain cover off, then his timing gear exposed, and found that his "hammered" wheel had come adrift. A few drops of rain now came down, and as we were only a few yards from an open building, we went inside. We made a small key and replaced the wheel, and were off again under twenty-five minutes.

The rain was only two or three drops, but straight ahead it was pitch black and a thunderstorm raging. We decided to stay the night in a country hotel near by, as it was now somewhere near six o'clock, and we were about fifteen miles from Lucerne, our distance for the day being 105 miles.



(1) Looking down Maria Theresienstrasse, Innsbruck.

(2) The old clock in Berne, Switzerland.





Next morning we reluctantly left, and were soon approaching Lucerne. Grange was somewhere behind keeping out of the dust, and I was thinking of nothing in particular, when suddenly I saw a long cigar-shaped dirigible disappearing behind a small mountain. Grange came up, but although we waited, it did not appear again.

Lovely Lucerne.

What a picture the approach to Lucerne was that morning, with the dazzling sun on the lake. Following the lake a little, we climbed up a bit, then stopped for a smoke and to admire the magnificent panorama that lay before us. One large branch of Lake Lucerne lay almost at our feet, everything being quiet except for the steady "chug! chug!" of a motor barge in the distance.

Passing through Küssnacht, we left Lake Lucerne behind, but immediately came suddenly upon another about a third as big—Lake Zug, which is something like ten miles along each side. This was, like all the others, perfect.

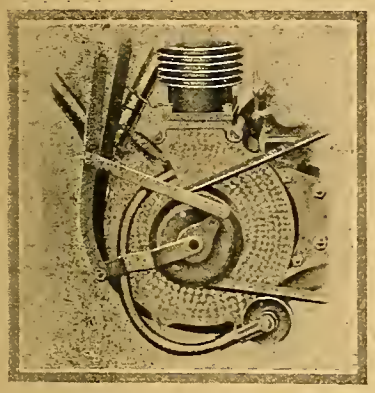
A drop down to Arth, then a turn to the left, and we struck a little terror of a hill about six miles long, which, like all others, required some skill in negotiating the numerous corners. We were on the edge of a small mountain; on our right the road fell abruptly away, while below was a small lake of a dazzling blue. *(To be continued.)*

THE NEW YORK MOTOR SHOW.

FEATURES OF THE NEW MODEL AMERICAN MOTOR CYCLES.

THERE are nineteen exhibitors of motor cycles at the Madison Square Garden Motor Show in New York, which opened on Saturday last. Below we briefly describe the principal American novelties and departures from standard practice in this country.

The Aurora Automatic Machinery Co., which makes the Thor, has a new 7 h.p. V twin with cylinders set at 50°. The engine is oiled mechanically by a pump gear-driven off the cam pinion; the oil reservoir is placed close under the petrol tank. The transmission is by chain, and a new two-speed gear has been evolved, with gears always in mesh. The control of this gear is from the left handle-bar, arranged so that no gear change can take place until the clutch is released. A feature of the new Thor spring fork is that both sides of the fork are continued upwards for the handle-bars to pass through, the bars being supported by a stamped lug which fits into the fork side.



Eclipse free-engine plate clutch fitted to the Yale. Note the flat belt and jockey pulley.

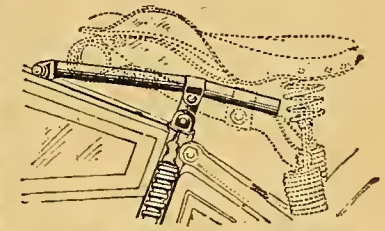
The Yale twins, which are the product of the Consolidated Manufacturing Co., of Toledo, have been augmented by the addition of a 5 h.p. model, with dual lubricating system, consisting of a positive acting gear-driven pump actuated by a continuation of one of the intermediate magneto driving gearshafts. The oil pressure is regulated, and an auxiliary hand force pump is also retained. The same idea of supporting the handle bars mentioned in connection with the Thor has been adopted for this model. The American firm responsible for this design ingeniously allow for adjustment of the belt by fitting rear wheel fork ends, which permit of an eccentric movement of the rear spindle; the total amount of adjustment of the belt is three inches. Purchasers are given an option of dry cell or magneto ignition.

Still Adhering to the Automatic Inlet Valves.

Contrary to English practice, although a newly designed model, the engine has automatic inlet valves, and outwardly follows the lines of the old type Peugeot twin-cylindered engines.

The free engine multiple plate clutch made by the Eclipse Machine Co. is adapted for fitting to the engine-shaft, and is supplied for belt or chain transmission. The mechanism consists of few parts, the clutch for engine belt pulleys having eleven discs held in place by a cover fastened with six screws. Spring pressure can be regulated by hand. The control is from the handle-bar or a side lever at option.

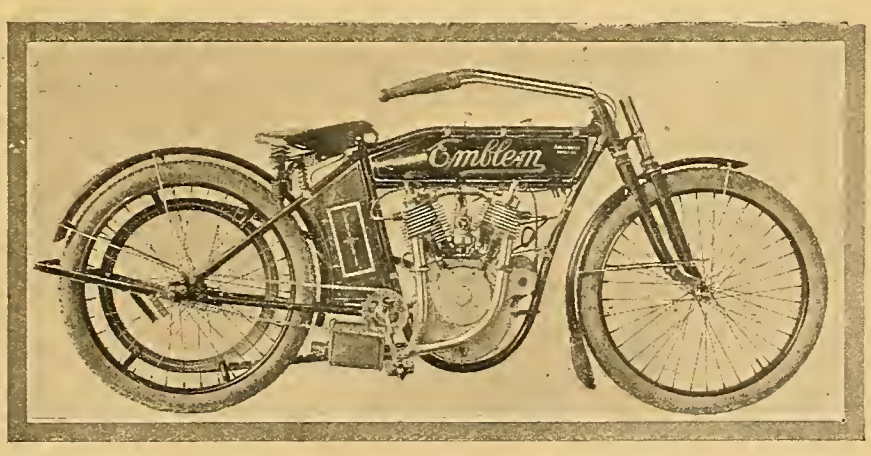
The Emblem Manufacturing Co. is responsible for the introduction of the machine which we illustrate. Several points about it differ from standard British practice. As in the Thor and Yale, the handle-bars are held by three stems instead of one. The saddle frame is hinged to the cycle frame at the peak, and supported on a coiled spring working over a vertical guide connected to the rear stays. This allows a radial movement of the saddle frame in addition to the usual saddle springing. The same firm exhibit a rear tandem attachment, a feature which is altogether missing from modern English exhibits. The seat of this is sprung on coil springs carried in telescopic tubes, one each side of the rear wheel. This firm still adheres to automatic inlet valves.



Showing details of the Harley-Davidson "full floating" saddle.

One of America's Best Productions.

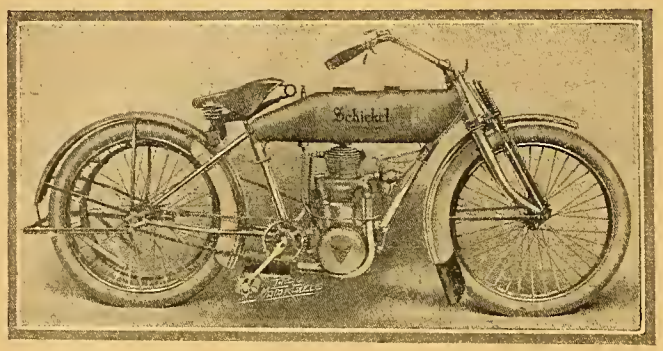
The Harley-Davidson is one of America's best productions. These machines are made in Milwaukee, and for 1912 are fitted with what is called in the States a "full floating" seat. This consists of pivoting the fore part of the saddle frame to the dropped top tube and spring supporting it from the usual seat pillar tube, on the lines of the Emblem previously mentioned. The construction, however, differs from the Emblem in being made up with vertical flanges depending from the horizontal seat pillar and hinged to the cushioning device, which is in the seat tube, as shown in the sketch.



Twin-cylinder Emblem, a representative American mount. The saddle pillar is pivoted to the frame in front and supported at the rear by an extra spiral spring fixed to the frame.

The New York Motor Show.—

Another feature of the new Harley Davidson is the adoption of a rear hub clutch enclosed in a drum on the left side of the hub, and operated by a hand lever working in a quadrant on the seat tube. The usual jockey pulley for the belt is retained, and the width of the flat belt is increased to 2in.



The Schickel two-stroke, the mudguarding of which is worthy of notice.

The Indians are, of course, represented, but as their features were fully described at the time of the Olympia Show there is no necessity to refer to them again here. The same models are shown, but the American equipment differs from the British with regard to saddles, mudguarding, tyres, and a few other items, which enable the prices to rule somewhat lower than the models made for the English market.

An American Valveless.

The Schickel is a two-stroke engine with only three working parts—the piston, connecting rod, and combined flywheel, crank pin, crankshaft, and magneto drive. The radiating flanges are gradually increased from the cylinder base to the combustion head to allow the engine to run cool in spite of the increased number of explosions. The inlet pipe forms part of the cylinder casting, and is so arranged that the exhaust gas heats the ingoing charge. The transfer passage communicates with the crank case by means of ports cast in the rear of the cylinder, and its lower end is bolted with the cylinder to the crank case. There is a compression release in front of the cylinder obtained by means of a mushroom valve opening inwardly. The engine is lubricated by purposely mixing the lubricating oil with the petrol and allowing it to go straight into the motor. It will thus be seen that this American design overcomes the oft-repeated objection to the use of crank case compression (mixing the lubricating oil with the gas) by purposely mingling the two beforehand, and so dispensing with oil pumps and other lubricating devices. It is claimed that perfect lubrication is obtained, and it is only necessary to fill the petrol tank, charge the measure with lubricating oil, and pour it into the petrol tank, and the engine is ready to run. Simplicity itself! if no deleterious effects follow such a system. The machine to which this somewhat novel motor is fitted is on ordinary lines, except that it has a 1¾in. flat belt drive.

The American Motor Co., makers of the M.M., for which Messrs. J. C. Lyell and Co., Great Portland Street, S.W., are agents in this country, exhibit two models, a twin and a single-cylinder. The stroke of the single has been increased to 4in., but the bore remains 3in. as before. The twin has a new Schebler carburetter, flat belt, and jockey pulley. The principal improvements in other directions are four piston rings instead of two, longer pistons, stamped steel flywheels and axles in one piece. Roller bearings are now fitted to the crank axles and crank pin of the single-cylinder pattern. The leading features of the twin are an eccentric magneto drive and cylinders set at an angle of 90°.

Birmingham M.C.C. Ninth Annual Dinner.

THE above club's annual dinner and distribution of prizes took place last Friday at the Imperial Hotel, Birmingham, where seventy-eight members and friends, of whom there was a fair number of ladies, attended. Mr. Herbert Austin (president) was in the chair, and after the loyal toasts had been honoured he called on Mr. Edward Lycett to propose "The Club."

Mr. Lycett mentioned the striking increase of the club membership during the last twelve months, and surprised some of the visitors when he stated that the number of members on the books was fifty per cent. greater than it was at the last annual dinner.

The reply was by Mr. R. Vernon C. Brook (hon. secretary), who detailed the principal events to be organised by the Birmingham club during 1912, and mentioned some of the trophies that would be put up for competition, among which are the James Cup, the Evans Cup, and the Norton Cup; the Lycett trophy will also be again contested this year.

"The Visitors," proposed by Mr. R. W. Duke (captain), brought from this well-known competition rider an earnest appeal to the visiting motor cyclists of Birmingham who were present, and who thought there was little or no chance for amateur riders in their events, to join the club and come and try their skill in special competitions which would be organised for their benefit, and wherein the entries would be confined to those who had never won a prize in a motor cycle contest.

Mr. G. Shaw Scott, replying for the visitors, recounted some of his early experiences with a 1902 Singer motor bicycle, which was so well made and reliable that it ran 33,000 miles in seven years, and then one day, like "The deacon's one hoss shay," it succumbed to the potholes of the Aston Road.

Then followed the distribution of prizes, which were handed to each successful competitor by Mrs. R. W. Duke, the names being announced by the Chairman. We noticed that Mr. R. W. Duke made many journeys from his seat to the raised dais where the trophies were distributed, he being the recipient of no fewer than ten prizes and medals

Straight Talk.

Mr. S. C. Perryman, who proposed "The Governing Bodies," was a little severe in his criticism of the Auto Cycle Union, and Mr. F. Straight, the secretary of that body, must have felt some difficulty in replying to Mr. Perryman's denunciation of last year's trials organisation; but Mr. Straight assured the company that arrangements were in hand for this year's trial which would prevent repetition of past failings, and those who won medals in the A.C.U. 1912 trials would assuredly earn them.

Mr. J. L. Norton proposed "The Press," which was replied to by Mr. W. Grew of this journal and Mr. W. G. McMinnies. The toast of "The Chairman" brought the proceedings to a close at 11 p.m.

The intervals between the toasts were filled in by a musical and conjuring entertainment.

The array of prizes and trophies on a side table made a brave show, and it is seldom one sees a finer display at any provincial club's annual function.

Club News

Chesterfield and District M.C.C.

The annual meeting was held on the 8th inst. The annual dinner and smoking concert will take place on February 14th.

Glasgow M.C.C.

The second annual dinner and presentation of prizes will take place on February 8th at Smith's Restaurant, Gordon Street, at 7 p.m., followed as usual by music.

Wolverhampton M.C.C.

The next breakdown competition will be held at headquarters, King's Hall, Central Arcade, Wolverhampton, on Monday, January 15th, at 7.30 p.m. A whist drive and dance will be held on the 22nd inst. at 8 p.m.

Oxford M.C.C.

The annual dinner of this club will be held at Buol's Restaurant, Oxford, on Saturday, February 3rd. The prizes will include those awarded at the open hill-climb organised by this club last April. A good musical programme is being arranged.

Surrey M.C.C.

The annual general meeting of the club will be held at the Angel Hotel, Guildford, on Thursday, January 18th, at 8.30 p.m. It is hoped to arrange a lecture to take place after the business of the meeting is concluded.

The annual winter reliability trial in conjunction with the Streatham and District M.C.C. for the Marians Challenge Cup will be held on Saturday, February 3rd. The start will be from Leatherhead at 8.30 a.m., and the course will extend *via* Dorking, Farnham, Basingstoke, and Newbury to Andover, returning *via* Winchester and Farnham to Leatherhead.

A breakdown competition will be held on Saturday, February 17th, at the Angel Hotel, Guildford, at 8 p.m.

West Australian M.C.C. (Perth).

Following on the formation of the club, a series of picnics was held. These contributed largely to the immediate success of the club. At the first annual meeting, Mr. Naylor was elected secretary, Mr. Wigmore captain, and Mr. J. C. Cochrane chairman of committee.

Prior to the formation of the club, a run was held to the hill, where, over a difficult course, a short trial took place. R. Wigmore (Triumph) made fastest time (3m. 5s.), followed by F. W. Oats (Brown) and W. Nelson (2¼ h.p. F.N.)

The first official contest of the club was held on December 2nd. This consisted of a hill-climb, the course being steep, in good order, and exactly a quarter of a mile in length. There were three classes: (1) The lightweight class, (2) standard 3½ h.p. machines, and (3) the open class.

Punctually at 3.30 p.m., the lightweight riders were sent up the Mount at minute intervals, in the presence of a goodly muster of supporters and a "cinematograph fiend." The second event proved the most keenly contested of the day, and the time (29⅖s.) was faster than in the open class. For this R. Wigmore (Triumph) won the special prize for fastest time, his machine fairly flying up the Mount. The open event brought out fifteen starters, and was won by S. Naylor, whose performance was very meritorious, as his duties as secretary had kept him so busy that he had not had time to clean his engine. Results:

Class I.—1, J. C. Cochrane (F.N.); 2, W. Nelson (F.N.); 3, F. Lloyd (N.S.U.)

Class II.—1, Roy Wigmore (Triumph), 29⅖s.; 2, T. Norton (Kerry-Abingdon), 31⅖s.; 3, J. Thornley (Triumph), 31⅗s.

Class III.—1, S. Naylor (four-cylinder F.N.), 30⅕s.; 2, W. Nelson (2¼ h.p. F.N.); 3, T. Norton (Kerry-Abingdon).

The A.C.U. formula was used throughout. It is worthy of note that every competitor succeeded in climbing the hill, contrary to the general expectation.

Blackpool and Fylde M.C.C.

Mr. Bennett's lecture will be given to-morrow (Friday), instead of on the day previously announced.

Bedford and District M.C.C.

A meeting will be held at the King's Arms Hotel, Bedford, on the 18th inst. at 8 p.m., for the purpose of forming a motor cycle club. Over twenty names of intending members have already been handed in. All interested are requested to attend or communicate with Mr. H. A. Lock, 9, Grafton Road, Bedford.

Streatham and District M.C.C.

A lecture on the subject of "The Use of Motor Cycles in the Army" will be given by Major Phillips to-morrow (Friday), at the Royal Automobile Club, Pall Mall, commencing at eight o'clock. The annual dinner and prize distribution will take place on Saturday, the 13th inst., at the Holborn Restaurant. The president, Mr. J. W. Orde, will be in the chair.

North-west London M.C.C.

The smoking concert is fixed for Friday the 12th inst., at 8 p.m. An excellent programme has been arranged. On Friday, the 19th inst., at 8.30, Mr. W. G. McMinnies has kindly promised to give his lecture on "Speed." Both the above meetings will be held at the headquarters, the Railway Hotel, West End Lane, Hampstead, N.W., and anyone interested in motor cycling is cordially invited.

Newport (Mon.) and District M.C.C.

The first annual dinner took place on the 1st inst., after which the Chairman distributed the following prizes:

First hill-climb.—1, W. Jones; 2, G. Harris.

Second hill-climb.—1, W. Mitchell; 2, W. Browning and F. Turner.

Third hill-climb.—1, F. Turner; 2, A. Williams.

Fourth hill-climb.—1, J. Herbert; 2, J. W. Foreman.

First speed-judging.—1, A. Axcelson; 2, F. Kelly.

Second speed-judging.—1, G. Harris; 2, F. Mitchell.

Third speed-judging.—1, J. Smith; 2, J. Nurdon.

Petrol consumption trial.—1, J. Nurdon; 2, F. Turner; 3, W. Bennett.

The general meeting will be held on February 3rd.

North Middlesex M.C.C.

The Management Committee met at headquarters on January 3rd, and approved of the fixture list for 1912. Forthcoming events are as follow:

March 16th.—Opening run.
,, 31st.—Non-stop trial (members).
April 5th to 8th.—Inter-team competition with Herts County M.C.C.
,, 21st.—Speed-judging competition.



A fine array of prizes presented at the Birmingham M.C.C. ninth annual dinner.

THE YEAR'S IMPORTS AND EXPORTS.

BELOW we give tabulated figures comparing the imports and exports of motor cycles and parts for the last three years.

Imports of Motor Cycles and Parts Thereof.

	QUANTITIES.			VALUE.		
	1909.	1910.	1911.	1909.	1910.	1911.
Month ended Dec. 31 ..	89	47	77	£5,230	£4,689	£5,818
Year ended Dec. 31 ..	1,442	1,387	1,351	£70,452	£99,284	£107,797

British Exports.

	QUANTITIES.			VALUE.		
	1909.	1910.	1911.	1909.	1910.	1911.
Month ended Dec. 31 ..	317	455	876	£16,962	£17,596	£46,506
Year ended Dec. 31 ..	1,884	3,341	7,357	£105,435	£160,476	£358,847

The enormous increase in the value of British-made exported motor cycles and parts commands attention, the 1911 figures reaching £358,847. This total is considerably more than double that of last year, and over three times as great as in 1909, while the figures for the month ended December 31st show that the demand for British motor cycles is still steadily on the rise.

The motor cycle industry is rapidly becoming an important factor in British trade, and from the Board of Trade returns one cannot doubt the fact that British motor cycles have a firm grip of the market abroad and in the colonies.

A study of the import figures shows that there is an increase in the value of imported motor cycles and parts of £8,513, which comparatively small increase is largely accounted for by imported engines chiefly of the lightweight variety, for which there has recently been a large demand.

ENGLISH-DUTCH RELIABILITY TRIAL.

Thirty-two Nominations for the British Team.

THERE are now more than sufficient entries for both teams in the International Trial to be held in Holland on August Bank Holiday, and it is already apparent that the task of selecting the best team—six amateurs and six trade men—to represent this country will be a difficult one. A glance at the names in the trade team will at once show that England will not be lacking in strength in this department at any rate; in fact, it would be a good team indeed that could beat the trade representatives already nominated.

As a number of entries must be declined, in order that those who are not chosen may take part in other events during the August holiday, the selection of the teams will commence early, and at the latest the names of the teams' representatives will be known by June 30th. A committee will shortly be formed to decide upon the best scheme to select the British team.



G. H. Mansell, sales manager of the Singer Co., astride a new 4 h.p. two-speed chain-driven Singer, the transmission of which is entirely enclosed. The casing is divided horizontally just above the chain centre, and vertically through the centre of the front sprocket. The device is interesting in view of recent correspondence on the subject in our columns.

A Suggestion to Extend the Trial.

The following suggestion has reached us, and we commend it to the consideration of the organising club —the Dutch M.C.C. : "In your issue dated 28th ult. you state that Mr. Citroen expects to collect together at least sixty motor cyclists. Now why not have two teams, and at the same time make it an International Open Trial? There are a great many people like myself who would very much like to go over and ride, but who will not by any chance be chosen to form one of the team.—REX G. MUNDY."

AMATEUR TEAM TO BE CHOSEN FROM	TRADE TEAM TO BE CHOSEN FROM
W. Cooper (3½ Bradbury)	W. Pratt (3½ P. and M.)
Geoffrey Smith	J. Woodhouse (3½ Precision)
F. C. Wasley	F. W. Barnes (6 Zenith)
L. A. Baddeley (7 Indian)	W. W. Douglas (2¾ Douglas)
Vernon Taylor (3½ Rudge)	W. F. Newsome (3½ Triumph)
Seymour Smith (3½ Norton)	Hugh Gibson (3½ two-speed Bradbury)
Fred Dover (3½ Premier)	R. Holloway (2½ Premier)
A. E. Uffleman (3½ Humber)	Sam Wright (2¾ Humber)
J. C. Bennett Mitchell (2¾ Douglas)	W. H. Wells (7 Indian sc.)
Mrs. Cooke (3½ Triumph)	Frank Smith (5-6 Clyno sc.)
C. C. Cooke (3½ Triumph).	H. V. Colver (2¾ two-speed Enfield)
F. A. Hardy	R. G. Mundy
W. O. Oldman (5-6 Bat sc. or 4 Bat bicycle)	R. Lord (6 Rex sidette)
C. W. Wilson (Morgan runabout)	Roy W. Walker (3½ New Hudson)
Gordon B. McKechnie (1912 8 Dot-Jap)	H. Graham Dixon (2¾ New Hudson)
H. M. Carter (2¾ two-speed Douglas)	
Horatio Wallis (1912 f.e. Triumph)	

A number of the amateurs are anxious to witness the trial, whether chosen or not.

Mr. McKechnie says: "Should my competition experience be considered insufficient to entitle me to a place in the team, I will be pleased to accompany the English party."



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Hill-climbing.

Sir,—In your last issue a correspondent suggests that Honister is quite impossible for any motor vehicle. I know the hill very well, and I certainly thought so, but it has been climbed by a 35 h.p. chain-driven Daimler. This car had previously ascended Buttermere Hause (Keswick side), which is also very bad. G. F. WOODHOUSE.

Sir,—"Fair Play" considers Honister Pass an impossible climb for any motor vehicle. I have myself seen a small car—I do not know the make or power—climb the pass, from the Buttermere side, apparently without much difficulty. The surface makes it, I think, impossible for a single tracker, but with a sidecar, four-speed gear, and 5 h.p., there should be little difficulty. The gradient is, I think, not more than 1 in 4. I have helped a two-speed Humber over the pass, and it had enough power, but when stopped by the bad surface could not restart on the clutch without a push off.

Mr. Smith might find it better to fit the sidecar on the right-hand side, the left-hand side of the road (which is very narrow) being the firmer. The right-hand side is cut up by the skid-pans of descending coaches. I have only seen the pass in summer, and know nothing of its condition in winter.

P. A. LEWIS, 2ND LT., R.E.

Sir,—"Fairplay in All Things" objects to Honister Pass as "impossible for any motor vehicle," and characterises my suggestion to Mr. Frank Smith as not quite "sporting."

My reasons for suggesting the route were as follows: That three motor cyclists at least have so far succeeded as to be only waiting for another opportunity; that two other well-known competition riders will also shortly essay the climb; that it is descended daily during the season by coaches and motors of all kinds; indeed, I have personally ridden down both on a lightweight and a 3½ h.p. with sidecar. I was also informed at the Buttermere Hotel that a 14 h.p. car had reached the top.

To suggest any ordinary pimple for the Clyno fresh from the Porlock victory would have been absurd, and as Mr. F. Smith is sighing for other hills to conquer, I think Honister presents an opportunity for him to immortalise himself.

The readers of *The Motor Cycle* will be able to judge whether your correspondent has chosen the wrong *nom de plume*. H. NEWMAN.

The Winter Trials Results.

Sir,—Now that the winter trials are over, it would be interesting to know how many machines went through both the Exeter and Gloucester runs successfully without a repair of any sort. Personally, I noticed one or two riders in the Gloucester run who were riding different machines from those they used in the Exeter run. Were they afraid to take the same machine over both trials because there was not enough time in between to do the tinkering? One would almost think some firms would offer a special prize for the best performance of a machine ridden in both trials. Any machine winning these prizes would be much more likely to sell to the man who watches the results of the trials from a buyer's point of view, and, after all, manufacturers would not send their riders if successful results did not help their sales.

H. C. MILLS,
Capt. North Middlesex M.C.C.

Lamps and Winter Riding.

Sir,—I think perhaps Mr. Harold Brodrick would have left his letter, which appeared in your issue of December 7th, unwritten had he made himself more familiar with the subject on which he touched before giving "a word of warning" as to my second "suggestion."

I have been in communication with a firm of chemists in regard to the use of peroxide of hydrogen, and they inform me that it would have no ill effect "on metal of any kind," especially in the diluted form mentioned.

It would hardly be supposed that an article that is used internally with equal parts of water would injure metal.

Virginia, U.S.A. FRANCIS C. TURNER.

Where to Renew Local Taxation Licences.

Sir,—Recently I received the usual motor licence form from Oakham, but at the top is printed the following in red:

"Notice.—In order to relieve the county rates you are specially requested to take out your licences only at a money order office in the county of Rutland."

I was under the impression that motor licences went to the Road Board for the improvement of the roads throughout the United Kingdom, in which case the use of them for relieving the county rates is illegal. If this be true, publicity should be given to the fact, and all Rutland motorists should be warned to take out their licences elsewhere, especially as the roads of the county are kept very badly, the loose metal never being rolled in, except just in the two towns of Oakham and Uppingham. One at least of the local magistrates is a most intolerant anti-motorist. RUTLANDSHIRE.

[Our correspondent may rely upon it that Rutlandshire is not diverting, or able to divert, any of its motor licence fees from the Road Board. As the whole question of motor licences and establishment licences generally is somewhat difficult to follow, we will attempt to explain it. First of all, the motor licences go to the Road Board, but the county which collects them has a commission to recoup it for collection expenses. For collection expenses a certain sum is set aside by the taxation authorities, and if one county were able to persuade all motorists to pay their licences into it, it would have the whole of it, as it is shared out among the counties *pro rata*, according to their receipts, so that the county or county borough which collects most licences gets most commission. Prior to the passing of the Finance Act, 1910, each county into which a motor licence was paid retained the whole of the money, and the sum total of the revenue so derived was £155,000. In order that the county and borough councils should not lose this revenue it is still paid to them in the same proportion as they were receiving when the Finance Bill was passed. This means that all the motor licence money, with the exception of the commission for collection and the £155,000 referred to, goes to the Road Board for that body to distribute to the road authorities for road improvement. As to the other establishment licences, such as those for dogs, guns, game, armorial bearings, and men servants, these are still retained *in toto* by the county collecting them. To say the least of it, arrangements of this sort are very complex, and have been mainly brought about by the premature passage of the new regulations regarding motor taxation. These ought to have been held over till the whole question of local taxation was gone into by Parliament. It is a subject into which investigation and rearrangement have been promised for a number of years, but nothing has so far been done to simplify the present complicated state of affairs. —ED.]

Sir,—I was very pleased to learn that Mr. Philip S. White is in agreement regarding the penalising of unclean counties, but up to the present fail to see his point as to London being placed on a different footing.

I am, of course, fully aware of the fact that the Metropolitan police force is practically a Government institution, but the view of myself and my friends interested in this movement is that, control by county or control by Government—it matters not—the fact remains that London had twenty-three police traps in 1910, and when we have induced the bulk of London men to give this matter their sympathy and practical support by payment in clean counties, it is for the London County Council to make representations to the Government regarding the loss of revenue.

I was shown an almost pathetic letter from the Essex County Council last week addressed to motorists in general, complaining that £2,000 were lost to the county funds by residents in the said county taking out their local taxation licences in other districts during the past year.

Now this is an excellent start, and encourages one to proceed with the agitation until a remedy is offered by the withdrawal of these very mean and contemptible practices.

In thanking Mr. A. B. Bennett for his practical support, I wish to say that I do not think the postal authorities undertake to forward receipts, and that the method of procedure in the North Middlesex Motor Cycling Club is as follows: Postal orders for the amounts to be paid are sent to the postmaster of the county town of one of the various counties, together with a stamped addressed envelope for the return of the receipt, and generally accompanied by a short note stating the reason the payment is made in this way.

Then some of the members also write to the Clerk of the County Council in the county in which they reside detailing their reasons for making payment elsewhere.

W. H. BROWNE
(Chairman North Middlesex M.C.C.)

Sir,—I append a copy of a communication which I have addressed to the authorities, which will explain itself, and which may be a hint to your other readers to do likewise should they feel justified.

The present is an opportune time to vent this matter.

C.M.

[Copy.]

Birkenhead.
January 2nd, 1912.

To the Clerk to
Cheshire County Council.

Dear Sir,—I have just received a notice for the renewal of local taxation licences, enclosed with which is a circular with the request "that it is to the advantage of the county rate if these licences are obtained within the administrative county."

This is a request to pay my motor licence within this county (Cheshire), but since this county is not a clean one—police traps and methods being objectionable—I have decided to renew said licences, also that for my dog, in a county where no such un-English practices take place. I shall be glad to take these licences out in this county when the above methods are stopped. I am not a ratepayer, though residing in the county.

Multi-pole Sparking Plugs.

Sir,—To "One of the Seekers," and every other seeker after knowledge on this subject, we are glad to have the opportunity of replying with reference to the points raised in the letter in last week's issue.

It would really not be sufficiently convincing for us (the makers of the Lodge double-pole plug) to state, however definitely, that every ordinarily good magneto did not suffer any strain whatever by firing at two sparking plugs in series. . . . We would, however, respectfully suggest that would-be users of double-pole plugs be not too timorous, and not take the magneto vendors' statements on this subject too seriously. . . .

But really we would very much like readers of *The Motor Cycle* to feel happy and comfortable about using double-pole plugs on their machines—whatever magneto machines they may be using—as they do make such an improvement in the engine power, and the only way we can help them in this way is to ask some of the many motor cyclists who are using both Bosch magneto and Lodge double-pole plugs on their machines, if they would be so very kind as to state briefly in these columns if they have ever experienced any ill effects to their magnetos through the use of the double-pole plugs, or if all is well and satisfactory. We are sure that the trouble taken in so writing will be more than made up for by the value of the information and the benefits it should bring to other motor cyclists.

LODGE BROS. AND CO.

Licence for Sidecar.

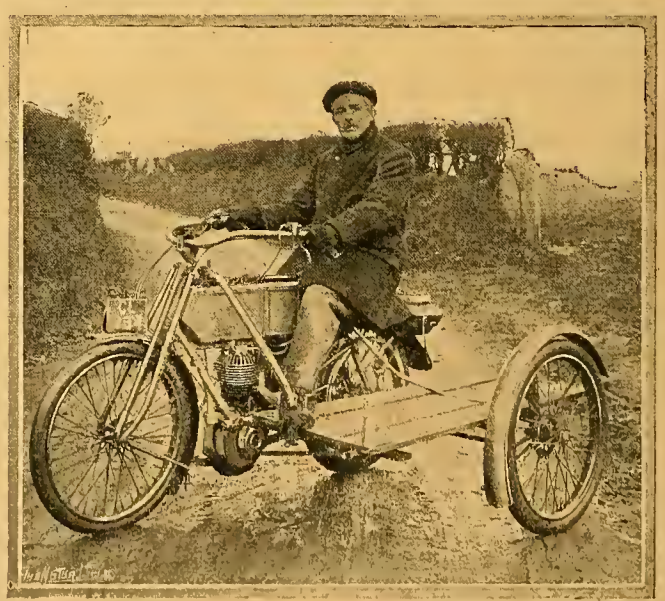
Sir,—Having noticed the question of "Sidecar, Peckham," in your issue of December 21st, whether a separate licence is necessary for a sidecar, and your reply thereto, I applied to the chief constable in Manchester for the return of the 7s. 6d. which I paid last October. I have much pleasure in informing you that this was returned the very next day after inspection of my machine. M.O.

Waterproof Motor Cycle Clothing.

Sir,—We quite agree with the Dunlop Rubber Co. that if your readers, when purchasing their garments, would study quality before price, they would be well rewarded. The whole trouble arises from the fact that a large number of "imitation" waterproof suits are being put on the market. If people will only see when purchasing these garments that there is a trade mark of a reliable firm, they can easily fall back on the manufacturers in the event of the suit not fulfilling the purpose for which it is intended. There is one other point that motor cyclists should consider, and that is, when they are putting on or taking off their overalls, to do so with a little care, and they will soon see the benefit. Oilskins are, in our opinion, no use for motor cycling generally, as they are most uncomfortable. EXPRESS RUBBER CO., LTD.

The Motor Cycle for Postal Work.

Sir,—Having seen in a recent issue of *The Motor Cycle* a photograph of the sidecar being used by the Coventry Post Office authorities, I should like to say that a motor cycle and sidecar is easily capable of doing good work in the post office service. I have given an old 3½ h.p. Minerva and sidecar, with body removed, a good test this Christmas, doing all the extra service here (Aldborough, Norwich), carrying over a hundredweight of parcels three journeys a day, and covering thirty miles a day over very bad roads in all sorts of weather. One journey each day was to take all the mid-day mails to a station, six miles distant, and I saved about two hours each time, and, through using a motor, the outside letters and parcels were despatched by the mid-day mail, which would have been impossible had horses been used. Other years three horses were used to do the same work. J. W. FISH.



The postal sidecar referred to by J. W. Fish.

"Stealing" Water for the Lamp Generator.

Sir,—Will you be kind enough to warn those of your readers who are not aware already of the following fact, namely, that it is illegal to "steal" water from the drinking troughs for horses when a policeman who has not much to do is near?

I was filling my generator the other night from one of these troughs, ladling the water with my hand, mind you, into a paper funnel, when one of these "unemployed ones" informed me that he would have to prosecute me for stealing water. I thought he was joking, but he pressed the case, and reminded me of the way the motor 'bus drivers polluted the water with their oily cans. I granted that this was a disgraceful trick, and pointed out the way I was proceeding, but he said this would make no difference. At last I reminded the man in blue that he would be laughed at in any police court when the matter was explained, whereupon he decided to say no more about it "this time." Permit me to wish your excellent, never-missed paper every success in the New Year.

FRED A. TRIGG.

Lubrication Systems.

Sir,—Referring to the recent articles and correspondence on motor cycle lubrication and the mention of our regulated drip-feed attachment, we should be glad if you will insert this letter, emphasising the fact therein unmentioned, that our pump is protected by several patents. The numbers of same are 15481/09, 17295/11, and 14909/11.

In the original form of our patented drip-feed lubricator, the feed is regulated by observing the movement of the pump handle only. Its principle is the same as in the present type illustrated and commented on in your article on page 1394, December 21st, but the addition of a visible drip has greatly increased its popularity. We also make this pump for use outside the tank.

We may say that the Douglas lubricator is made under our master patent No. 15481/09, and that proceedings for infringement are pending in the case of another pump.

BEST AND LLOYD, LTD.

The Evolution of Transmission.

Sir,—"H.T.M.,M.D." in your issue of December 28th says: "'Criticus the Second' is condemned out of his own mouth. Why should his engine seize and so throw him over the handle-bars?"

One morning during the past summer, after riding about fifteen miles, I had occasion to make a call lasting some twenty minutes, and on again attempting to start the machine found I could only move it by skidding the back tyre. Investigation showed that a large irregular segment was missing from the lower end of the piston—bottom of crank case held several fragments of metal of varying size—and one piece, about the size and shape of a postage stamp, had become wedged between the connecting rod and one of the flywheels, thus effectually jamming the engine.

I congratulated myself, first, that the mischance did not occur while driving, and, secondly, and chiefly, that my transmission was by belt.

See "Ixion's" "Comments" in same issue.

BEN CORRY.

Sir,—"Ixion's" comments on shaft drive leave me with the impression that he has not said as much for this form of transmission as it deserves.

His reason for thinking that shaft drive will not become general on motor cycles for a long time, viz., that its first cost is so high, is absolutely sound, and probably the only real objection to this form of drive.

The pulley, belt, and belt rim, which has helped so much in the development of the motor cycle, still beloved of many, and justly so by manufacturers, is a delightfully simple and inexpensive substitute for (1) a really good clutch, (2) sundry universal joints, (3) cardan-shaft, (4) bevel or worm gear, and, to make a good job of it, (5) a change speed gear box. All of which must be well made, of the best possible material, and carefully designed, and all of which are necessary if shaft drive is to give its full benefits.

The objection to shaft drive on the ground of danger in the event of a seized engine, and the graver objection on the score of harsh and jerky drive, appear to me groundless. They are equally shared by chain drive, which is as rigid as shaft, and they are both overcome by the use of a good clutch, which we most of us know from experience of shaft-driven cars and chain-driven motor cycles is capable of giving as smooth a drive as any belt.

We have now most types of motor cycle engines transmitting power by chain perfectly smoothly, and very large single-cylinder engines doing the same thing with shaft drive on cars. Multi-cylinder engines are, of course, smoother in action than singles, but, given a good clutch, shaft, chain or belt will transmit the power equally smoothly.

If this point is conceded, shaft drive possesses in practice the advantages which "Ixion" admits for it on paper: (1) Shaft drive, properly made, requires no attention beyond oiling over a mileage running into tens of thousands, and costs nothing in upkeep all this time; (2) it is really weather-proof; (3) it makes it possible to mudguard the machine easily and cheaply without making it unsightly or inaccessible, so as to render it absolutely clean to ride on the muddiest day.

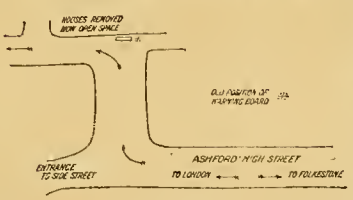
Anyone who uses a motor cycle every day of the year must learn in time what these advantages are worth. I think he must eventually create an important market, and manufacturers will then begin to consider his needs. I believe that shaft drive is really more necessary for comfort in bad weather on a motor cycle than it is on a car, owing to the greater difficulties of protecting the transmission, and that eventually belt drive will only survive on the cheaper machines.

I am a country doctor in a district served by bad roads, and for the last seven years have kept one or more motor cycles and a pony and cart. When I used belt drive, the pony had regular work in winter; since adopting shaft drive I have only used the pony six times in two years—in times of snow and floods. I might sell that pony and credit it to shaft drive. During these two years the transmission system has required no attention whatever, and running expenses per mile have been lower than before.

F.C.J.

Dangerous Corner at Ashford.

Sir,—I enclose a sketch plan (not to scale) of an exceedingly bad danger spot in front of my premises at Ashford.



You will notice that vehicles going towards London on reaching this spot would naturally proceed straight ahead, to the great danger of other traffic approaching from the opposite direction, straight ahead being merely an entrance to a side street leading to nowhere in particular. The large red warning board has been removed.

R 7474.

Waterproof Motor Cycle Clothing.

Sir,—The correspondence under the above heading makes claims for "rubber-proofed" material that, as a reader, I cannot pass without protest. It is claimed for this material that "it will keep out a pouring rain for days, and will be as waterproof at the end of six months as when it was bought, provided that it has had moderate care."

I ride daily, for business purposes, and I know that this material does not satisfy the above claims. As an instance, I have just returned from a thirty-five minutes' (not miles) ride in the rain, and my rubber-proofed coat has let a deal of water through at the junction of the sleeve and the front yokes, necessitating a change of clothing. This is the usual occurrence if I am out in a sharp shower, and the coat is not yet six months old.

It is my contention that this material does not remain waterproof where it meets with any wear, and I know that this opinion is endorsed by practically all my riding friends. I have tried this material from time to time, but have always returned to oilskins as the best wet weather, and leather as the best all-weather motor cycle clothing. Personally, I do not mind the "sea-dog" appearance if I can keep dry.

B.W.B.

Questions & Replies

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply.

Charging Accumulators with an Alternating Current.

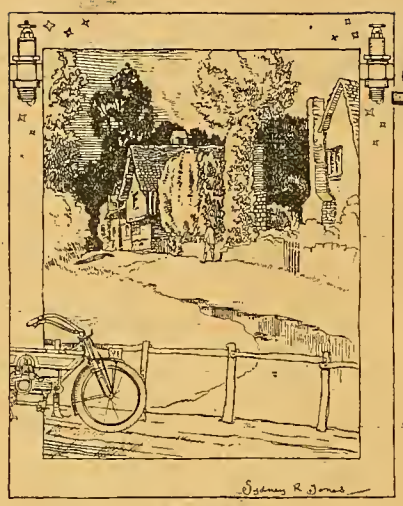
Could you inform me of the best means of charging accumulators from alternating current mains, 105 volts.—F.N.

The current must be transformed to a continuous current, and for this purpose a device is sold by Messrs. A. W. Gamage, Ltd., Holborn, E.C. It is known as the "Union Rectifier."

Twin v. Two-speed Single.

I am investing in a motor cycle and sidecar, but I am in a fix as to which type of motor to buy. I only contemplate using it for week-end runs. I might mention that I am a novice, but have a good knowledge of the workings of a motor cycle. (1.) Would you advise a 3½ h.p. two-speed, or a 5 h.p. twin, single gear, free engine? I do not wish to spend more than £25 to £30, and it appears that 5 h.p. twins are cheaper than 3½ h.p. two-speeders. (2.) I see 5 h.p. 1910 twins for sale at about £28. Would these machines be in good working order after this amount of wear, or would they require a good sum spent in replacements? (3.) Would a two-speed gear, such as a Roc or N.S.U., on a 1910 machine give good service after this amount of wear? (4.) Does a twin require a great deal more mechanical knowledge than a single, and are twins suitable for a novice to start with? (5.) Can a twin with free engine clutch be started from standstill, or must it be used as a running mount?—E.F.

(1.) Of course, the ideal combination is a 5 h.p. with two-speed, and a 5 h.p. with free engine can be purchased for but a little less than a 5 h.p. two-speed. A two-speed gear would be of inestimable value to you, as you live in London. (2.) With regard to your remarks about the 5 h.p. second-hand machine, this entirely depends upon the condition the one you desire to buy is in, and we should not advise you to purchase unless the machine is subjected to a careful expert examination. (3.) Either of the two-speed gears referred to would give good results, provided, of course, they are not too much worn. Probably it would be better to apply to the various makers and see what they have in the way of second-hand machines in stock, as usually the makers overhaul a machine carefully before selling it. (4.) A twin does not necessarily require more mechanical knowledge than a single, but it is a little more trouble to keep up to the mark. A single is much better for a novice to start with. (5.) Yes, if the clutch is carefully used, but much depends on the gear ratio and gradient.



The Roads in Natal.

I am going out to Natal very shortly, and I should be obliged if you could inform me whether the roads outside the towns are at all suitable for motor cycling, and how the duty on imported motor cycles is assessed, *i.e.*, is it the same for new or old motor cycles, as I am undecided whether to take out my 1910 Douglas or get a new machine?—J.B.

There are many motor cyclists in Natal, though the roads are not good for motor cycling in the opinion of the average English rider. Certainly we think it would be worth your while taking the machine out. We believe the duty is reckoned on the second-hand wholesale value of the machine. The fact that it is of British manufacture entitles you to a preferential duty of 12%, the usual duty being 15%.

Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Fitting a Magneto Switch.

I shall be much obliged if you will kindly inform me which is the proper way to attach a switch for cutting out magneto on a motor cycle.—C.J.M.

Fix the switch on the handle-bar, connect the terminal on the switch to the terminal above the contact-breaker on the magneto, which is specially designed for this purpose. When the switch is connected up so that the current goes to earth through the handle-bar, the magneto is put out of action.

Automobile Law.

Can you please inform me where to purchase a book giving the regulations respecting motor licences, etc., showing on what motors trade identification marks can be used, also prices of the tax for business and hire purposes? I have enquired of our local offices and have been told a book can be purchased for a few pence showing the above, and I have tried at the bookstalls but cannot get it.—E.E.C.

The book in question is "Automobile Law Simply Explained," obtainable from these offices price 7d. post free.



LADY MOTOR CYCLISTS IN AMERICA.

There are quite a number of ladies who ride motor cycles in and around Milwaukee, Wisconsin. The Harley-Davidson machine—a local make which we illustrate—is the one most generally chosen, on account of its low build and easy starting engine.

Hertford to Clevedon (Somerset).

I should be greatly obliged if you could advise me on the best route to Clevedon, Somerset, especially if one can miss Bath and Lansdowne without making the journey very much longer; also the best way to avoid tramlines.—A.H.G.

We should recommend the following route: Hertford, Hatfield, St. Albans, Watford, Rickmansworth, Denham, Uxbridge, Colnbrook, Slough, Maidenhead, Reading, Hungerford, Marlborough, Devizes, Melksham, Bradford, Radstock, Compton-Martin, Sandford, Congresbury, to Clevedon.

Registration.

I have purchased from a dealer a 1908 Triumph, the registration number of which I have had transferred to my name. The previous owner has purchased a 1911 Triumph, and is using the 1908 number on the new machine. I am informed by the dealer that I have no right to the number, and that the other man has a perfect right to do as he pleases with the number, and that if he purchased a 1912 or 1913 Triumph he could still use the same number. If that is right, why did the authorities transfer the number to my name?—G.D.

The owner had the power to cancel the registration of his machine if he liked. If, however, he sold the machine without cancelling the number, the authorities had a perfect right to transfer this number to you on your paying the shilling fee. On the other hand, the other man has no right to use the number for a new machine unless he has the authorities' permission. In the case of a machine being sold, both purchaser and vendor should inform the authorities of the change of ownership; unless the vendor gives instructions to the contrary the number goes with the machine.

How to Solder Aluminium.

I shall be glad if you will tell me how to solder aluminium and whether it is possible to join aluminium to brass, copper, and tin with solder.—R.H.J.

It is quite possible to join either brass or copper to aluminium with S.A.L. solder. In the case of copper, it must be cleaned with emery paper and tinned with the solder. In the case of brass, this is first tinned with ordinary tinman's solder and the usual flux. Any flux used is then carefully washed off, and the aluminium to be joined is then tinned with S.A.L. solder and the two joints sweated together.

Macclesfield to Woolwich.

Could you let me know the best route to take from Macclesfield to Woolwich? I want to miss the London traffic. My cycle is a 2 h.p. Humber 1911 machine.—E.S.S.

Your best route would be as follows: Macclesfield, Leek, Ashbourne, Derby, Loughborough, Leicester, Kettering, Higham Ferrers, Bedford, Hitchin, Hertford, Ware, Waltham Cross, straight on till you get to Upper Edmonton, where turn right and go through Chingford to Woodford. Go straight on through Woodford, taking the left-hand fork at the first important road you come to, continue through Snaresbrook. When you are there, ask the best way on to Wanstead Flats, and go straight over these. When you get to Manor Park, turn first to the right and then to the left, passing near East Ham Station. Go straight on till you reach Woolwich Ferry. This avoids as much of the traffic as possible. We do not say that you will not meet some traffic, but you do not have to traverse the heart of London.

EXPERIENCES WANTED

C.C. (Hove).—Two-speed Douglas and sidecar. Is the frame strong enough?

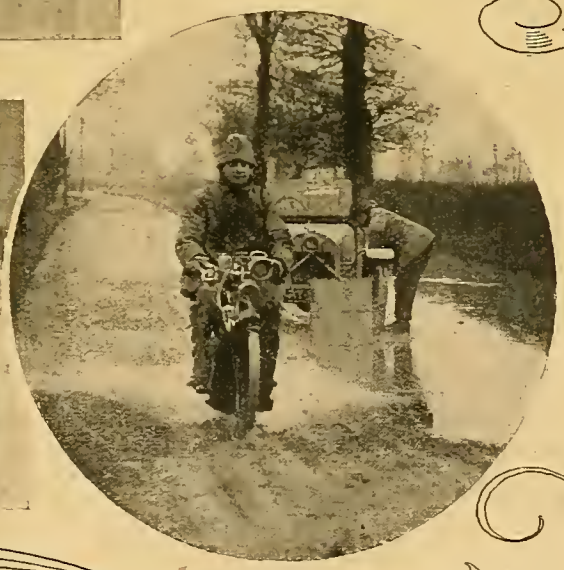
H.T. (Edmonton).—5-6 h.p. Clyno and sidecar.

R.W.M. (Whalley, Lancs.)—3½ h.p. New Hudson, Rover, and Singer.

If C. E. Brownlow will send his correct address and note the rules at the head of this feature, his query will receive attention.







LONDON-EXETER-LONDON WINTER RUN. SCENES EN ROUTE.

(1) Cyril Patteson (Zenith sidecar) with George King as passenger passing through Chard.

(2) G. Stevens (5 h.p. A.J.S.-Canoelet) on arrival at Salisbury on the return journey. (3) Eli Clark at the water splash between Shaftesbury and Sherborne. He was one of the seven Douglas riders to obtain the maximum award.

A Sidecar Storm Apron.

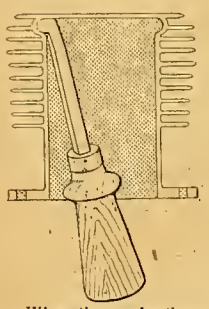
H. Taylor and Co., 21a, Store Street, Tottenham Court Road, W., are marketing an excellent detachable sidecar storm apron. It is fitted with straps at the bottom to fasten over the footboard, and has a cape with glove button fastenings, which clips on to the apron and covers the passenger entirely up to the neck.

Lamps in the Exeter Run.

The makers of the F.R.S. lamp set, S. Hall and Sons, Wrottesley Street, Birmingham, are naturally jubilant over their success in the M.C.C. winter run. They inform us that 30% of the riders used their lamps, and that out of that proportion twenty-four riders relied on one lamp only of their make.

The T.T. Race Fund.

Louis C. Cuffe, Manager of the Car Supply Company, Coventry House, 6, Coventry Street, W., who is an enthusiastic motor cyclist, informs us that in the case of any motor cycle purchased through his company, should the purchaser wish to help the T.T. Race Fund, Mr. Cuffe will pay £1 towards the fund. The same arrangement applies to speedometers and sidecars, in which case ten per cent. of the profits received would also be given to the fund. It is interesting to note that several members of the trade are opposed to this sporting event being suppressed.



When the combustion chamber is recessed it is difficult completely to remove the carbon deposit with an ordinary screwdriver. Mr. J. Lucas, Rainhill, Lancs., has devised a tool for the purpose which we illustrate.

Diary of Running Costs.

We are in receipt of a neat little publication entitled "My Car," produced by the Stern Sonneborn Oil Co., Ltd., Royal London House, Finsbury Square, E.C. Despite its title, the book is as useful to motor cyclists as autocarists, as it consists mainly of ruled pages allowing the amount of petrol and oil consumed each week to be recorded, forming a useful record of the running expenses either weekly, quarterly, or annually. Other pages are devoted to a summary of expenditure for the year, foreign dictionary, spare spaces for remarks, postal information, and a calendar for 1912.

Changes of Address.

In order to cope with their greatly increased business, the "Clincher" tyre sales organisation of the North British Rubber Co. have found it necessary to move from their present headquarters to 167-169, Great Portland Street, W., where an adequate structure has been erected for them. It is expected that the building, which will be known as "Clincher House," will be completed and occupied within the next few weeks.

The Hanover Rubber Co. have also found it necessary to secure larger and more convenient premises at 17, Goswell Road, Aldersgate, E.C.



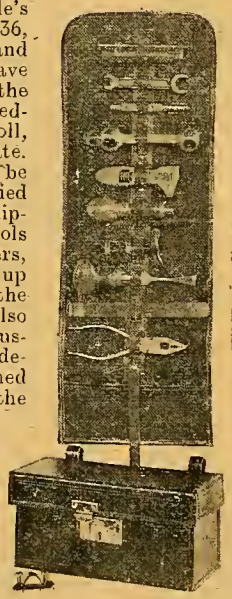
Magneto Branch in Coventry.

The Simms Magneto Co., Ltd., have opened a branch in St. Mary Street, Coventry. In addition to keeping a large stock of Simms magnetos and plugs, a trained staff of mechanics will be located at the above address ready to execute repairs to any type or make of magneto within twenty-four hours.

A Serviceable Tool Roll.

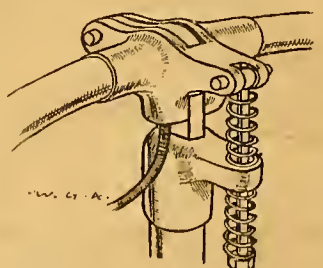
Messrs. Maude's Motor Mart, 136, Great Portland Street, W., have lately placed on the market an exceedingly useful tool-roll, which we illustrate. The roll, it will be noticed, is supplied with a full equipment of good tools by the best makers, and when rolled up fits neatly into the toolbag, which also appears in the illustration, and is designed to be attached to the side of the luggage-carrier.

A tool-roll of stout material is an excellent method of preventing damage to those tools indispensable to the motor cyclist's kit.



Six Thousand Pairs of Hands.

The rubber trade employs vast numbers of workpeople, and by an amalgamation recently effected in Clermont-Ferrand, the home of the French tyre trade, one factory alone will employ about six thousand pairs of hands in the manufacture, among other articles, of Gaulois tyres. These tyres are made by Messrs. Bergougnan (who have just absorbed another tyre and rubber firm), and sold in this country by the Gaulois Tyre Co.



A new design spring handle-bar patented by Scott (Birmingham).

Repairs and Renewals.

The Hubbard Tyre and Motor Co., Wharf Buildings, High Road, Ilford, which has hitherto confined its attention to tyre repairs, has now completed arrangements to deal promptly and thoroughly with every kind of motor cycle construction and repair work, and a speciality will be made of manufacturing fittings and parts to customers' own designs.

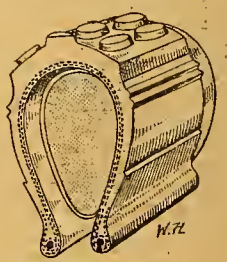
Catalogues Received.

We are in receipt of the latest Calthorpe catalogue, which is well got up and lists the various models made by this firm. The chief Calthorpe features, such as the foot starting arrangement, two-speed gear and free engine, and the principal Calthorpe models for 1912 are fully dealt with.

The catalogue just issued by R. Broadhurst, 25, Smithford Street, Coventry, lists all the best known motor cycle accessories, such as tool bags, sparking plugs, horns, lamps (of which a speciality is made), tools and belt fasteners.

Rubber-studded Covers.

The efficiency of circular rubber studs as a preventive of side-slip has long been agreed upon by practical riders. The Continental Tyre and Rubber Co. have introduced such a pattern of cover of late which appears to be rapidly gaining in popularity. It is not intended that this cover should supersede the basket tread or combination non-skids, but act as a further alternative to a fine range.

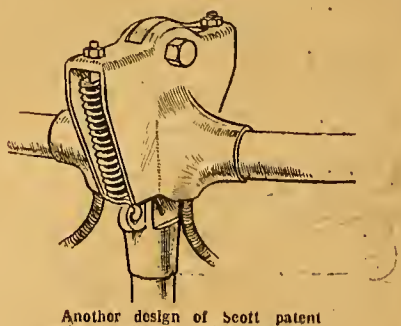


Continental rubber studded motor cycle tyre.

The Continental grooved rubber belt is likely to be heard more of in the future.

New Premises.

Nye and Co. are moving into new premises at 16, Hampstead Road, Tottenham Court Road, W. A special feature will be a showroom for accessories only, with a lounge and waiting room for the convenience of customers. There will be a night attendant, who will look after any belated motor cyclists who are in need of assistance. H. B. Willoughby, a southern motor cyclist, has joined the firm as partner.



Another design of Scott patent spring handle-bar, which is claimed to be as effective in absorbing vibration as a spring fork.

1912 CONTRACTS—

of these we hold the largest in the world we believe, and certainly of the best class, comprising such as P. & M., Scott, Zenith, Jap, Bat, Matchless, Clyno, Humber, Douglas, Premier, Bradbury, A.C. and Morgans, and we can also supply Rudge, Hobart, B.S.A., and any other good class machine. In placing your order see that the firm you propose giving it to is one **able to deliver early** as you don't want a machine when everyone else has got one. We have delivery of the above machines each week and can contract for a fixed date if booked; then being **in** the business and **not just opening, we have a sale for second-hand machines,** therefore can give you a good allowance for your old mount. **Note, we don't** offer you a price and on receipt reduce that price from £10 to £20 as many firms are now doing. This is trying to obtain your order under false pretences and a trick we have not and will not indulge in whether we gety our order or not. During the **past three years** we have built up a large business on original lines, and although many new people are starting in the business yet the old-established straightforward firm will stand and be in business when the catch-penny show is no more. Hitchen's know the value of every machine on the market, and if we agree to allow £36, then no one else can allow £46—but often enough when you have sent up your mount they will offer £30—far better to rely on the **old firm** who will give you a written agreement in good class deals to return the motor cycle to you **carriage paid** if a deal cannot be put through. The other firms rely on your letting them have the business in preference to paying return carriage. This in itself is a rotten underhand game, and one you will easily see through, as you must know no firm can give anything away. Another reason why Hitchen's is your firm, and that is, being to the front, they got hold of all the first-class agencies before the others wakened up, and now offer you a bigger assortment **than any other house in the trade,** and as many of these contracts were entered into two years ago you can rest assured **that you get your mount** up to time stated. You, of course, know we are the only firm in the world who send you goods of any kind **on approval** and if you don't like them you are at liberty to **return them within the 3 days** and **have your money back in full.** This applies to everything but new machines. Note the old address, Hitchen's Motor Exchange Co., Ltd., Morecambe, Lancashire. Telephone: 112. Telegrams: "Motor," Morecambe. Canary in full song.

MATCHLESS

"The Passenger Machine"

That takes you out and brings you home again with the speed of an Express Train, and the quietness of a £1,000 car.

6 Weeks' Delivery from date of Order Guaranteed.

ALL Spare Parts in Stock for Engine, Gear, and Machine.

For Immediate Delivery.
1912 8 h.p. Passenger Model.....70 guineas.
1912 6 h.p. T.T. Roadster Model.....54 guineas.

REPAIRS. EXCHANGES.

"The Only Authorised AGENTS"—

The LONDON MATCHLESS MOTOR CYCLE AGENCY
184, Great Portland Street, LONDON, W.

Have YOU Tried THE "STANDARD"?

All Sizes, 1/- each.



COPY OF TESTIMONIAL.

December 21st, 1911.

Dear Sirs,

Just a line to let you know how thoroughly satisfied I am with your belt fasteners. You will, I think, be pleased with the following:—"I used one of your ⅞in. fasteners on my 8 h.p. Matchless J.A.P. in the recent open International Hill-climb in France, and got fastest time of the day at over 62 m.p.h. in the mud." I think your fasteners are made of the right stuff, don't you?

Yours faithfully,
(Signed) HARRY BASHALL.

HERWIN CANNY & CO.,
36, William St., WOOLWICH.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are or sale in their immediate neighbourhood before going urther afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION IX
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.



CHOOSE FROM THE BEST

Selection of the most renowned makes of Motor Cycles at unbeatable prices now on view at

WAUGHOPE'S

THE ONLY MOTOR EXCHANGE IN THE HEART OF THE CITY.

ASK FOR TO-DAY'S LIST, which INCLUDES

	H.P.		£	s.
4798.	3½	1911 F.E. **Triumph**	45	0
4799.	3½	1909 **Triumph**	30	0
4811.	5-6	1910 4-cyl. **F.N.**	30	0
4812.	2¾	1909 **Douglas**	25	0
4813.	5-6	1911 4-cyl. **F.N.** and sidecar	40	0
4815.	3½	1911 Free Engine **Triumph**	46	10
4816.	3½	1911 **P. & M.**	50	0
4817.	3½	1911 2-speed **Humber**	37	10
4819.	1½	**Motosacoche**	10	10
4894.	3½	**Rex**	10	0
4229.	8	1910 **Bat**	40	0
4760.	5	1908 Twin **Rex de Luxe** and sidecar	28	Gns
4632.	5	1911 Free Engine **Indian**	42	10
4579.	3½	1910 **Scott**	40	Gns.
4748.	2¾	1911 **Douglas**	30	0
4758.	3½	1911 Single-speed **Humber**	30	0
4775.	2¾	1911 2-speed **Enfield**	35	0
4777.	5-6	1910 4-cylinder **F.N.**	30	0
4784.	3½	1911 T.T. **Ariel**	30	0
4786.	4½	1910 Twin **Minerva**	22	10
4792.	5-6	1911 4-cylinder **F.N.**	35	0
4738.	8	1911 **Chater-Lea** No. 7 and coach-built Sidecar	70	gns.
4738.	3½	1909 **P. & M.** and Sidecar	38	gns.
4741.	3½	1910 **Ariel**, variable gear	30	gns.
4742.	3½	1908 **Triumph** and Sidecar	30	0
4745.	2½	1911 3-sp. **New Hudson**	35	0
4734.	3½	1911 2-sp. **Humber**	36	0
4733.	6	1909 2-sp. **Chater-Lea** and Sidecar	40	0
4729.	2¼	1910 **Royal Enfield**	24	0
4730.	2	1910 **Moto-Reve**	21	0
4727.	3½	1911 **Kerry-Abingdon**	32	10
4723.	3½	1908 **Triumph**	27	10
4722.	2¾	1911 **Douglas**	32	10
4720.	3½	1910 2-speed **Humber**	30	0
4719.	2¾	1911 **Douglas**	30	0
4603.	3½	1910 Standard **Triumph**	35	0
4605.	5-6	1910 4-cyl. **F.N.**	25	0
4607.	3½	1911 **Kerry-Abingdon**	32	0
4707.	3½	1910 **Lincoln-Elk**	23	0
4706.	2½	1911 Lady's **Motosacoche**	29	0
4701.	2¾	1909 Twin **N.S.U.**	20	0
4699.	3½	1910 2-speed **Humber**	30	gns.
4692.	4½	1909 4-cyl. **F.N.**	20	0
4689.	3½	1910 Tourist **Rex**	28	10
4686.	3½	1911 **Zenith Gradua**	42	10
4677.	3½	1910 **Bradbury**	30	0
4685.	3½	1911 2-speed **Humber**	37	10
4670.	3½	1911 **Bradbury**	35	0
4420.	3½	1911 F.E. **Premier**	40	gns.
3894.	1½	1910 F.E. **Motosacoche**	22	10
4308.	7	1910 2-speed **V.S.** and Sidecar	40	gns.

We invite you to pay a visit to the greatest display of best 1912 models staged side by side most conveniently for comparison of details and improvements.

SEND PARTICULARS OF YOUR USED MACHINE, AND GET OUR LIBERAL ALLOWANCE OFFER IN PART PAYMENT OF ONE OF THESE NEW MODELS.

9, SHOE LANE,
FLEET ST., LONDON, E.C.

'Phone: 5777 Holborn. Wires: "Opificer, London."

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

1912 Douglas, February delivery.—Ewbank, Castleford.

1912 Clyno, February delivery.—Ewbank, Castleford.

1911 Free Engine Triumph, lamp, horn, cyclometer, tools; sacrifice £40.—A. H. Burnett Ferrybridge.

3½h.p. 1907 N.S.U., 2-speed gear, accumulator, h.b.c.; £12.—Armstrong, Church View, Quebec, Durham.

3½h.p. Ariel, 1911, variable gear, free engine, practically good as new; £40.—O. Hindmarch, 13, Tennant St., Hebburn.

1911 Scott Motor Cycle, new in July, not done 700 miles, like new; £46, a bargain.—Percy Motor Co., Newcastle-on-Tyne.

1912 Lightweight Moto-Reve, not yet delivered from makers; will sacrifice for cash £25/10. — No. 9,277, *The Motor Cycle* Offices, Coventry.

TRIUMPHS, Humbers, B.S.A., Royal Enfield motor cycles, lightweights, 2 speeds, free engines; write, wire, or 'phone for immediate deliveries.—Turvey and Co., The Motor House, Sunderland. Tel.: No. 626.

SECTION II.

York and Lancashire.

GOURLAY, the great Douglas agent.

GOURLAY.—1912 Douglas in stock.

GOURLAY.—Sole Manchester agent, J. W. Gourlay, Fallowfield, Manchester.

1909 Triumph, perfect condition; bargain, £23/10.—Denby and Co., Ilkley.

1908 5h.p. Rex, just enamelled, plated, and re-bushed, perfect; £18.—86, Pargate, Sheffield.

LIVERPOOL Official Agents for Humber and Dot, Henry Whitlock and Co., 40, Hope St.

1911 3½h.p. 2-speed Premier, Cowey speedometer, lamp, horn, spares; £44/10.—Scanlan, jeweller, Preston.

TRIUMPH, 1909, splendid condition, lamp, horn, tools, spares, etc.; £28/10.—Fortune, solicitor, Harrogate.

CLYNOS and Rudge., multi-speeds; deliver March; book now to secure.—Smith, Motor Agent, Horbury.

2¾h.p. New Hudson, 3-speed, almost new, no further use for same; £38.—Briggs, Town Hall, Brighouse.

INDIAN, 1911, free engine, 5h.p., machine and tyres new condition; £45/10.—Chadwick, Cedar St. Blackpool.

1911½ Douglas, Model E., perfect condition, practically unused since October; £40.—13, Westbourne Rd., Birkdale.

1912 MODELS 1912

PREMIERS. CHATER-LEA.
MATCHLESS. CLYNOS.
RUDGES.

Early Deliveries—Best Exchanges.

TRIUMPH, 1909, two speeds £37 10
PHANOMEN, 6 h.p. twin, two speeds.... £35 0
TWIN REX, 6 h.p., accumulator ignition £13 10
REX, 3½ h.p., M.O.V., low built £6 18
MINERVA, Twin 4½ h.p., spring forks.... £16 10
N.S.U., 4 h.p., brand new, single-cylinder, ideal sidecar machine: listed £48 .... £36 0
REX DE LUXE, 5 h.p., twin, two speeds, handle starting, M.O.V., 1911 model .. £48 10
REX DE LUXE, 5 h.p., twin, two speeds, 1910 ..... £42 10
REX, 3½ h.p., spring forks, magneto, h.-b. control, 1909 model £22 10
N.S.U., 4 h.p., single-cylinder, new two months ago..... £28 10
REX, 3½ h.p., 1908, spring forks, magneto, h.-b. control, beautiful condition .. £16 10
N.S.U., 3½ h.p., two speeds, magneto £19 10
N.S.U., 3½ h.p., magneto, good order £16 10
QUADRANT, 3½ h.p., magneto, spring forks £16 10
PREMIER, 3½ h.p., new, 1911 model £38 0
N.S.U., 3½ h.p., M.O.V., magneto £15 10
N.S.U., 3 h.p., M.O.V., nice order £10 0
REX DE LUXE, two speeds, magneto, handle starting, h.-b. control £28 10
ENFIELD, 2½ h.p., M.O.V., acc. ignition £9 10
TRIUMPH, 2½ h.p. £6 10
HOBART, 3 h.p., vertical engine, low £8 10
ROYAL STAR, 2½ h.p., vertical engine .. £5 10
KERRY, 2½ h.p., 26in. wheels, vertical engine £8 10
OLYMPIC, 3½ h.p., vertical engine, 26in. wheels £6 10
PREMIER, 3½ h.p., 1912, three-speed gear £58 0
PREMIER, 2½ h.p., 1912, three-sneed gear £47 5
QUADRANT, 3 h.p., vertical engine..... £5 10

PUSH CYCLES TAKEN IN EXCHANGE.

TRICARS.

TWIN REX, air-cooled, belt drive, Fit-all two-speed gear £14 10
STEVENS 4 h.p., single-cylinder, air-cooled Roc two-speed gear, handle starting £14 10
TWIN REX, 5 h.p., air-cooled £11 10

CARS.

DARRACQ, 9 h.p., two-seater £15 15
EAGLE, 14 h.p., four-cylinder, five-seater, two speeds and reverse £27 10
HUMBER, 5½ h.p., two-seater, bucket seats, two speeds and reverse £13 10
PHŒNIX, 8 h.p., two-cylinders, magneto, hoods, screen, and lamps £58 0

GENUINE MICHELIN TYRES.

	Beaded.	Wired.	Tubes.
26 x 2	17/-	16/6	9/6
26 x 2½	18/6	17/6	9/9
26 x 2½	21/-	18/6	10/-
28 x 2	19/-	17/-	10/-
28 x 2½	19/-		10/6

MICHELIN BUTTED TUBES.

26 x 2	11/6	26 x 2½	11/9	26 x 2½	12/-
28 x 2	12/-	28 x 2½	12/6	28 x 2½	12/6

Carriage Paid. All Guaranteed. Prompt Delivery

MISCELLANEOUS.

New Amac Variable Jet and H.-B. Control 18/6
Ditto Second-hand 12/6
Longuemare, Minerva, F.N. Carburetters 4/6
Good Rigid Sidecar..... 57/6
Millford Castor Wheel Sidecar..... £6 0
Long Handle-bars, dropped ends 5/6 and 6/6
Coronet Silencers, up to 5 h.p..... 3/3 and 4/6
New Handle-bar Mirrors 2/3
Gripskin Be tin : ⅜in. 10d., ½in. 11d., 1in. 1/-
Wide Mudguards, 3in., 2/3; 4in., 2/11 pair.
Handle-bar Watches, with holders 4/3
New Sidecar Frame and Wheel..... 35/-
Trembler Coils, 5/6. Plain 2/11
Powell and Hanmer £1 Lamp 11/6
16 Guinea Lowen Sidecar £5 0
Nearly New Coronet Sidecar..... £3 10
New Fuller Midget Coils..... 7/6
New Footrests 2/6

Booth's Motories,
Keighley Mills. Bedford Street North, Halifax.
Tel. 1062.

MOTOR BICYCLES FOR SALE.

1911 Scott, as new: £50.

1911 Bradbury, ditto; £37.

1911 Douglas, ditto; £28.

1911 Matchless, 8h.p.; £48.

1911 Moto-Reve, 2¼h.p.; £28.

1911 Bat, 2 speeds, and sidecar; £60.

1911 Singer, free engine; £38.

1910 Indian: £30.

1910 Douglas; £26.

1910 Dot and sidecar, 5h.p. £30.

1909 3¼h.p. Matchless; £22.

1909 F.N., 4-cyl., magneto; £15.

1909 Triumph, Mahon clutch; £30

1908 Ditto; £25.

AND Many Others.

F. C. JONES and Co., 3, Redcross St., Liverpool.

1911½ Moto-Reve, 2¼h.p., twin, new tyres and belt, in excellent condition; £29, or exchange.—17, Peel St., Accrington.

LATE 1911 Humber Lightweight, equal new; bargain, £27. Wanted, 5h.p. T.T. Bat.—Roebuck Hotel, Kay St., Bolton.

DOUGLAS, Triumph, Humber, splendid second-hands; exchanges.—Parish, Bradbury and Douglas agent, Preston. Sidecars.

4h.p. Quadrant, magneto, spring forks, adjustable pulley, h.b.c., good machine for sidecar work; £15.—65, Hilden St., Bolton.

1911 (June) 2¼h.p. Motosacoche, like new, plenty of spares; £27/10.—Whittaker, 63, Union Rd., Oswaldtwistle, Lancashire.

BRADBURY, in perfect order, all accessories; trial run arranged; £26, or best cash offers.—Winder Bros., Woodhouse St., Leeds.

PRESTON.—Immediate delivery 4¼h.p. O.K. Precision, 3-speed Armstrong, best value ever offered; £54/12: ideal for solo or sidecar.

PRESTON.—Immediate delivery Jap-Rex de Luxe, the sidecar machine; we specialise in exchanges, liberal allowances.

PRESTON.—Sole district agents Zenith-Graduas, Rex-Jap, Ivy-Precisions, etc.; see our stock of second-hand machines.—The Motor Cycle House, 82a, Fishergate, Preston.

3½h.p. Triumph, 1908, with accessories, condition like new, £24; also Douglas, 1909, £21; perfect; must sell.—168, The Moor, Sheffield.

SCOTT, 1911, brand new, not covered 200 miles; owner buying car, will accept £59; this is a genuine bargain.—Spence, North Parade, Ripon.

1911 Roadster Triumph, tank re-aluminiumised, new Dunlop back wheel, excellent condition; £38.—M. Gregson, 12, Hesketh Rd., Southport.

TRIUMPH, 1907, 3½h.p., rebushed and rings, h.b.c., B. and B. carburetter, adjustable pulley; £20.—Parke, 7, Liverpool Road South, Birkdale.

LIVERPOOL Official Agents for Bradbury, Zenith, Singer, Rex, Clyno, Moto-Reve; delivery from stock.—F. C. Jones and Co., 3, Redcross St., Liverpool.

1911 3½h.p. Lincum Elk, Bosch, B. and B., perfect order; trial given; very reliable, been through France; £26.—Sole agent, Church St. Garage, Bradford.

B.S.A., 3½h.p., new June, 1911, with accessories, equal to new; any trial; first cheque £37; owner ordered 2-speed model.—Campbin, Olive House, Ackworth, Pontefract.

1910 5h.p. Indian with P. and M. 2-speed and free engine, complete with sidecar, splendid condition, and go anywhere; turnout £45.—15, Bradford St. West, Bolton.

5h.p. Twin Minerva, low, special frame, Whittle belt, adjustable pulley, h.b.c., £15; flexible sidecar for same, £3/10.—Horner, 6, Woodside Place, Kirkstall Rd., Leeds.

4h.p. Motor Cycle, Rex engine, magneto, with new sidecar, £17/10; 1910 Royal Enfield, 2¼h.p. lightweight, £25.—Allen Bros., 75, Wellington Rd. South, Stockport.

1¼h.p. Clement-Garrard Motor Cycle, outside flywheel, with 2-speed gear, ready for fitting, Lucas lamp, Ukantes stand, good condition; £7/15, or exchange 2½ h.p., or billiard table, 6 feet.—8, Lovat Rd., Preston, Lancs.

CORONET SIDE CARS

TRACTION ENGINES

are not required to pull **CORONET SIDECARS.** 3½ h.p. motor cycles can take them comfortably. We do not make the heavy "hansom cab" type that are unsafe in a strong wind.



MODEL C.—£7 2s. 6d.



MODEL A.—£5 5s.



MODEL E.—£7.



MODEL D.—£7 12s. 6d.

Instructive Catalogue post free, giving illustrations and full particulars of all models of Coronet Sidecars. Every model certain to satisfy and save money for buyers. Full of improvements. Quick detachable joints. Latest car pattern mudguards. Wicker, cane, or coach-built bodies. Child's reversible seat. Excellent upholstery.

NOTE front arm which grips main tube of sidecar, which is the only correct mechanical method—nothing lopsided about this attachment.

Delivery from stock to suit TRIUMPHS, N.S.U.'s, REXES, P. & M.'s, BRADBURYS, etc.
Discounts to Agents.



TEE BEE LOW SEAT-PILLAR, 5/- each.

GREAT CLEARANCE LINE.

New Dunlops, 28 x 2 and 2½, wired edges .. 10/6
Dunlops, 28 x 2, beaded, heavy treads 14/9
24 x 2 and 2½ Beaded Clipper Covers, new .. 8/6
Best Quality Butt-ended Tubes 7/9
150 New Tubes, 26 x 2½..... 5/11
Rubber-studded Covers, best make 25/-

ENGINES:

4 h.p. Twin N.S.U., with Bosch gear-driven magneto, brand new from makers £11 10
4 h.p. Twin N.S.U., with magneto £9 0
3½ h.p. N.S.U., M.O.V. £3 10
3 h.p. FAFNIR, silencer, etc. £3 10
4½ h.p. BUCHET, water-cooled £6 15
9 h.p. DARRACQ, water-cooled £9 10
10 h.p. CLEMENT, two cylinder..... £9 10
3½ h.p. REX, M.O.V. £3 10
3½ h.p. AUTOMOTO £2 0 | 2 CYCLONE, m.o.v. £1 15
1¾ h.p. MINERVA £1 8 | 2½ h.p. DE DION £1 15
3 h.p. QUADRANT £3 0 | 2½ h.p. MINERVA £3 5

Exchanges entertained.

MAGNETOS. MAGNETOS. MAGNETOS.

We have a large stock of the best makes from 69/6. Your old coil and acc. taken in exchange.

NEW CARBURETTERS FOR OLD.

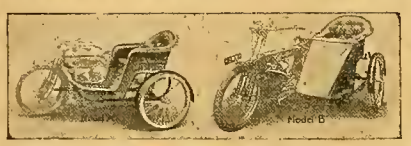
22/- and your carb. secures a new B. and B. with h.b. control.
20/- and your carburetter secures a new Amac with variable jet and h.b. control.
Delivery per return.

BOOTH'S MOTORIES,
KEIGHLEY MILLS, BEDFORD ST. NORTH
(off Pellon Lane), **HALIFAX.** Tel.: 1062.

In answering these advertisements it is desirable to mention "The Motor Cycle."

MAUDE'S BARGAINS

THE PORTLAND SIDECAR



£6 6s. model less apron. £6 6s. model with apron.



£7 7s. model. £8 8s. model.

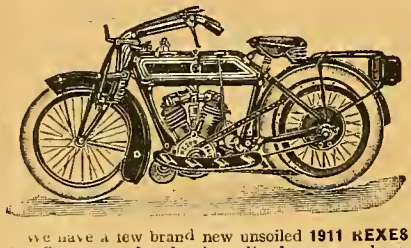
26 x 2¼ Michelin tyres. Double Cee Springs. Wide mudguard. Three-point suspension. Dropped bearer bar if desired. Double stove enamelled.

Guaranteed twelve months. Need we say more ? ? ?

NOTE ! ! ! Our £8 8s. Model weighs 78 lbs. only, not between 1 and 2 cwts., as suggested.

REXES! REXES! REXES!

RAPID, RIGID, and RELIABLE.



We have a few brand new unsoiled **1911 REXES** to offer at a reduced price. We have now, however, sold out of many of the models, but still have a few as below:

	List Price.
5 h.p. DE LUXE	60 Gns.
7 h.p. DE LUXE	65 Gns.
3½ h.p. DE LUXE	57 Gns.
3½ h.p. TOURIST	43 Gns.
3½ h.p. CONE CLUTCH	48 Gns.
5 h.p. CONE CLUTCH	51 Gns.
5 h.p. TOURIST	46 Gns.

But get OUR Prices.

1912 MODELS.

We have the under-mentioned machines for dates as below:

1912 3½ h.p. Clutch **RUDGE**	Ex-stock
1912 3½ h.p. Tourist **RUDGE**	Ex-stock
1912 6 h.p. **ZENITH**	Ex-stock
1912 3½ h.p. **ZENITH**	Ex-stock
1912 **ENFIELD,** sidecar combination	Jan. 30
1912 3½ h.p. **NEW HUDSONS,** 3B	Jan. 15
1912 3½ h.p. Standard **BRADBURY**	Stock
1912 2¾ h.p. **DOUGLAS,** Model K	Jan. 15
1912 7 h.p. **INDIAN,** 2-speed	Feb. 19
1912 2¾ h.p. 3-speed T.T. **HUMBER**	March 15
1912 3½ h.p. 2-speed **HUMBER**	March 15
1912 3½ h.p. Clutch **ROVER**	March 18
1912 3½ h.p. 3-speed **ROVER**	March 20
1912 8 h.p. **MORGAN** Runabout	March 9
1912 6 h.p. **A.C.** Sociable	March 14
1912 3½ h.p. **BRADBURY,** chain drive	March 21
1912 3½ h.p. **BAT,** 2-speed	March 25

All dates subject to being still unbooked.

WRITE US. SAVE YOURSELF MONEY.

CASH OR EXCHANGE

MAUDES' MOTOR MART

136 GT. PORTLAND ST. LONDON W.

MOTOR BICYCLES FOR SALE.

1911 P. and M., colonial, splendid order; 1911 Humber, 3½h.p., 2-speed; both little used; others; 1912 Clynos, £68/5.—Lockwood, Cromwell Rd., South Bank, S.O.

3½h.p. P. and M., new October, 1910, perfect condition, thoroughly overhauled by makers this week, Miller mudshield, etc.; £45.—Gerald Tolson, Kirkburton, Huddersfield.

SCOTT, 1911, perfect order, just completely overhauled, magnificent machine, very fast and powerful, done 60; spares; £49; trial.—Cyril Styring, 5, Leopold St., Sheffield.

1911 T.T. Triumph, in fine order £37, do 60 m.p.h.; standard 1910 Triumph, £32; 1911 Bradbury, £35.—Cross, agent for Triumphs, Matchless, and Bradburys, Rotherham.

SEE, Write, or Wire, Geo. Merrick; he's the man for Bradburys; in stock, Rudge, B.S.A., A.J.S., N.S.U., and runabouts.—Merrick's Stores, Listerhills, Bradford. Tel.: 2439.

BRADBURY, 3½h.p., magneto, late 1908, b.b.c., Palmers, Centipede, spares, new Easter, 1909, done 3,500; £20, or near offer.—Particulars, Lingard, Springbank Terrace, Oldham.

TRIUMPH, 1911, free engine, perfect, spare tyre, tube, belt, etc., Kempshall back, sidecar fit same, Chater-Lea; £45 together, sell separate.—Goodhind, 58a, Wellington Rd., Leeds.

2½h.p. Clarendon, low, spring forks, new 26×2 Dunlop back, Lyso belt, almost new, Amac b.b.c. carburetter, copper tank, good order; £5 for quick sale —Cowsill, photographer, Chorley.

1912 Humber Twin Lightweight, Armstrong 3-speed, only ridden 12 miles; £47; owner been used to high power twins, has gone back to same.—J. M. Bullough, 131, Market St., Atherton.

TRIUMPH, T.T., July, 1911, racing and touring handle-bars, do over 60, new Kempshall tyre and Dunlop belt, perfect condition; £40.—Hall, 7, Herbert St., Whitworth Park, Manchester.

ROYAL Enfield, late 1911, 2-speed model, brand new, offers invited; sole agents for Triumph, New Hudson, Rudge, Enfield; prompt deliveries of all models.—Wardmans, Princes St., Harrogate.

TWO 1911 P. and M.'s, in fine condition, £45 and £50; 1911 clutch Triumph, with sidecar chassis, £45; 1910 Clyno, belt driven model, £35.—Potter, the Clyno man, Leicester Grove, Leeds.

1909 3½h.p. Rex de Luxe, 2 speeds, free engine, handle starting, Bosch magneto, spring forks, cantilever spring seat-pillar, reliable; £23/10, or near offer.—Sutton, builder, Featherstone, Yorks.

4h.p. N.S.U., 2-speed, free engine, sidecar, Whittle belt, new tyres and spare, bought new last April, splendid condition; expert examination; £42/10.—Smith, Marlon Villas, Horne St., Wakefield, Yorks.

1911 Spa-Jap, 3½h.p., Chater spring forks and fittings, speedometer, lamp, J.A.P. adjustable pulley, Watawata, toolbag, enamelled in colours, only run 350 miles; £42.—Markland and Co., Deansgate, Bolton.

LIVERPOOL Agency for Triumph and Matchless Motors, Hitchings, Ltd., 74, Bold St., Liverpool, the pioneers of motor cycling in the North. It will pay you to deal with Hitchings, Ltd., an old-established firm of highest repute.

HITCHINGS, Ltd., for Triumph and Matchless Motors; any make supplied on most favourable terms; exchanges arranged; absolute satisfaction and courteous service assured by dealing with Hitchings, Ltd., 74, Bold St., Liverpool. Established over 30 years.

TRIUMPH, 1910, standard, £35/10; 1910 clutch model, £40; 1911 clutch model, with lamp, horn, and generator, £45; 1911 clutch model, absolutely as new, with Palmers, Cowey, Lucas, and backrest, £50; Douglas, 1910, £25. — Hitchings, Ltd., 74, Bold St., Liverpool, the Triumph and Matchless district agents. Guaranteed dates for 1912 models.

MATCHLESS, 1912, 3½h.p., clutch model, and 2½h.p. lightweight, in stock, for immediate delivery; inspection invited.—Hitchings, Ltd., 74, Bold St., Liverpool, sole district agents.

SINGER, 1911, clutch model, in perfect condition; at a bargain price; inspection invited.—Hitchings, Ltd., 74, Bold St., Liverpool.

3½h.p. Humber, free engine, leather clutch, handle starting, low spring seat pillar, drip feed, chain drive, new accumulator, splendid condition; £11; no offers.—Box No. L5,592, *The Motor Cycle* Offices, 20, Tudor St., E.C.

CLYNOS.—Hasten if you want one before Easter. They all want them. All makes are giving way to Clynos. No hill too steep, no road too long, no weight too heavy for a Clyno.—Call or write to Potter, the Clyno man, Leicester Grove, Leeds.

1911 Bargains.—Bradbury, shop-soiled, £39; 2¼h.p. 2-speed F.N., in splendid order, £32; 3½h.p. Premier, run 150 miles, £33; 14-guinea Millford castor fine sidecar, hardly used, £11/5.—The Brighouse Motor Agency, Bailiffe Bridge, Brighouse.

SOMETHING Good —1909¼ F.N., 4-cyl., with specially designed 2-speed gear and clutch, 16 7in. flywheel, bottom bracket gear case, bevel drive, back wheel and frame re-built specially for sidecar work, new Palmer cord on back, Binks 2-jet carburetter, long footboards, comfortable, speedy, and reliable; a bargain, £37/10.—Earnshaw, 87, Pinstone St., Sheffield.

MAUDE'S BARGAINS

ALL GOODS, GOOD GOODS.

ZENITH, 6 h.p., brand new, 1912 model, actually in stock	£70 7
RUDGE, 3½ h.p., new 1912 clutch model, in stock	£55 0
RUDGE, 3½ h.p., tourist, 1912 model, new, in stock	£48 15
REX, 6 h.p., 1911, 2-speed, de luxe models, new	£48 15
RUDGE, 3½ h.p., 1911, tourist, like new, bargain	£37 10
TRIUMPH, 3½ h.p., practically new, 1911 clutch model	£42 10
F.N., 4½ h.p., four-cylinder, like new	£30
REX 5 h.p. de Luxe, new, 1911 models	£60
BRADBURY, 3½ h.p., vertical engine, spr. forks	£18
PREMIER, 3½ h.p., 1910, twin, very fast	£32
MINERVA, 4½ h.p., twin, spr. forks, good tyres	£22
REX, 5 h.p., 1910, model de Luxe, two speeds	£42
SCOTT, two speeds, magneto, Palmer tyres	£28
REX, 1910, 5 h.p., M.O.V., gold medal winner	£35
REX, 1911, 7 h.p., two speeds, excellent order	£51
REX, 5 h.p., magneto, very fast	£24
TRIUMPH, 1909, 3½ h.p., standard model	£32
ARIEL, 1910, 3½ h.p., footboards fitted, F.E.	£30
N.S.U., 1908, 5½ h.p., two speeds, perfect	£25
TRIUMPH, 1908, 3½ h.p., XL'All saddle	£34
REX, 1907, 5 h.p., free engine, spring forks	£18
REX, 5 h.p., 1910¼, two-speed, M.O.V.	£42
PEUGEOT, 7-9 h.p. Twin, magneto, pan seat	£26
ARIEL, 2½ h.p., lightweight model	£10
MATCHLESS-J.A.P. 8 h.p., side valves	£37
ANGLIAN, 2½ h.p., good running order	£8
KERRY ABINGDON, 1910, 3½ h.p., clutch	£32
REX, 1911, 7 h.p., tourist model, very fast	£37
HUMBER, 1911, 3½ h.p two speeds	£37
REX DE LUXE, 3½ h.p., two speeds, magneto	£24
REX DE LUXE, 3½ h.p., 1911, as new	£41
RUDGE, 1912, clutch models in stock	£55
RUDGE, 1912, standard, in stock	£49
TRIUMPH, 1911, clutch model, as new	£44
T.A.C., 1910, 7 h.p. four-cylinder, three speeds	£45
N.S.U., 3½ h.p., magneto, cream finish	£22
TRIUMPH, 1911, clutch, Montgomery sidecar	£50
V.S., 5 h.p., 1908, magneto, Truffaults	£32
REX Sidette, 5 h.p., 1911 model, as new	£45
N.S.U., 3½ h.p., 1910 model, like new	£28
ANTOINE, 5 h.p., footboards, just overhauled	£20
HUMBER, 3½ h.p., 1909, two-speed	£32
TRIUMPH, 3½ h.p., 1909, footboards	£34
N.S.U., 3½ h.p., magneto, spring forks	£22
CALTHORPE, 3½ h.p. 1911 model, as new	£38
ZENITH, 4 h.p. 1911 model	£42
SINGER, 3½ h.p., 1911, only done 100, F.E.	£47
TRUMP-JAP, gray finish, 1911 model	£32

50/- deposit secures—

LLOYDS, 2 h.p.	£10	**BARTER,** 2½ h.p.	£8
MINERVA, 2 h.p.	£8	**L.C.,** 3 h.p.	£10
CUNARD, 3 h.p.	£10	**RIP,** 2¾ h.p.	£8
QUADRANT, 1¾ h.p.	£8	**ANTOINE,** 2½ h.p.	£7

Balance 5/- weekly.

CARS AND TRICARS.

REX Litettes, 1911 models as new	£50
BROWN, 3½ h.p., two speeds, air-cooled	£18
STAR Car, 9 h.p., three speeds, engine under bonnet	£25
REXETTE, 6 h.p., latest model	£22
REX Triette, 5 h.p., free engine	£22
BEDELIA Car, 1911 model, two speeds, magneto, only done about 300 miles	£45
PEUGEOT, 9-11 h.p., 2-cylinder, 3 speeds and reverse, dual ignition	£25
PHŒNIX Quadcar, 8 h.p., 2-seater, hood, screen, magneto, etc., etc.	£40

1911 REXES. 1911

We have a few brand new and fully guaranteed **REXES** to dispose of at advantageous prices. All models. Lowest prices. Send for Lists.

Now comes your opportunity to purchase for summer. No storage charges. Exchange your under-powered single for a powerful 2-speed twin. Special exchange allowances.

SEE ACROSS.

MAUDES MOTOR MART,

136 GREAT PORTLAND STREET, LONDON W

Telephone 552. Mayfair

Telegrams "Abdicate" London

(LISTS POST FREE)

The Halifax Motor Exchange

Largest Rex Dealers,

16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams: "Perfection."

WE have a few Brand New 1911 **TOURIST** and **DE LUXE REXES** on hand, and we are prepared to make liberal allowances for Second-hand Rexes in Exchange. Discount for Cash. Special quotations to the Trade.

GUARANTEED IN RUNNING ORDER.

1911 3½ h.p. **P. & M.**, with sidecar, all new	£56 0
1912 Twin **REX** Sidette, in stock	£75 0
1911 3½ h.p. 2-speed **BRADBURY**	£37 10
1911 3½ h.p. Tourist **REX**, done 750 miles	£32 10
1911 2¾ h.p. Two-speed **REX** Junior	£39 10
1911 3½ h.p. **REX**, clutch model	£37 10
1911 5 h.p. Two-speed **REX DE LUXE**	£47 10
1910½ Twin **REX DE LUXE**, brand NEW	47 Gns.
1910 7 h.p. **REX DE LUXE**, two speeds	£43 0
1910 7 h.p. Twin **REX**, HOT STUFF	£37 10
1910 5 h.p. Twin **REX**, very fast	£29 10
1910 5 h.p. **REX DE LUXE**, fine sidecar machine	£42 10
1910 3½ h.p. **REX**, very fast, special machine	£27 10
Two-speed, free engine Twin **REX DE LUXE**	£27 10
Twin **REX DE LUXE**, Roc clutch, wants tuning up	£16 10
1908 3½ h.p. Magneto **REX**, very fast	£24 10
1907 3½ h.p. Magneto **REX**, spring forks	£19 19
5½ h.p. Twin **REX DE LUXE**, Roc clutch, sp. forks	£24 10
Brand New 3½ h.p. **REX**, spring forks and pedals	£31 0
Brand New Twin Magneto **REX**	£37 15
1908 **TRIUMPH**, very powerful	£34 0
Magneto **TRIUMPH**, spring forks, specially low	£25 0
3½ h.p. **REX**, very good order	£8 10
3½ h.p. **REX**, very fine condition	£15 10
Four-cylinder **F.N.**, magneto, spring forks	£18 10
F.N. Magneto Lightweight	£16 10
3½ h.p. Magneto **FAFNIR**, M.O.V.	£19 0
3½ h.p. **WOLF**, Stevens engine, h.-b. control	£12 10
Twin Magneto **MOTO-REVE**	£17 10
3 h.p. **QUADRANT**, spring forks, h.-b. control	£12 10
3 h.p. **HUMBER**, chain drive	£9 10
MOTOSACOCHE, Druid forks	£14 10
WOLF, Lightweight	£12 10

Easy Payments at Special Rates.

£4 DOWN and 8/- weekly secures prompt despatch of any of these machines.

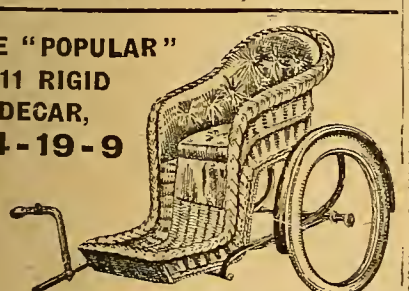
3 h.p. **QUADRANT**, V belt, h.-b. control, sp. forks	£12 10
4 h.p. **ANTOINE**, M.O.V., good order, reliable	£14 10
Lightweight **MOTOSACOCHE**, spray, runs well	£14 10
3 h.p. **QUADRANT**	£10 10
2¾ h.p. **KERRY**, spring forks	£10 10
Twin Magneto **MOTO-REVE**	£17 10
3½ h.p. **WOLF**, spray, smart, h.-b. control	£12 10
1¾ h.p. **WOLF**, up-to-date lightweight	£12 10

CARS.

15 h.p. 4-cyl. **REX REMO**, Bosch magneto, grand touring car, many accessories, spares	£160 0
16-20 h.p. 4-cylinder **WOLSELEY**, 2-seater	£49 10
5½ h.p. single-cyl. **BABY PEUGEOT**, 2-seater	OFFERS

1912 **BRADBURY** **REX** | **LIBERAL EXCHANGES.**

THE "POPULAR" 1911 RIGID SIDECAR, £4-19-9



Backed by 10 years' experience.
Every car guaranteed 12 months.

"Popular," Clipper or Continental tyre	£4 19 9
"Superbe" type, with best tyre, apron, etc.	£6 6 0
Ditto, with reversible child's seat	£7 0 0
Ditto, with best coach-built body	£7 12 6

Improved Quick-detachable Joints are fitted to all models. Prompt delivery to suit Rexes, Triumphs N.S.U.'s, Indians, and any other make.

Discount to Trade. Exchanges entertained.

MOTOR BICYCLES FOR SALE.

BRADBURY, 1911, August, 3½h.p., N.S.U. 2-speed, free engine, tyres and everything perfect, gives no trouble; £46; no offers; reason selling, buying higher power; trial run or expert examination. — Marsland, tobacconist, West Didsbury, Manchester.

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

TRIUMPH, 1908, lamp, whistle, etc., new tyre, excellent condition: £28.—16, Ashville Rd., Birkenhead.

MINERVA, 2h.p., 1911, B. and B., splendid condition, many accessories; £10.—Janes, Uttoxeter New Rd., Derby.

F.N., 1909½, 5-6h.p., 4-cyl., magneto, perfect order; cash 20 guineas.—E. Smith, Rutland Sq., Bakewell.

1912 Twin Zenith, in crate; best cash offers; will take 1911 Triumph part.—No. 9,288, *The Motor Cycle* Offices, Coventry.

1911 Douglas, bought in October, 500 miles only, not soiled; £33, or near offer.—Fox, Barracks Golf Club, Lichfield.

1912 Free Engine Bradbury, in crate; cash offers, must sell; ordered abroad.—No. 9,287, *The Motor Cycle* Offices, Coventry.

ROYAL Enfield, as new in every way, 2½h.p., lovely machine, but must sell; £19/10.—Box No. 9,284, *The Motor Cycle* Offices, Coventry.

TRIUMPHS, Zeniths, New Hudsons, Singers, Matchless, and other best makes; quick delivery; exchanges, highest allowances.—Below.

RUDGE-WHITWORTH, 1911, 500 miles only, £38; twin Rex, free engine, 1911, 1,000 miles, £40; Humber, 2-speed, 1911, shop-soiled, £38; A.J.S., 1911, faultless, £22; Enfield twin, new condition, £24; Triumph, free engine, 1909, extra good, £35; Quadrant, 1909, Bosch, 4h.p., for sidecar, £16; every machine guaranteed.—Oswald Parker, Melbourne, Derby.

MATCHLESS-J.A.P., 4h.p., August, 1910, 2 speeds, free engine; cost over £60; splendid condition; £37.—43, Harden Rd., Leamore, Walsall.

TRIUMPH, 1909½, studded Dunlops, perfect condition, £33; also rigid sidecar, £4/4.—Payne, 167, Oversetts Rd., Newhall, Burton-on-Treat.

HUMBER Lightweight; this machine has been little and carefully used, is very fast, and better than new; 26 guineas.—1 Wood's Lane, Derby.

TRIUMPH, 3h.p., splendid condition, headlight, speedometer, horn, new belt, etc.; £25, or near offer.—J. E. Taylor, South Av., Littleover, Derby.

LATE Model 1911 Bradbury, as new, tyres good, and spares; £29/10/10 nett; approval, deposit.—Box No. 9,283 *The Motor Cycle* Offices, Coventry.

2¾h.p. Peugeot, C.A.V. accumulator, good tyres, 1911 2¼ B. and B. carburetter, low, powerful, excellent condition; must sell; £8/10.—Stafford, Osborne Rd., Hyde.

GIVING Away a 1910 Speed King Rex, French grey, 4-g. twin, as new; £19/10; will do 65 an hour; no offers; must sell.—Box No. 9,286, *The Motor Cycle* Offices, Coventry.

3½h.p. Triumph, late 1908, thoroughly overhauled, also magneto recently, new tyres, frame, and back wheel, ample spares; price £28.—F. Weller, Heage Rd., Ripley, Derby.

MAGNETO Bradbury, 3½h.p., a.m.i.v., a powerful machine, and sound, very good tyres, low; nett cash price £11/10, first cheque.—Box No. 9,285, *The Motor Cycle* Offices, Coventry.

NEW Hudson, 1911, 4h.p., J.A.P., Armstrong 3-speed gear and free engine, new September, special 2½in. Palmer cord tyre and rim to back wheel, ideal sidecar machine, guaranteed absolutely perfect throughout, only run 600 miles; owner bought car; £53.—Moss, Wem.

1912 Models: any make supplied, including Scotts, Phelon, Douglas, and Zenith, etc.—Moss, Wem.

DO You Want a good, sound, second-hand motor cycle at a reasonable price? If so, write at once to the North Wales Motor Exchange, Rhosddu, Wrexham, they have some splendid machines in stock, or, if you want quick delivery of your 1912 mount, let them quote you, taking your present mount in part payment; expert advice free.

TRIUMPH, 3½h.p., 1907 engine, 1910 cyl. and piston, new Davison's tank, with petrol and oil gauges, new Albion free engine hub clutch, h.b.c., Clincher studded tyre front and new Palmer cord studded rear, new Whittle belt, F.R.S. large size lamp and generator, good mount solo or for sidecar; approval, deposit; £35.—Heath, 33, Craner St., Stafford.

SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

FOR Singers, James, and Ariels, write, Cordock Cycle and Motor Co., Scunthorpe, Lincs.

REX Machine, 3½h.p., new June, 1911, excellent condition.—51, Frederick Rd., Stechford.

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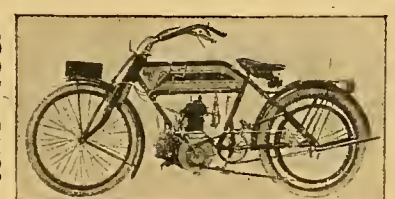
BRADBURY, 1912, standard	in stock	£48 0
BRADBURY, 1912, T.T.	,,	£48 0
BRADBURY, 1912, free engine	,,	£54 10
BRADBURY, 1912, two-speed	,,	£55 0
RUDGE, 1912 standard model	,,	£48 15
RUDGE, 1912 T.T.	,,	£48 15
RUDGE, 1912 free engine	,,	£55 0
ZENITH, 1912, 3½ h.p.	,,	53 Gns.
ZENITH, 1912, 6 h.p.	,,	67 Gns.
BAT, 1912, 3½ h.p., two-speed	,,	£59 0
BAT, 1912, 8 h.p.	,,	£60 0
BAT, 1912, 5 6 h.p.	,,	£58 0
F.N., 1912, 2¾ h.p., two-speed gear	,,	45 Gns.
F.N., 1912, 5-6 h.p.	,,	50 Gns.
SINGER, 3½ h.p., 1912, free engine	,,	£55 0
LINCOLN ELK, 1912, 3½ h.p.	,,	£34 0
DOUGLAS, 1912, Model H	,,	£47 0
TRIUMPH, 1912, free engine	,,	£58 0
CHATER-LEA, 1912, No. 7 three-speed	,,	£79 16
BEDELIA Cars ....(in 6 weeks) 7½ per cent. E.P.		59 Gns.
G. & N. Runabouts, 8 h.p. (in 6 weeks)	,,	87 Gns.
A.C., speed sociable type (in Feb.)	,,	£87 10

Any other makes on application.

Above machines for immediate delivery.

1911 New Machines to clear at Bargain Prices.

HOBART, 2¾ h.p., lightweight, £38 model £29 0

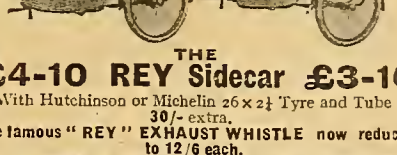
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Sole London Agent for the famous LINCOLN ELK. Finest value on the market for quality and reliability. All models on view and for immediate delivery.

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BAT, 8 h.p., good condition, all accessories	£28 0
BAT, 8 h.p., 1910, with Millford sidecar	£40 0
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B.S.A., 2¾ h.p., new cylinder wanted	£4 10
F.N., 4½ h.p., good order	£18 0
F.N., 2¾ h.p., two-speed, good condition, 1911	£27 0
F.N., four-cylinder, 1911, almost new	£29 0
REX, 6 h.p., 1911, F.E.	£37 0
REX, 4 h.p., T.T., twin, 1911 model, splendid order	£24 0
DOUGLAS, 2¾ h.p., 1910, fine order, all accessories	£25 0
DOUGLAS, 2¾ h.p., 1910, good order	£23 0
DOUGLAS, 1911, Model D, all accessories	£26 0
DOUGLAS, 1911, two-speed	£33 0
ZENITH, 1910, good order	£32 0
ZENITH, 1911 3½ h.p.	£39 0
ZENITH, 1911, 3½ h.p.	£40 0
ZENITH, 1911, 3½ h.p.	£42 0
TRIUMPH, 1910, F.E.	£39 0
TRIUMPH, 1910, F.E.	£38 0
TRIUMPH, 3½ h.p., 1909, good order	£29 0
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All Accessories included on S.H. at the price advertised.



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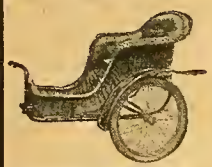
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The famous "REY" EXHAUST WHISTLE now reduced to 12/6 each.

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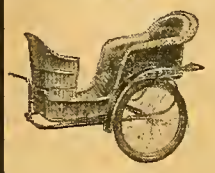
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MODEL DE LUXE. £5 5 0.



MODEL C. with Cane Body. £6 0 0.



MODEL E, with Reversible and Detachable Child's Seat, £6 10 0



MODEL D, with Coach Built Body. £7 0 0.

Absolutely the finest value on the market.

LESS POWER.

It is admitted by experts that, owing to the unique design, far less power is required to propel Farrar's Sidecars than any other style on the market.

NOTE OUR front arm which grips the Sidecar CENTRE nothing lopsided about this attachment.

OUR quick detachable joints are a treat.
OUR cranked back axles are extensively copied.
OUR design is the safest on the market.
OUR 12 months' guarantee is honestly carried out.

ALL COMPLETE with MUDGUARD AND TYRES.

Discount to the trade.

Delivery from stock to suit TRIUMPHS, REXES, P. & M.'s, N.S.U.'s, etc.

LIGHT, STRONG, AND SPLENDID VALUE.

SPRUNG LIKE A CAR.

Round or Car pattern mudguards at customers' option.

1912 MICHELIN TYRES.

26 x 2¼in. Covers	18/6
26 x 2¼in. Tubes	9/9

POST FREE.

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Heavy Rubber-studded Covers, 26 x 2¼		18/6
26 x 2½ Hutchinson Heavy T.T. Covers		25/-
26 x 2 and 26 x 2¼ Wired-edge Covers		12/6
Contioental Rubber Non-skids, 26 x 2½ or 2¾		30/-
Hutchinson, ribbed tread, 26 x 2¼in.		18/6
Continental, beaded, 26 x 2		18/6
Tubes, all sizes, guaranteed		9/6
New Butted Tube, 26 x 2½		8/6
New Butted Tube, 26 x 2¾		9/3
Special Heavy 26 x 2¼ Tubes, guaranteed		7/6

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"Ara" vulcanizer outfit	7/6
Bowden back brake	4/8
Lycett's Carrier Toolbags new	7/6
1 h.p. Electric Motor, 230 volts	£7 0
5½ h.p. Water-cooled Engine and Clutch	£7 0
New 4 h.p. N.S.U. Engine, perfect	£7 0
5½ h.p. Aster engine, water-cooled	£7 0
New Bosch Magneto, DA2, for single	75/-
One ditto, second-hand	57/6
1¾ h.p. Clement-Garrard engine	30/-
Lomax non-skid band, 700 x 85	7/6
Trailer, 26in. wheels	25/-
Goodlads speedometer, 5-40 m.p.h.	15/-
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New Lamp and Generator, plated	12/6
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Longuemare Carburetters	5/-
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FARRAR'S MOTOR EXCHANGE,

19, 21, 23, 25, Hopwood Lane, HALIFAX (Two minutes from G.P.O.)

Telephone 919.

MOTOR BICYCLES FOR SALE.

DOUGLAS, 1911, fine condition; £28.—Colmore.

SCOTT, 1910, overhauled and put in good order; £38; a scarce model.—Colmore Depot, Birmingham.

DOUGLAS, model E, 1911, 2-speed, free engine, footboards, in thorough going order, only a few months old, £40; and another, more used, £38.—Colmore Depot, 27, Colmore Row, Birmingham.

MATCHLESS, 3½h.p., 1911, J.A.P. engine, a fine fast machine, runs better than when new, tuned up and guaranteed in perfect condition; £38.—Colmore Motor Cycle Depot, 27, Colmore Row, Birmingham.

DOUGLAS, 2¾h.p., 1911, nearly new, all parts perfect; £32/10.—4, Carlton St., Nottingham.

1911 Free Engine Triumph, as new, lamp, horn, and spares; £46.—Thomas, builder, Leamington.

3½h.p. Fafnir, magneto, splendid order, with or without 2-speed.—Hawke, printer, Hallaton, Uppingham.

1910 Triumph, £33: Protector mud-shield, new, 12/-; 1910 Triumph flywheel, 12/-.—Pearson, 2, Listergate, Nottingham.

TRIUMPH, 1909½, free engine, Whittle belt, F.R.S. lamp, one spare butted tube; £33.—Crowley, 11, Northey Rd., Foleshill, Coventry.

HUMBER Depot for Birmingham and district, 78, New St.—Order your 1912 Humber from practical motorists and Humber specialists.

1910 Plate Clutch Rex, 5-6h.p., free engine, spring forks, Palmer cord tyres, condition as new; £31.—103, Heeley Rd., Selly Oak.

3h.p. Fafnir, h.b.c., good tyres, new belt, just overhauled, spares; £10; seen by appointment.—R. R Evans, Heath Terrace, Leamington

1911 Humber Lightweight, adjustable ignition, complete tool kit, 2 new belts and spare inner tube.—8,624, *The Motor Cycle* Offices, Coventry.

1910 Moto-Reve, magneto, 2¾h.p. twin, lightweight, everything as new; bargain, £21.—Drapery Stores, 64, Tilton Rd., Small Heath, Birmingham.

N.S.U., 1910, 2½h.p. twin-cyl., m.o.v., magneto ignition, spring forks, h.b.c. carburetter, very fast; bargain, £19/10.—12, Bull Ring, Birmingham.

REX DE LUXE, 1911, 6h.p., m.o.v., magneto, spring forks and seat pillar, aluminium footboards, dripfeed, free engine, 2 speeds, only little used; sell, bargain, £40.—12, Bull Ring, Birmingham.

1911 Model Rex de Luxe Sidette, 6h.p. engine, free engine, 2 speeds, magneto, B and B. carburetter, spring forks, fitted with handsome coach-built sidecar; cost 75 guineas, sell turnout £48.—Brown's, 12, Bull Ring, Birmingham.

MOTOR Cycle, 3½h.p., m.o.v., Bosch magneto, h.b.c. carburetter, spring forks; bargain, £13/10.—12, Bull Ring, Birmingham.

TRIUMPH Motor Cycle, 1907 model, magneto ignition, h.b.c.; bargain, £17.—Brown's, 12, Bull Ring, Birmingham.

TWIN Rex de Luxe, 1909, 5-6h.p., Roc 2-speed and free engine, magneto, spring forks, Continental tyres, fitted with coach-built sidecar; will accept £32 lot, or sell separate.—12, Bull Ring, Birmingham.

MINERVA-ABINGDON, 2½h.p., m.o.v., spring forks, 26 wheels, very low; bargain, £8/10.—12, Bull Ring, Birmingham.

£6/10, or nearest.—3½h.p. Centaur, rehored, new piston rings, valves; seen by appointment.—Proctor, 29, Wyville St., Radford, Nottingham.

BRADBURY, 1909½, excellent condition, new Dunlop studded and Clincher, all accessories, spares; genuine bargain, £26/10.—Kilbee, 35, Wrawby St., Brigg.

1912 Triumphs, Bradburys, Rudge, B.S.A., Douglas, Zeniths, Matchless, New Hudsons; handsome present to all customers.—Clifford Motories, Eastwood, Notts.

QUADRANT (Birmingham), re-bored by Gradior, B and B., Albion adjustable pulley, new belt rim, condition good; offers.—Haugh, 29, Henley St., Stratford-on-Avon.

3h.p. N.S.U., Whittle, low, £6/10; 2¼h.p. Langham 26 wheels, £3/10; 3½h.p. Fafnir, Chater-Lea, magneto, and sidecar, £22.—Potter, Springfield Rd., Shepshed, Loughborough.

1911 Model Water-cooled Rex, 3½h.p., Dunlop tyres, Bosch magneto ignition, Brown and Barlow carburetter, spring forks, equal new; bargain, £29.—56, Sutton St., Aston Manor.

HENRY GARNER, Ltd., 78, New St., Birmingham, the Humber Midland Depot.—All 1912 models now on view; earliest deliveries with a guaranteed promise; exchanges and trials arranged.

SINGER, 3½h.p., 1911-12, with or without N.S.U. 2-speed gear, condition equal to new; price with spares and gear, £48; without gear £43.—No. 9,041, *The Motor Cycle* Offices, Coventry.

5h.p. 1909 Rex de Luxe, 2-speed, clutch, recently overhauled at works, new steel studded tyre, lamp, tools, spares, condition perfect; bargain. £25. — A. Francis, Hyde House, Leamington.

3½h.p. Rover, late 1911, Triumph free engine, only run 600 miles, bargain, 38 guineas; also new 1911 2h.p. Singer Moto Velo, makers' price £35, will take best offer over £30.—Beck, Chapel St., Rugby.

STOCKTAKING

JANUARY 31st.

Previous to our annual "balance up" we will accept any reasonable offer.

CASH, CREDIT, OR EXCHANGE.

1912 MACHINES.

1912 3½ h.p. **New Hudson**, 3 speeds	57 Gns.
1912 2¾ h.p. **New Hudson**, 3 speeds	47 Gns.
1912 2¾ h.p. **A.J.S.**, 2 speeds, chain drive	44 Gns.

MOTO-REVES.

Handy in grease, free from vibration, splendid hill-climbers.

1908 Twin-cylinder, very good	£16 0
1910 2¾ h.p. Twin, very good	£22 0
1911 Single-cylinder, record machine	£22 0
1910 2¾ h.p. Twin, very fine order	£23 0
1910 2¾ h.p. Twin, with 1911 fittings	£24 0
1909 2¼ h.p. Twin, 50 x 70 mm.	£20 0

All have magneto, h.-b. control, Druid forks, toolbag, tools, and inflator.

SINGLE-CYLINDER REXES.

1910 3½ h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p. 1908 Featherweight Rex, Bosch mag.	£17 0

TWIN-CYLINDER REXES.

5-6 h.p. 1909 De Luxe, 2 speeds	£35 0
7 h.p. de Luxe, two speeds, M.O.V.	£48 0
5-6 h.p., 1908, two-speed, and sidecar	£32 0
5-6 h.p., de Luxe, 1908, two-speed model	£28 0
5-6 h.p., de Luxe, 1908, two speeds, special	£29 10
5-6 h.p., 1908, two-speed de Luxe, 1909 eng.	£32 0

N.S.U.'s. N.S.U.'s N.S.U.'s.

5½ h.p., two speeds, Bosch, B. & B. carb.	£25 0
5 h.p. Twin, Bosch magneto	£19 0
1910 6 h.p., M.O.V., two speeds	£33 0

OTHER MAKES. OTHER MAKES.

3¾ h.p. Twin **Premier**, very fine	£26 0
1911 3½ h.p **Singer**, clutch model	£37 0
1911 Two speed **Bradbury**, fine	£37 0
1911 Lady's **Hobart**, Armstrong three speeds	£35 0
3½ h.p. **L.M.C.**, 1910 model	£25 0
3 h.p. **Singer**, Bosch, V belt drive, B. & B.	£16 0
3 h.p. **Quadrant**, Bosch, B. & B., spr. forks	£16 0
3½ h.p. **Quadrant**, h.-b. control, spring forks	£16 0
2¾ h.p. **Humber**, chain drive	£7 0
1¾ h.p. **Minerva**, V belt	£4 10
3½ h.p. **Minerva**, Bosch magneto, Amac	£22 0

SIDECAR COMBINATIONS.

5-6 h.p. Clutch Model **Rex** and new Sidecar	£29 0
5-6 h.p. Two-speed **Rex** and Sidecar	£33 0
7-9 h.p. Two-speed **Rex** and Sidecar	£53 0
1910 6 h.p. **N.S.U.**, M.O.V., two speeds, complete with N.S.U. coach-built sidecar	£38 0

All fitted with Magneto and Spring Forks.

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3½ h.p. **Brown** Bicar, M.O.V. 26 n. wheels	£12 0
3½ h.p. **Fafnir**, vertical, M.O.V.	£11 0
2¾ h.p. **Humber**, chain drive, spray carb.	£7 0
1¾ h.p. **Minerva**, V belt, spray carburetter	£5 0

£4 DOWN SECURES ANY OF THESE. BALANCE 6/- WEEKLY.

3½ h.p. **Quadrant**, h.-b. control, spring forks	£16 0
3 h.p. **Quadrant**, h.-b. control, Bosch mag.	£16 0
3 h.p. **Singer**, Bosch magneto, h.-b. control	£16 0
1908 Twin **Moto-Reve**, magneto	£16 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

4½-5½ h.p. **N.S.U.**, Bosch mag. h.-b. control	£19 0
1910 2¾ h.p. Twin **Moto-Reve**	£22 0
1911 2 h.p. Single-cylinder **Moto-Reve**	£22 0
1909 2¾ h.p. Twin **Moto-Reve**	£20 0

CARS AND TRICARS.

5½ h.p. **Aster** Car, 3 speeds and reverse	£19 0
5 h.p. **Humber** Car, two-seater, good goer	£22 0
½ h.p. **Peugeot** Car, two-seater	£35 0
Buocar, Bosch magneto	£45 0

MISCELLANEOUS BARGAINS.

New Screwcutting Lathe, 4in. centres	£8 10
Farrar's Sidecar, quick detach joints	£3 16
Farrar's Sidecar, new wicker body	£3 16
Portland Sidecar, 26in. wheel	£3 10
Fulford Castor Wheel Sidecar	£5 0
Prested Accumulators, new, 15 amp.	9/6
Tricar Frame, suit 6 h.p. engine	35/-

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane,

Telephone 919. **HALIFAX** (Two minutes from G.P.O.)

THE MOTOR CYCLE

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ADDRESS: 20, TUDOR STREET, LONDON, E.C.

The Cut-out Again.

IT is now definitely known that the Local Government Board will prohibit the use of cut-outs on motor cycles and cars, and it will be interesting to see how it will set about what will be a most difficult task. (1.) How are the regulations to be carried out, and will their interpretation be left to police discretion? (2.) Presuming that the L.G.B. says no silencer shall have a cut-out, will the average policeman know what a cut-out is? (3.) If the decision as to efficiency or otherwise of a silencer be a question of dimensions of total cubical capacity, or area of exhaust outlet, or some other mathematical calculation, will every old and new machine have to be submitted to an examination before registration? (4.) Will the authorities who now issue the index numbers be sufficiently expert and know enough about motor construction to be competent to decide? Our reply to the second and fourth queries is an emphatic No! We would go further and say that there never was, and is not now, any necessity for further legislation on the question of silencer cut-outs.

There is already a law on the subject which the authorities could have easily tested had they felt so disposed. We refer to the statutory prohibition against so using a car or motor cycle as to cause a nuisance. This being so, is it necessary or expedient to introduce fresh legislation until the present law has been fully tried and proved ineffectual? A fresh regulation will be merely an addition to our already complex laws which are not fully understood by the people, and are often incorrectly administered because those whose duty it is to see they are properly carried out do not in many instances interpret them correctly.

No one would reasonably contend that the judicious use of a cut-out was a nuisance; therefore why not rely on the existing law with regard to excessive noise constituting an inconvenience to others, which is the meaning of the word nuisance, and prosecute those riders who by the use of a cut-out in towns and other places become a nuisance to those who have complained.

Another point that should not be overlooked is that the abolition of cut-outs will not prevent noise, some engines being so designed and made that they are more noisy than others, whether a silencer cut-out be fitted or not. Of this there is no doubt whatever, as a variation in the sound of the exhaust can be made by an alteration in valve setting.

It is announced that the Royal Automobile Club has been consulted in the matter by the Local Government Board, and has been asked to make suggestions for dealing with the question. Doubtless its advice will be largely acted upon, and we have no doubt it will, before communicating with the L.G.B., consult its sister organisation the Auto Cycle Union, as the recommendation should apply equally to motor cycles and cars. If the suggestions were to take the form of a reference to the present law, detailed above, there perhaps would be no necessity to go any further, and the prosecution of those riders who are sufficiently callous or negligent as to cause a nuisance would take the usual course. It would appear at the moment that neither the L.G.B. nor the R.A.C. is aware that the matter could be easily dealt with under the statutory powers.

Streamline Bodies for Motor Cycles.

WHY NOT?

THOUGH it may seem absurd on first thoughts to suggest a streamline body for a motor cycle, there is no question of doubt that such a wind-cutting fitment would materially aid the racing motor cyclist on the track. Racing has of late become such a fine art on Brooklands that new and up-to-date mounts are only capable of reducing by fractions of seconds the more important short distance records, consequently one's thoughts naturally turn to exterior aids to speed. So much experimenting has been done with special compression ratios, valve

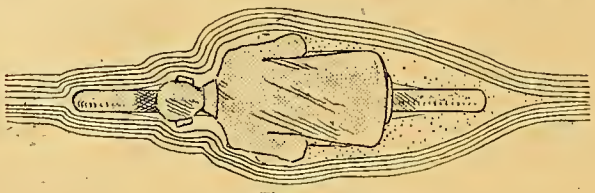


Fig. 1.

timing, cam design, carburetter fakements, etc., that it would appear strange that track racers have not turned their serious attention to wind cutting devices to envelop their body, such as we are dealing with, especially as the veriest novice knows how he must huddle himself up along the top tube to get the maximum speed out of his machine. Of course, the idea is suggested by prevalent racing car practice, and it is wonderful the big effect the streamline body and disc wheels have had upon the speed of even moderate-powered cars.

A motor cyclist's body, no matter what contortions he may perform to reduce wind resistance, is of irregular shape, and consequently has a considerable retarding effect. Air is reluctant to adapt itself to sharp corners, projections, and irregular surfaces, and some idea of the behaviour of rushing air on a motor cyclist's form is shown in the plan view fig. 1. The shaded portion at the rear indicates the region of a complicated series of currents and eddies which all absorb power, or in other words considerably reduce speed. If a body is so shaped that it has sharp corners or recesses, the fluid flows past these, leaving pockets, and forming what are known as surfaces of discontinuity.

The Advantages Derivable.

It is, therefore, easy to realise that a streamline covering to envelop the rider's body is bound to effect a considerable improvement in the matter of speed, and once records have been made by the aid of such bodies, it is unlikely that a rider on a machine of orthodox design could recapture them. The shape which has been found to require the minimum power to drive is a long fish-like surface with the blunt end facing towards the direction of motion. It was found that when the same body was placed with the thin end opposed to the wind that the driving force had to be greatly increased.

A fish—particularly a mackerel—has the most perfect streamline form in natural life. The bodies of birds are a very near approach. By referring to fig. 2 one may grasp the action of the air currents when moving past a body of streamline form such as would be used to envelop the motor cyclist. It will be seen from the second sketch that the outer jets of air curve round and flow over the sides, the greatest deflection taking place at the front edge. There is practically no loss of energy in this design due to surfaces of discontinuity. The definition of "streamline form" is that it is a body of such shape that its motion through a fluid does not give rise to surfaces of discontinuity. In other words, at no point upon the body does the fluid tend to do other than follow the contour of the body. The nearer the body is to streamline form the smaller will be the surrounding volume of fluid affected, whether air or water, and hence the smaller will be the power required to propel it at a given speed.

Power Absorbed by Wind Resistance.

Using the Eiffel Tower formula, $.003AV^2$, which is generally accepted as the most reliable, and assuming a motor cycle and rider to have a surface of 4.6 sq. ft. opposed to the air, the horse-power absorbed by wind resistance at various speeds is as under:

m.p.h.	h.p. absorbed.	m.p.h.	h.p. absorbed.
10	.035	60	7.944
20	.278	70	12.625
30	.993	80	18.850
40	2.227	90	26.681
50	4.350	100	34.800

It is obvious from the above that the Eiffel Tower formula is much too liberal and totally unsuitable for motor cycle use. The R.A.C., realising the above fact, place the constant as .0017, which would approximately halve the powers stated above.

Naturally the question of wind resistance is of paramount importance where cars are concerned, but is almost negligible in the case of touring motor cycles at moderate speeds, which, by reason of their design, offer so little resistance to the air. With racing motor cycles the question is very different, as the power absorbed by wind resistance increases so enormously at high speeds.

Numerous experiments have proved that the resistance of air to a normal plane varies as the square of the velocity. At very high speeds the resistance

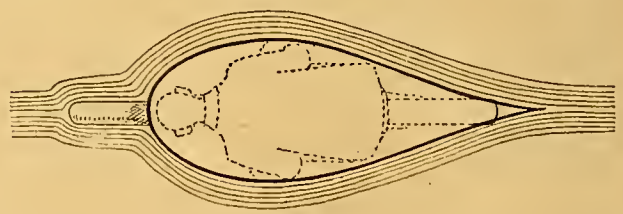


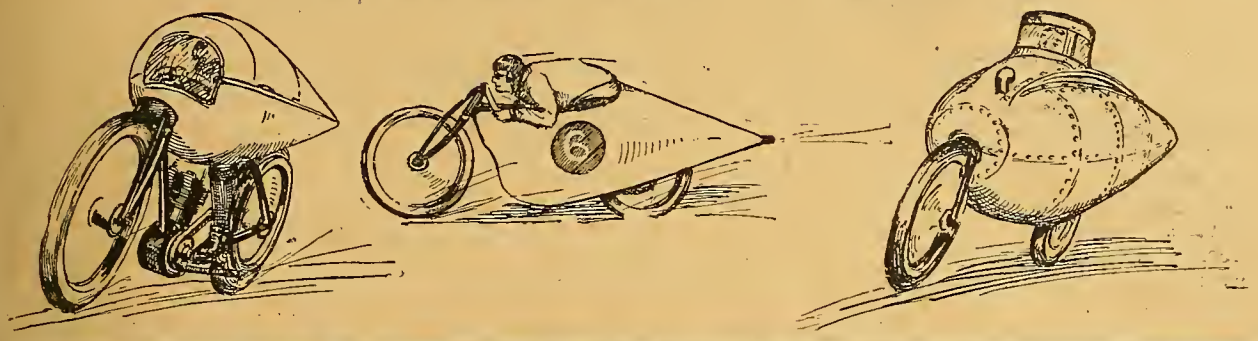
Fig. 2.

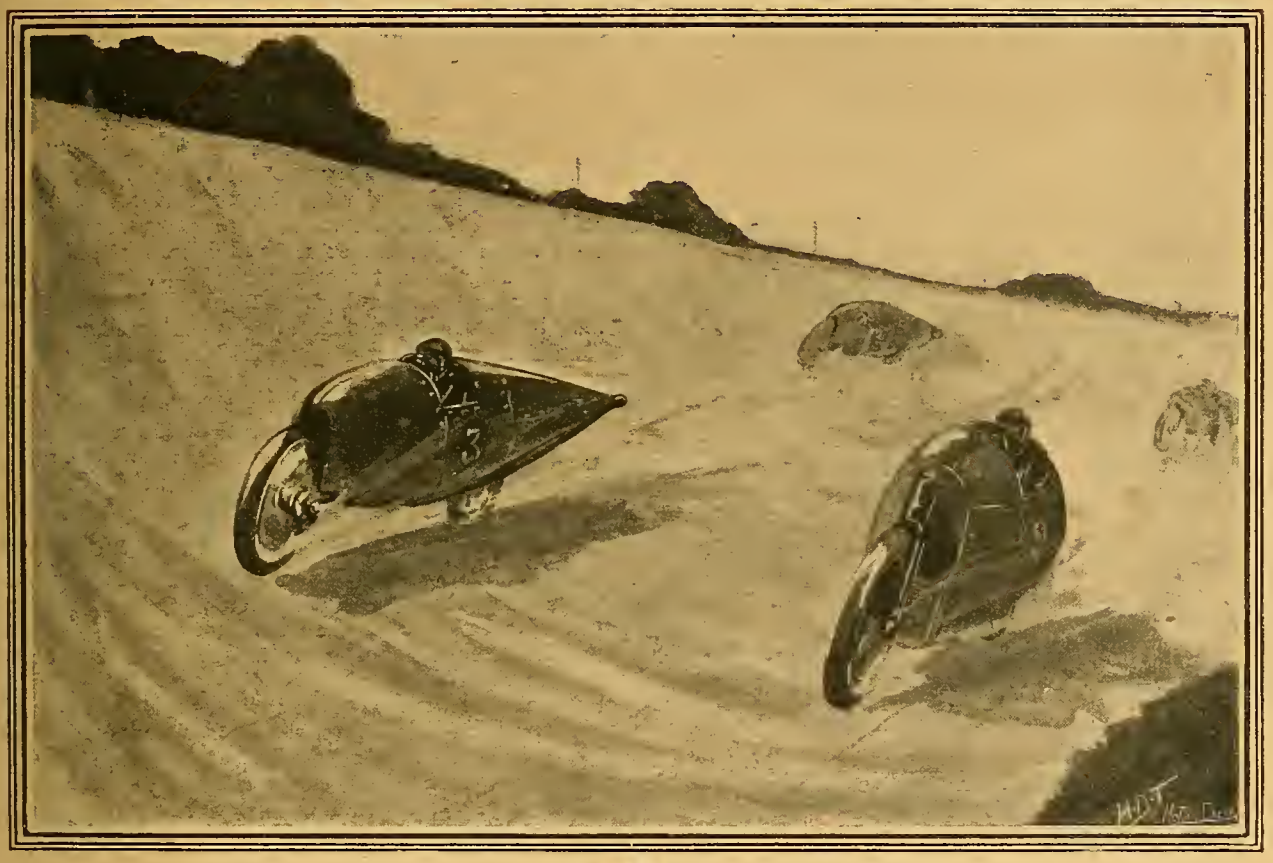
increases at a greater rate than the square of the velocity, until a maximum is reached at about the velocity of sound, viz., 1,100 feet per sec., or 750 miles per hour.

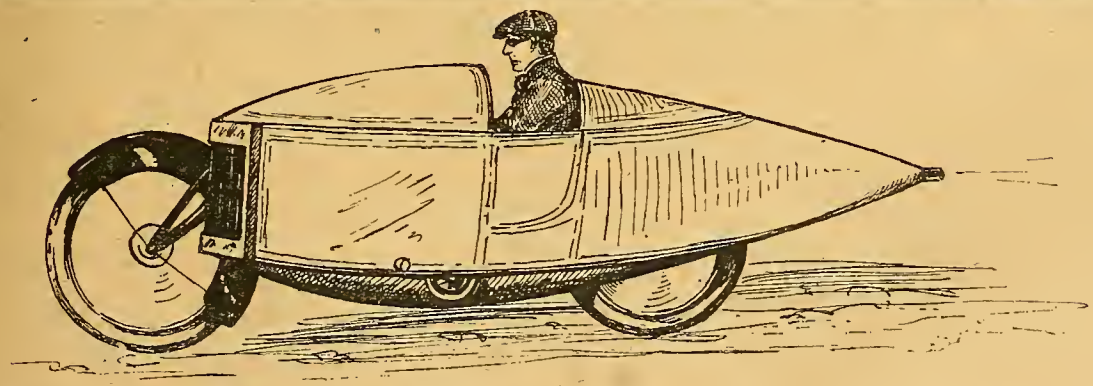
It has been estimated by one of our leading riders that almost as soon as the streamline body is tried on a motor cycle the speed will increase at least 10 m.p.h. Who will be the first to adopt this plan?

G.S.

THE STREAMLINE BODY APPLIED TO MOTOR CYCLES.







Top row—
(1) The streamline shell for track racing purposes. (See article on opposite page.) (2) The fish tail type, which might prove rather too warm for the engine ! (3) The submarine body.

In the two larger illustrations our artist has endeavoured to depict possible developments of the future on road and track in connection with streamline bodies.



The Effects of Abolishing Cut-outs.

It seems highly probable that noisy exhausts will be legally abolished within a very few months. The wails so commonly heard denouncing the innovation on the ground that hill-climbing must suffer strike me as quite beside the mark. It is gratuitous to imagine that the ingenuity of the trade cannot evolve a silent machine of 500 c.c. which will climb as well as present-day noisy models. But should the trade fail in this not very arduous task, the only effect will be a general lowering of standard gears by a small fraction. An open cut-out does not affect a greater improvement in climbing powers than the reduction of the gear from, say, 4½ to 5 to 1.

My own belief—and Brooklands experiences bear me out—is that within a single season exhaust clearance will be improved, with a great gain in silence, so that the absence of a cut-out (if the cut-out be abolished) will be imperceptible. If I am too sanguine, the effects of a legal prohibition will be twofold—first, a general lowering of gears, and, second, a growing popularity in more penetrating alarms than the ordinary booter.

A High Speed Passenger Reliability Trial.

The idea of a Manx or other T.T. race for quadcars and other forms of sociable is scarcely practicable at present. Design is not sufficiently stereotyped for such a race to fill, except on a handicap system, and the best handicaps would fail to satisfy the sponsors of the various designs on the market. But until such designs become standardised (if ever they do!), a high speed reliability trial on Brooklands Track would be wildly interesting.

Many of these tiny chassis are the productions of small workshops, and the cash at the inventor's disposal seldom allows him to put a sample chassis through a Six Days' Trial. A high speed reliability test on Brooklands would be cheap by comparison, and would cater for all horse-powers and designs, besides providing an accurate "line" to the capabilities of different makes.

To be really instructive, such a trial should continue through the daylight of two consecutive days, making up a running time of twenty-four hours in all. There need be no marking of the split second type, which is as irritating as it is useless, except in "knock-out, find-a-winner" events. We might simply set a 3½ h.p. outfit to average 30 m.p.h., a 5 h.p. to average 35 m.p.h., and an 8 h.p. to average 40 m.p.h. for twenty-four hours (divided into two twelves, on consecutive days), all stoppages, except for replenishing tanks, to incur loss of marks, and the speed set to be a *minimum*, not a timing test, with no gain or loss for excess speed. At the finish of this trial we should have a fairly shrewd idea which of the numerous runabouts are reliable for long distances and which are not.

Winter Trials.

The percentage of successes in the 1911-12 "Arctic Trials" shows that further advances have been made in reliability, though the increased nerve and experience of the riders account for something, nor can we forget that really severe winter weather might in any year reduce the number of gold medallists to zero. The condition of the men and the machines at the end of their gruelling journeys, added to a consideration of the polar garb donned by the majority, points to the need of a special winter "body" for the true all-weather rider.

I think if I were a commercial traveller, using my machine week in and week out for business purposes on compulsory rides, I should fit a permanent winter body between November 1st and March 1st, to wit, a light aluminium torpedo, resembling that on the Roc tricycle, with a high front, and sides brought well back. A light detachable steel framing, with aluminium panels, or leather shields, would serve to keep two-thirds of the anatomy warm, dry, and clean. The best of the existing winter shields seems to me to consider the machine rather than the rider; and more complete protection for the rider should be attainable without a great sacrifice of weight or convenience.

Handle-bar Free Engine Control and Side-slip.

I take a diametrically opposite view of this question to that urged by Mr. Wrowe in his letter of January 4th. He thinks that the skilful manipulation of an "h.b.f.e." (there's a portmanteau abbreviation for you!) reduces the liability of sideslip. Other things being equal, its effect is exactly the reverse of what he states.

To begin with, most handle-bar free engine controls are deficient in leverage, and their operation throws a distinct wrench on one end of the handle-bar, which spoils the easy, delicate balance maintained by two unencumbered hands. Further, the letting in of a clutch (unless the clutch be very perfect and very perfectly operated) causes the rear wheel to snatch at the ground in a much more jerky fashion than when a valve is dropped on a flexible engine with the control levers sensibly set.

For these reasons I, personally, never use my handle-bar free engine clutches when the roads are treacherous, but prefer to drive as if the clutch were non-existent. I only use a clutch on treacherous surfaces when I find it awkward to get started, *e.g.*, on a slimy upgrade with nailless boots. Even under these circumstances the back wheel is nearly sure to skid in the course of taking up the drive; but a skid does not really matter at the very low pace implied, especially with the feet trailing. I should not dream of driving any distance in this fashion, *i.e.*, at four or five miles an hour; first, because I might as well walk, and, secondly, because skids are much less probable at a higher speed.



FOOT-STARTERS.

A Review of Current Practice.

AS to whether the motor cycle, considered purely as a locomotive, has undergone any material improvement since the first month of last year there may conceivably be some little doubt, but there is certainly room for none upon the question, "Has it become more convenient and handy?" In this connection it is perhaps not going too far to say that the general and rapidly growing use of some form or other of easy starting mechanism is a step forward of such magnitude as to be worthy of classification with the introduction of variable gears, magnetos, and spray carburetters. The addition of a very simple device has already robbed the critics of the motor cycle of one of their most powerful arguments. Until lately they have been right in declaring that the average two-wheeler was a machine fit only for men of vigour and activity; now, however, they must admit that it can be mounted and ridden with practically no serious effort whatever. This, it need hardly be said, is a fact of the utmost value to the industry, for it means that the ranks of motor cyclists will be swelled in the immediate future by many who have until lately justly regarded the motor cycle as something entirely beyond their physical powers. In a few words, the foot-starter has made the motor cycle a practical vehicle for ladies and men of some years; at the same time it has proved an added comfort to those who were motor cyclists already.

Will Foot-starters become Universal?

There were few firms of any note amongst the first flight who did not have at Olympia at least one model fitted with a kick-starting apparatus, and I question whether any general tendency was ever so welcome to all and sundry. It is true that one big, but conservative, manufacturer advanced the opinion, as an excuse for retaining it, that the run-and-jump-on-"ares," but in order to rope in the "mightbes."

This much, however, is at least certain. No one who has ever used a foot-starter would willingly start by any other means. In getting a start up hill it is a paramount necessity, in traffic it is a perfect blessing, and at all times it is most eminently desirable. When it comes to sidecar work its value is even better demonstrated, for who can deny that even the strongest of us find the pushing of a heavily loaded sidecar combination a very big physical effort against the smallest gradient; indeed, even in my own small circle of acquaintances there are three people who have either temporarily or permanently denounced the sidecar for this reason alone.

Faults in Design.

Turning to the examples of foot-starters at the Show, exclusive of those used with ordinary pedalling gear. These, whilst being upon a single principle, exhibited a variety in application, yet nearly all were open to much the same common criticism, viz., that, if anything, they were, for the most part, upon the right side, and that in only very few cases was there any sign that the mechanism was eventually intended to be covered in. Another objection is that with the larger engines sufficient precaution was not taken against backfires. It is all very well to say that if large car engines can be started by hand as easily as they are there should be no difficulty about starting smaller motors by foot, but the conditions are by no means the same. First of all, with practically all the foot-starters that have yet appeared the starting pedal is geared up to crankshaft, in order to get at least a complete revolution of the latter with half a revolution, or one thrust downwards of the former. The result of a backfire is, therefore, proportionately exaggerated. Next, car engines have big flywheels, which enable them to be "swung"

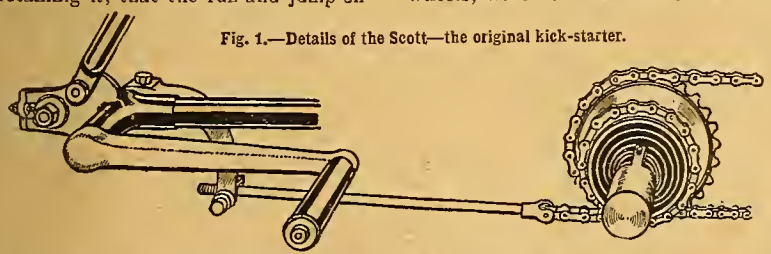


Fig. 1.—Details of the Scott—the original kick-starter.

mount was, under all the circumstances, the best possible, the easiest, the quickest, and the most reliable, and that nothing better was wanted by the average motor cyclist; but this, at best, is a prejudiced view—the view of a man who fails to realise that development is made not so much to benefit the "has beens" and the over compression, whereas the smaller motor cycle engine must be forcibly pushed over compression.

To overcome this difficulty with the bigger sizes of engines one of two things is necessary, either some form of half-compression device must be employed, or the starting pedal must be arranged to throw itself out automatically with a differential clutch arrangement. The former device is adopted on the Scott and the latter on the Indian.

Before describing the various mechanisms in detail, one point deserves mention, namely, that it must not be supposed that the mere use of a foot starter gets rid of all starting troubles. It requires some address and knack in its operation to be entirely successful, otherwise it is likely to cost as much effort as a push start. For this reason it is of the greatest importance that it should be placed in such a position that the maximum purchase can be obtained upon it, for if not it is likely to be more trouble than it is worth. As to which is the better side for it, that is a matter of taste, but considering that the majority of sidecars are fitted on the left, there is a good case for the right side.

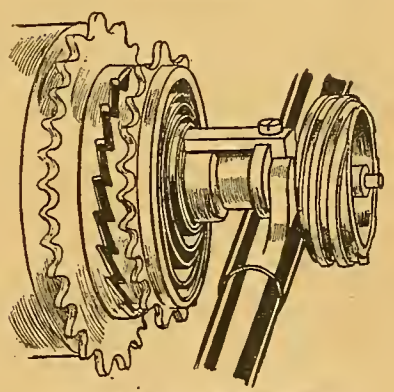


Fig. 2.—Scott ratchet on clutch drum.

A Prototype.

The Scott mechanism is shown in figs. 1 and 2. Needless to say it is dealt with first, as Mr. Scott was without doubt the originator of the kick-starting gear for motor cycles. With patent rights I am not particularly concerned, but I imagine that whether any of them were infringements or not upon it, Mr. Scott must have been gratified to find his original idea so manifestly vindicated at Olympia.

As shown in fig. 1 it consists of a bell-cranked foot lever supported in a bracket attached to the chain stay close beside the back hub. The lever starts the engine by driving the two-speed counter-shaft through a free-wheel clutch. The chain sprocket for this purpose is provided with an internal spiral spring for rewinding the chain about itself, whilst the bell-cranked lever is returned by a separate spring. This bell-cranked lever was formerly carried as a sleeve on an extension of the back hub. It has now been placed as shown in order

Foot-starters.—

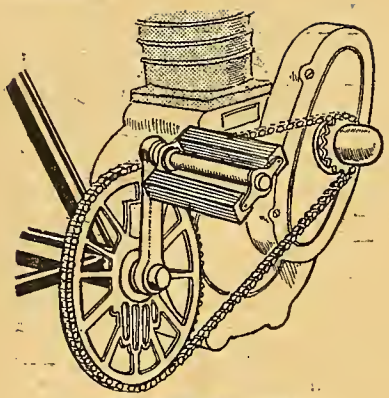


Fig 3.—Rudge pedal starter.

to avoid the necessity of adjusting the starting chain when adjusting the rear-wheel driving chain. This adjustment is, however, necessary when the engine chains are tightened.

The position of the pedal is excellent in every way, as it allows of a strong backward and downward kick—the direction in which the greatest strength can be exerted—and it is also out of the way.

get a start with the exhaust lifted and drop the latter as soon as a reasonable speed of rotation is reached. The same thing applies to several of the other starting gears, but it is not, in my opinion, so good a precaution against backfires as a half compression device, for the reason that a tolerably full cylinder of rich mixture must be used to make sure of an explosion, and in these circumstances there is some possibility of a backfire following any carelessness in handling. Further it must be borne in mind that the higher the gear ratio employed the more vigorous must the kick be, as continuous rotation such as one gets when pedalling the engines round is not possible.

Details of the Rudge clutch mechanism, which is highly ingenious and effective, are shown in fig. 4, the parts being placed in their correct assembling order, but extended. A is the tapered and rough-fluted end of the timing wheel spindle, C having an internal taper of the same degree but smooth. B is the bearing carried in the wall of the timing gear case, the slot in its larger diameter serving to anchor the up-turned end of a small brake spring which runs in a groove of C. The last named is provided with a quick-thread drum which is engaged with a similar quick-thread

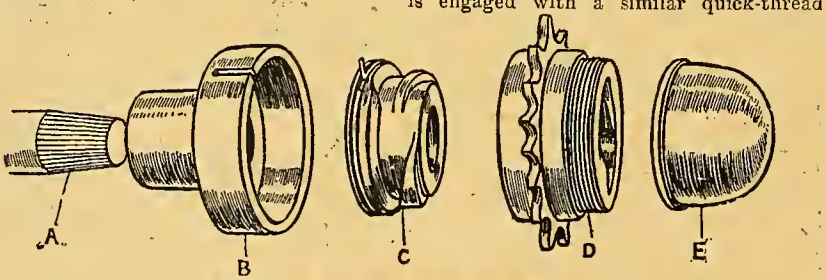


Fig. 4.—Details of Rudge clutch starting device.

Fig. 2 shows a detail of the countershaft, namely, the free-engine clutch, the driven ratchet being applied to the high-gear clutch drum which is geared down to the engine about 1½ to 1. The clutch runs loosely as a sleeve upon the countershaft spindle, the bracket of which carries a finger which supports the inner end of the spring. This is of the "clock" type, but it is pulled outwards axially so that it exercises a side thrust upon the clutch as well as a rotating moment. Inside the free-wheel sleeve the spindle carries a cam, which, when the starter is out of action, brings the two ratchets entirely clear of one another, so that there is neither noise nor wear. The compression release used with the starter consists of a small mushroom valve in each cylinder at what is practically the bottom of the stroke.

An Ingenious Starting Clutch.

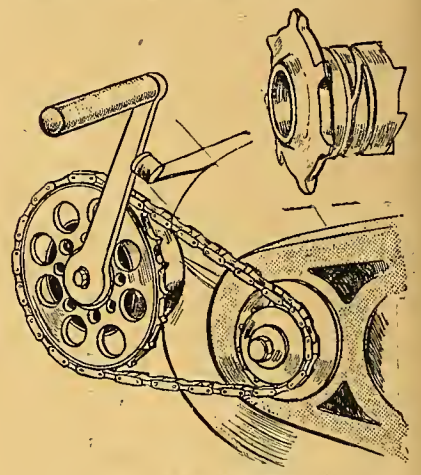
The Rudge foot starter, although employing the same principle, is carried out in an entirely different manner, the pedal being attached to a large chain sprocket which is carried at the bottom bracket and drives the engine through a small sprocket mounted upon an extension of the intermediate timing pinion spindle. The gear between the sprocket and the engine is thus about 6 to 1—a ratio sufficient to give three complete revolutions of the crankshaft for one push down. There is thus time to

nut cut internally in D, which is the driven sprocket. E is simply a dust cap. The operation of the mechanism is as follows:

C being inside D and having a left-hand thread, clockwise rotation of D tends to force C to the left as its rotation is resisted by the brake spring above mentioned. This causes it to be forced on to the taper of A, which it immediately grips and drives, the friction of the engine only serving to lock it tighter. Directly the engine fires C commences to rotate, and if D be held stationary (the foot being at the time upon the starting crank), C screws itself into D and thus disengages the cone clutch, after which the mechanism is quite free of the engine, none of the parts rotating at all. The sprocket D takes a bearing upon the larger diameter of B.

The Prevention of Damage by Backfire.

A device which is in some ways rather similar to that of the Rudge is employed in the Indian foot starter. This is placed in front of the engine from the left-hand side—a position which, from the leverage point of view, might be possibly bettered, although the starting pedal itself is well out of the way. This pedal is connected up to the large chain sprocket with a double set of clutches—the arrangement of which I am unfortunately not permitted to describe in detail—which in the event of a backfire occurring throw the crank free of the sprocket altogether. In other words the crank can drive the sprocket but the sprocket cannot drive the crank. The contrivance is very cleverly designed, though it did not appear to me to be any too strong for so large an engine. The crank case, it will be noted, carries a fibre-headed stop, against which the pedal is returned by an internal spring.



Figs. 5 and 6.—Indian.

The method of clutching up to the engine-shaft is simple and effective. The principle is similar to that of the Rudge, except that, instead of a quick-thread drum, a "tram-way" is employed. This is illustrated in fig. 6. The small chain sprocket—the chain is for some reason a block one of one inch pitch, and, therefore, rather clumsy looking—is supported by an extension of the crankshaft and also by a bush carried by the driving chain case. In this outer bush is a spring ball-headed plunger which runs into the semicircular tramway grooves of the sprocket sleeve. In the normal or "out" position of the sprocket the plunger is in the right-hand line of the tramway, but upon the sprocket being rotated clockwise the plunger runs into the cross-over tramline, which is cut much deeper than the other and so propels the clutch sleeve sideways into engagement. When the engine fires, the ratchets force one another apart, with the

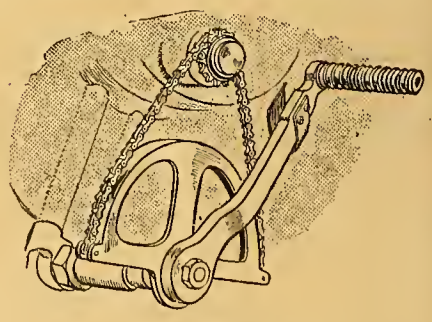


Fig. 7.—P. and M.

result that the plunger jumps from its tramline across the track into the right-hand one again, being helped in this action by the cross-over line into which it is brought upon the release of the pedal. The pedal stop is so arranged that

Foot-starters.—

the tramway comes into action immediately pressure is applied by the foot.

When the engine is running all the parts of the starting gear are free.

A Simple Starter.

One of the simplest forms of starter is the P. and M., a sketch illustrating the general arrangement of which is given in fig. 7.

Fixed immediately underneath and behind the crank chamber is a bracket which carries a semi-circular drum, to each end of which is anchored a short length of chain which passes over a small sprocket runing loosely on the crankshaft, which is slightly extended for this purpose. This sprocket has a free-wheel at the side of the sleeve, of which it forms a part, the teeth of this being considerably undercut, so

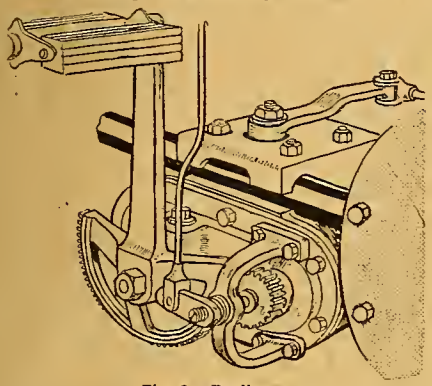


Fig. 8.—Bradbury.

that when driving the engine the teeth of the sprocket ratchet force themselves into engagement. Normally they are held out of engagement by a small spiral spring. The pedal crank of the chain drum is, however, arranged so that when it is out of use it lies a little above and beside the sprocket, opposite which is fitted a U-shaped spring blade, which, as the pedal is forced downwards, presses against the end of the sprocket and forces the teeth of the ratchet into engagement. When the engine has started these teeth cannot, of course, engage, so that on its return stroke

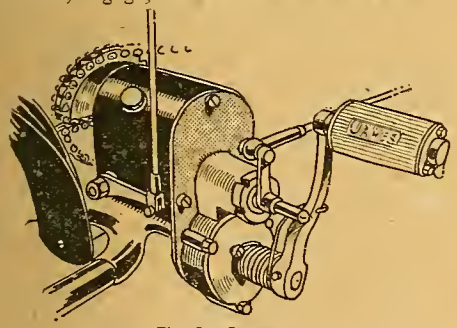


Fig. 9.—James.

the pedal passes freely by the sprocket, and when back to its "home" position everything runs clear and free

The commonest place for the foot-starter is to be mounted upon the counter-shaft gear box, examples of which are to be found in the Bradbury, James, Douglas, Clyno, and Calthorpe machines, and also in the Bowden counter-shaft gear box, which has already been fully described in *The Motor Cycle*.

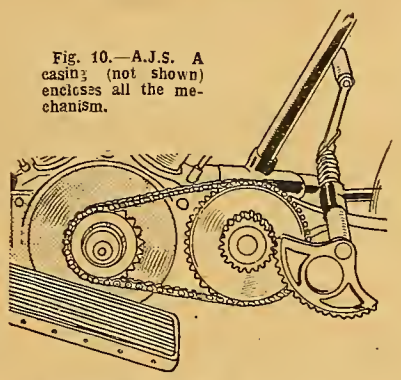


Fig. 10.—A.J.S. A casing (not shown) encloses all the mechanism.

Fig. 8 illustrates the Bradbury device. In this case the primary gearshaft is extended through the non-driving side of the gear box, and supports a loose gear pinion, on the side of the boss of which is an undercut ratchet engaging with a similar one fixed to the gearshaft. A small spring serves to throw them into action when the gear pinion is rotated by the starting pedal, which is attached to and forms

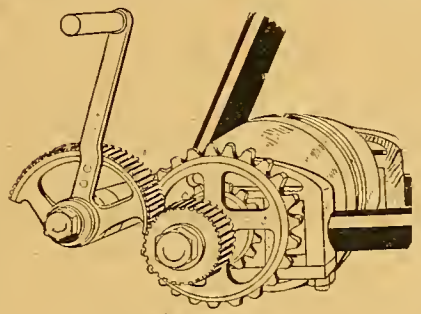


Fig. 11.—Clyno.

part of a semi-circular rack, supported by a special bracket cast on to the gear box. The pedal is operated by a downward and backward kick, and returned to its normal position by a spiral spring.

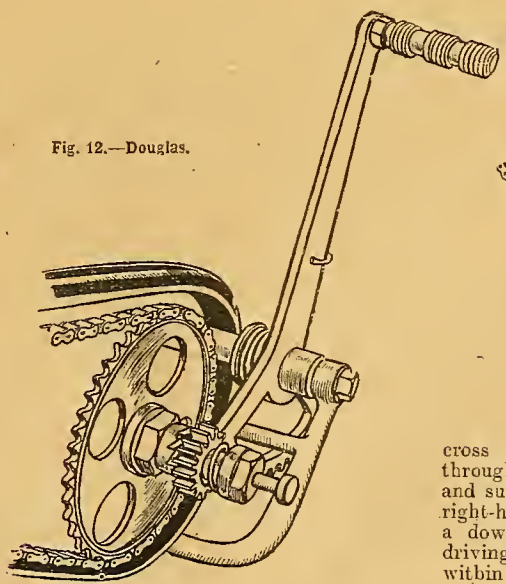


Fig. 12.—Douglas.

Enclosed Gearing.

The James starting mechanism is shown in fig. 9. Here the side of the gear case is prolonged downwards to form a housing for an enclosed driving pinion, and an intermediate pinion meshing with a pinion carried on the end of the primary gearshaft (which is also the clutchshaft). The driving pin is connected to the pedal-shaft by an ordinary circumferential free-wheel, the crank being returned by a spring. The ratio between the pedal pinion and the engine is about 3 to 1. It will be noticed that the pad of the pedal is furnished with pendulum weights to keep it always floating in the right position for the foot. It need hardly be said that the James starter is worthy of the greatest praise for one fact above all others, namely, that it is one of the only two which are adequately protected both from rain and

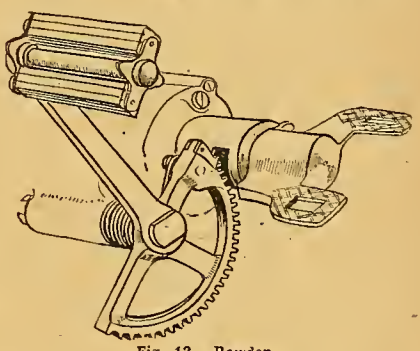


Fig. 13.—Bowden.

mud, and also from the liability of mangling overalls and bootlaces. In starting the James a forward kick is used.

The other protected one is the A.J.S. (fig. 10), which also applies to the chain-driven counter-shaft, which carries on its extreme outside a gear pinion engaged with an ordinary free wheel. This pinion is driven by a ratchet sector, carried by a

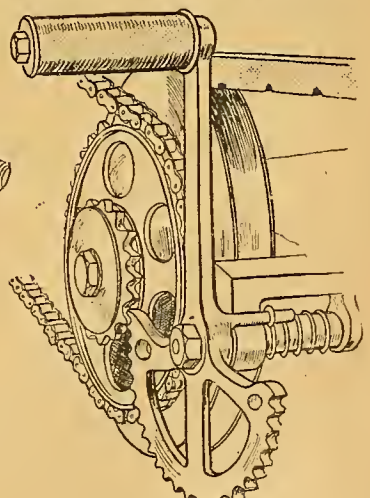


Fig. 14.—Calthorpe.

cross shaft, which passes as it were through the bottom bracket of the frame and supports a spring loaded pedal on the right-hand side. This is operated with a downward and backward kick. The driving pinions of the above are contained within the counter-shaft chain case.

Foot-starters.—

The Clyno arrangement is shown in fig. 11, and is applied to the chain-driven bottom bracket counter-shaft. This carries a gear pinion, beside which is a ratchet with slightly under-cut teeth. The starting pedal, which is to be pressed backwards and downwards, is fixed to a semi-circular rack, which is quite clear of the pinion when the engine has started and the pedal has been returned by its spring. It is carried in an eccentrically mounted bush, thus providing an adjustment for the gear when the counter-shaft chain has to be tightened. To make this bracket as strong as possible, it is further supported by an outside stay from the frame.

Fig. 12 illustrates the Douglas device, which after the previous explanations is sufficiently obvious. The pedal, to which is attached a crank and rack, is kicked backwards (the step appears to be rather on the small side), and drives a ratchet pinion on the primary gearshaft. The pinion and rack are completely free of one another when the engine is running.

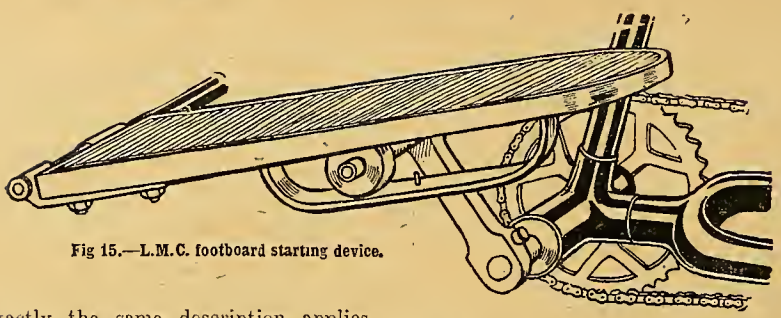


Fig 15.—L.M.C. footboard starting device.

Exactly the same description applies to the Bowden (fig. 13) and the Calthorpe (fig. 14). In the former, the pedal rack springs clear out of engagement with the covered-in pinion on the engine-shaft, and in order to make re-engagement the less harsh is furnished with a spring tooth, whereas in the latter the rack and pinion are always in engagement.

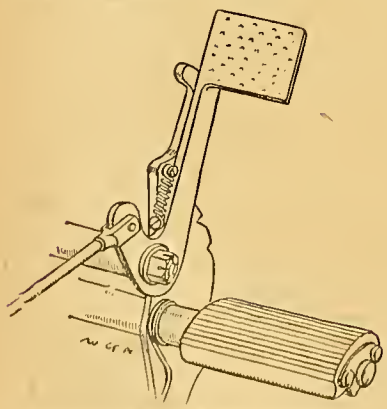
Another Method.

The L.M.C. foot-starter is more a method of using footboards instead of pedals than anything else, though in its way it is extremely effective, although, of course, unless a special hub be fitted it requires the back wheel to be jacked up clear of the ground.

The drawing (fig. 15) makes its construction easy to understand. The left footboard is hinged in front, and drives an ordinary sprocket wheel through a crank, by means of a metal roller running between guides. It is obvious from the construction that a very large leverage is obtained.—W.G.A.

PEDAL CONTROL OF THE BROWN & HINGSTON GEAR.

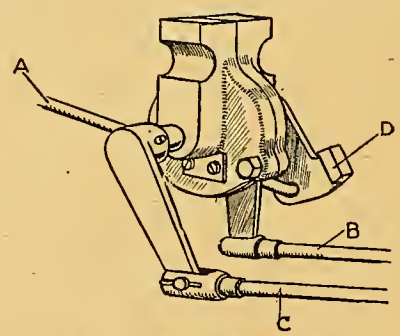
This gear, the mechanism of which was illustrated and described in our issue of October 26th, page 1128, has recently had embodied in its design an ingenious and simple form of control. In this gear there are two clutches, one a band brake for holding a portion of the epicyclic gearing stationary (and so being in effect a low gear clutch), whilst the other is a metal-to-metal clutch which is used solely for the high gear. These clutches are separately worked—one on one side of the hub, and the other on the other. It is, therefore, not an easy matter to devise a simple form of single pedal control to operate the two movements at one time. However, the designers have overcome all difficulties, and have devised a neat contrivance which accomplishes the end.



Operating pedal of the Brown & Hingston gear.

The first sketch shows the single pedal control, provided with a ratchet catch working over a quadrant fixed to the footrest rod, and partially held in position by the silencer bracket. It will be understood, of course, that this quadrant can be adapted to meet the requirements of any machine.

The rod proceeding from the shorter arm of the bell crank is shown as A in the second sketch, and is connected to a lever, which is provided with a trip catch, and which, as will be shown, can be

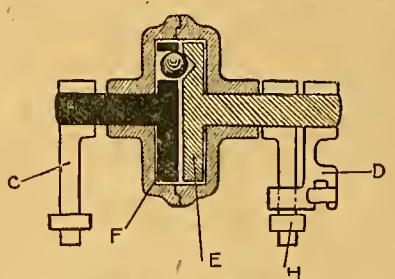


B. & H. two-speed gear operating rods.

used to operate either the rods B or C, the former being for the low gear clutch, and the latter for the high gear clutch. These levers are pivoted on rods which pass through a hollow box, a section of which is given in the third sketch. The trip lever D is connected to the disc E, whilst the lever C is in one with the disc F. These discs are not connected to one another, except as in the manner to be described, and are quite free to revolve with the levers. The lever H, which carries the rod B, hangs free on the shaft which connects the lever D to the disc E. The disc E has a conical depression in it opposite to a hole drilled through the disc F, and these two discs are held together by a ball which is placed between them, as shown, and is prevented from coming out of engagement by the left-hand wall of the box.

The normal position is for the direct driven, high speed to be engaged, this being accomplished by a spring inside the hub. The first movement of the gear pedal obtains free engine by the following means. The lever D is locked to the crank of the rod C by means of the two discs and the ball, and accordingly when the gear is in high-speed position pressure on the pedal puts the gear into free engine, the lever C withdrawing the high gear clutch.

The next movement of the pedal is, of course, to engage the low gear, but it is necessary in this connection to ensure that the high gear clutch is held out of engagement. When, in obtaining free engine, the gear pedal is moved to a certain point, the hole in the disc F containing the ball comes opposite a conical depression in the left-hand wall of the box, and since the pedal is applying pressure to the lever D, the result is that the ball is forced sideways by the sloping sides of the depression in the disc E, and in doing so locks the disc F to the wall of the box. This prevents the rod C moving, and the high gear clutch is accordingly held out of engagement. In the meantime, the ball having left the depression in the disc E, the lever D is free to continue its movement, which it does when the control pedal is pressed further forward beyond free engine position. In these circumstances the trip lever D engages with the loose crank H, and operates the low gear brake drum through the lever D. In passing from low to high gear the operations are, of course, exactly reversed.



Section of gear striking device.



QUITE THE BEST!

CONTINENTAL RUBBER NON-SKID

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ENJOY YOUR WINTER RIDING

in immunity from SIDESLIPS and PUNCTURES.

THIS TYRE IS MADE IN THREE TYPES.

(I) For lightweight machines. (II) For touring machines, and (III) For machines used with sidecar attachment.

Write for Booklet—"THE GREATEST EVENT OF THE YEAR."

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Veni! Vidi!! Vici!!!

M.C.C. Winter Run

London-Exeter-London.

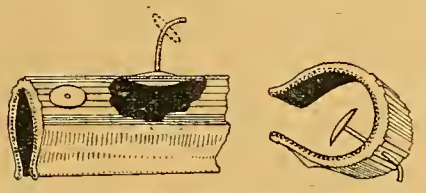
4 Rovers entered.
4 Rovers non-stop.
4 Rovers gain
4 Gold Medals.

Write for Catalogues, free.

The ROVER Co., Ltd., Coventry.

A New Method of Repairing Outer Covers.

WHAT is claimed to be a certain and permanent method of repairing small holes and bursts in tyre covers has been introduced by Brown Brothers, Ltd. The Sampson plug or clamp, which is the invention of a Canadian of that name, has been in use for some years in the United States and Canada, and although the idea of clamping cuts and bursts in covers was ridiculed when it was first introduced, over 200,000 per month are now being used, which is a proof of efficiency. The clamp holds the edges of a cut together and covers small holes.



The Sampson plug for repairing tyre cuts.

The device consists of a plug varying in size according to the extent of the cut or hole which is to be repaired. The plug has attached to the centre of it a screwed wire which is bent to form a lever by which it can be turned. Screwed on the wire is a metal washer coated with rubber. To fit the plug the washer is unscrewed and the wire inserted through the hole or burst from the inside of the cover; the washer is then screwed down the wire to the outer surface of the cover and can be tightened down on to the rubber by turning the wire to the left, until the washer is embedded in the tread. The wire is then broken off by nicking it close to the washer with a file and bending it backwards. In the case of long cuts two or more of the plugs may be used at intervals. The device may be seen at 15, Newman Street, Oxford Street, W

The Nominal Horse-power of Motor Cycles.

SURELY it is time that we cease to call the popular single-cylinder machine of the day 3½ h.p. It has been 3½ h.p. for some years now—in fact, ever since it was a baby—and has been getting larger and stronger ever since. This being so, it is time it went into knickers, as it were, for it is a baby no longer. Why not call it by its cubic capacity, or divide the different sizes as they do at Brooklands, calling one a Class A motor cycle and another Class C? This would be much better than lumping machines of varied capacity together under the not even approximate title of 3½ h.p. The most popular size is probably 85 × 88 mm. The horse-power of this size is variously given as follows:

The calculations are made in centimetres reckoning 2,000 revolutions per minute, except in the S.M.M.T. and Lanchester formulæ, where the inch is the unit.

R.A.C.	$\frac{D^2N}{16}$	4.55
Dendy Marshall	$\frac{D^2SN \text{ revs.}}{200{,}000}$	6.36
Hospitalier	$\frac{r^2SN \text{ revs.}}{75{,}000}$ (r = radius)	4.24
S.M.M.T.	$.197\,D\,(D-1)\,N\,(R+2)\;R=\frac{S}{D}$	4.7
Rüde	$.006\,D^2SN$	3.82
Coventry and Warwickshire M.C.	$\frac{D^2\sqrt{s}\,N}{18}$	3.76
Lanchester	$\frac{.5\,D^2N}{\sqrt{\frac{1}{R}+.3}}$	5.0
Poppe	$\frac{DSN}{16}$	4.67

It may be inconvenient for makers to test their engines on the brake and give us the b.h.p. in their catalogues, a consummation devoutly to be wished, but I contend that every maker can and does make an engine which, in the usual motor cycle sizes, is capable of giving 1 h.p. for every 100 c.c. capacity, and that in ordinary touring trim. What these engines are capable of when specially tuned up and adjusted to give their utmost power for limited periods is little short of marvellous, and can be arrived at by simple calculations. Some years ago I rode a 3 h.p. motor cycle having an engine 75 mm. bore by 80 mm. stroke, 353 c.c. Now if this engine could develop 3 h.p. in 1905, and it most certainly did, what can be said of a modern engine of 200 c.c. more which only develops 3½ h.p.? Of course, we all know that it is far more powerful than that, therefore, as Ko Ko once remarked, "Why not say so?" One well known engine is said to give 7 h.p. on the brake, and I can well believe it, judging from its performance on road and track. This engine is the popular 499 c.c. size, and it gives this power in touring trim. When specially tuned up, I should be rather afraid to say what it does give even if I produce "corroborative detail to give verisimilitude to a bald and unconvincing narrative."

URIGA.



Mrs. K. B. Willett, of Bexhill, an enthusiastic rider of a Motosacoche, which she uses winter and summer alike.

Cost of Running a Motor Cycle.

A Selection of Replies to a Reader's Query.

See also pages 1197, 1247, 1318A, 1357, 1380, 1422 (1911), 5 (1912).

Sir,—The following may be of interest from the fact that it includes the running of an ordinary push-cycle attached to a motor cycle:

Capital outlay—

Second-hand 3½ h.p motor cycle and driver's licence	£28 15 0
Lady's ordinary second-hand bicycle	7 0 0

	£	s.	d.	d.		
Carbide		3	4	= .02 per mile		
Oil, lubricating, 7 qts. ...		8	6	= .05 ,,		
Petrol, 23 galls.	1	6	5	= .18 ,,		
General repairs, tax, and proportion of cost of one suit of overalls	3	0	0	= .40 ,,		
Tyres: Retreading one cover and proportion of new one	1	5	0	= .17 ,,		
Belt, proportion of new one		5	0	= .04 ,,		
				.86 ,,	£6	8 3
Lady's cycle (ridden 1,000 miles): Proportion of new cover, repairs, and coupler				= .36 ,,	1	10 0
				1.22 ,,		
Total running expenses ...					£7	18 3
22% depreciation on motor only... Lady's machine too old.				.80 ,,	6	0 0
				2.02 ,,		
Total cost for season's running					£13	18 3

Miles run: Motor cycle, 1,800; lady's cycle coupled, 1,000.
Consumption: Petrol = 78 m.p.g.; oil = 1,040 m.p.g.

REGD. ALLENBY.

Sir, — The letters from readers appearing in *The Motor Cycle* on cost of running a motor cycle are very interesting though divergent in the various estimates, yet there is one noticeable feature in them all. None of the writers refer to the train fares that they save by this means of travel. Surely before entering the arena of motor cycling, the writers would have to travel by train, hence though their estimates of cost of running may be correct, are they not to allow some credit for what has previously been spent on train fares? C.M.

Sir,—As I have seen weekly in your most excellent paper various opinions as to the running cost of a motor cycle, may I be allowed to give mine? My machine is a 1910-11 Douglas. I have run last year 4,972 miles at a cost of £17 6s. 6d. My chief trouble during that period was tyres. The ones fitted to the machines originally are now replaced by a Michelin on front and Palmer cord on back. Both tyres are perfect and will run all this year; also I have had two tubes which should not have been necessary. My chief trouble was leaking butt-ends. Never again butt-ends for me. I have also included £6 for depreciation. Repairs to the engine are nil, and the expenses under this head are two inlet and exhaust valve springs, also a tin of grinding powder and getting valves trued up on lathe.

Mileage run, 4,972.	£	s.	d.
Tyres and tubes	3	8	8
Engine		3	4
Two belts and fasteners	1	10	11
Petrol and oil	3	1	1
Extras		1	6
Sundries	1	15	0
Depreciation	6	0	0
Licences	1	6	9
Total	£17	6	6

Cost per mile = .836d.

I see in the issue of December 28th "A.F.W." can only manage 1.42d. per mile for a greater mileage than mine.

A. E. W. WEMYSS.

Sir,—Seeing that several readers of your valuable journal send the running costs of their motor cycles, I would be pleased if you could include mine. The machine is a 1910 F.N. 2¼ h.p. two-speed shaft-drive. I am middle aged (about fifty), and my average speed is about twenty miles per hour with an occasional burst on open roads up to thirty-five miles per hour. My expenses for tyres are rather heavy, as I have only just fitted new ones at an outlay of £3, and only used the machine eighty miles since.

Cost of running a 2¼ h.p. two-speed shaft-drive F.N. 4,926 miles, thirty-six gallons of petrol (140 m.p.g.), five gallons of lubricating oil—

Tyres, new last month	£3 2 0
Licences	1 5 0
Engine, frame, and fittings	2 6 9
Plug	3 6
Petrol and lubricating oil	3 3 4
Extras, new lamp, cyclometer, overalls, etc.	2 13 9
Total expense	£12 14 4

Approximate cost, ½d. per mile. A. POTTERER.

Sir,—The following statement of running expenses of a 1910 (July) P. and M. during 1911 may be of interest:

Clothing, taxes, and insurance	£7 5 11
Equipment (head light, parts, etc.) ...	4 14 7
*Tyres, tubes, and repair outfit	7 2 4
Oils, carbide, and chain grease	1 11 2
Repairs and renewals	7 15 6
Petrol	6 18 10
Depreciation, say	10 0 0
	£45 8 4

*Both the covers on the bicycle are practically new, and will run on well into 1912, but I have counted the whole cost of them in this statement.

From January 1st to December 31st the machine ran 7,365 miles solo and 1,946 miles with a sidecar, making a total mileage of 9,311. Therefore the total cost works out at under 1½d. per mile, which, I think, is very good.

The petrol expenditure is unduly high, owing to twenty-six "centuries" run "on the Continong," where, as you know, "essence" is from double to treble the price it is in England. SKY PILOT.

Sir,—Herewith I beg to send you particulars of cost of running a 5-6 h.p. four-cylinder F.N. (494 c.c.) with sidecar; weight with passengers about 700 lbs.

Mileage (period, May 19th to December 31st, 1911)—

Solo (single gear)	100	miles (approx.)
With sidecar (single gear) ...	2,700	,, ,,
With sidecar (two-speed gear)	400	,, ,,
Total as per cyclometer	3,300	,, ,,

Petrol consumption = 66 miles per gallon.

Capital account—

Motor bicycle	£52 10 0
Sidecar complete	8 7 6
Two-speed gear	10 10 0
Motor house (10ft. × 7ft. × 6ft.)	9 0 0
Extras on machine	5 17 0
Total	£86 4 6

A summary of my expenses is as follows:

				Pence.
Tyres and tubes ...	£6 7 0	on 3,300 miles	=	.4 9
Petrol	4 5 8	,, ,, ,,	=	.311
Engine and ignition ...	11 4	,, ,, ,,	=	.041
Transmission	2 1 9	,, ,, ,,	=	.151
Extras	3 7 3	,, ,, ,,	=	.244
Licences	1 15 6	,, ,, ,,	=	.129
Depreciation	5 16 0	,, ,, ,,	=	.421
Total ...	£24 4 6	Total per mile		1.736

With regard to the depreciation costs, since these machines wear so well, I consider that 20s. per 1,000 miles is ample, if not too much. FRITZ C. SCHOVE.

CURRENT CHAT

TIME TO LIGHT LAMPS.

January 18	...	...	5.20 p.m.
,, 20	...	...	5.24 ,,
,, 22	...	...	5.27 ,,
,, 24	...	...	5.30 ,,

North-west London-Gloucester Run.

The machine ridden by J. Beal in the above twelve hours' trial was a 3 h.p. twin-cylinder N.S.U. fitted with the firm's two-speed gear.

A. V. Deacock, who won a silver cup in the London-Gloucester Run, was mounted on a N.L.G.

Auto Cycle Union.

A lantern lecture, entitled "Speed and Power," will be given on the 1st prox., at 8 p.m., at the R.A.C. Associates' Room, 89, Pall Mall, S.W. The secretary of the A.C.U. will be pleased to send any reader a ticket of admission.

French Reliability Trial.

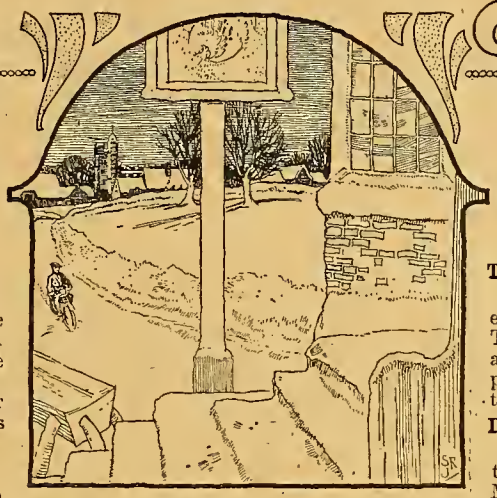
Our French contemporary *L'Auto*, which is always to the fore in organising motor car, pedal cycle, and athletic events, will organise a big motor cycle trial this year, the date of which is not yet decided.

Beach Racing in Yorkshire.

Motor cycle races have been suggested on the fine stretch of sands at Saltburn-by-the-Sea (Yorks). The Yorkshire A.C. holds speed trials there every year for cars, and high speeds are attained. The 200 h.p. Darracq is credited with 121 m.p.h. over a measured kilometre. In addition, going to and from the sands, there is a sporting hill with S bends which would make a good test hill if it was decided to run a speed trial and a climb together without change of gear. Secretaries of adjacent clubs and others who are interested should write Mr. J. H. Baines, Mayhouse, Saltburn, who will be pleased to assist or provide further particulars.

Hotel Keepers and Motor Cyclists.

During the hot weather last summer, two motor cyclists entered an hotel, which held the A.A. and M.U. appointment. The travellers were dusty and travel-stained, and on their asking to be served with tea, the proprietor told them they were too dirty to be served, although one of the motor cyclists mentioned that they intended to remove their overalls before entering the coffee room or sitting down to their meal. The motor cyclists naturally resented the tone used towards them, and the landlord then insulted them, and forcibly ejected one of them from the house. The one who was ejected could have probably summoned the proprietor for assault. However, the matter was reported to the A.A. and M.U., who took it up strongly with the proprietor of the hotel, and after the report had been gone into by the A.A. and M.U Committee, it was decided to cancel the appointment. The A.A. and M.U. are to be congratulated for taking up the matter successfully.



The T.T. in America.

The British Tourist Trophy, won by O. C. Godfrey, was exhibited on the Hendee Manufacturing Co.'s stand at the New York Show, which closed last Friday. It is being transported to the Chicago Show.

Silver Medal Winners in the Exeter Run.

The winners of silver medals in the M.C.C. London-Exeter and back run are: S. Browne (3½ h.p. James sc.), A. Mabon (3½ h.p. Rudge sc.), S. Sawer (3½ h.p. Premier), and F. Thomas (7 h.p. G.O.K. sc.).

A New Form of Winter Sport.

The latest invention in the form of winter sports is the "Bicycle Luge," of which we give an illustration on this page. A Swiss reader, in sending us the photograph, says: "The speed up to which it will travel is 60 to 70 m.p.h. on a good run. The steering is the same as an ordinary cycle, and corners may be taken with ease. Brakes are not necessary, as one can stop easily by dropping both feet to the ground. The rider's feet are supported by a crossbar, extending right and left of the frame. It is steadily gaining favour amongst the English people in Switzerland."



The "Bicycle Luge," which has a diamond frame of wood.

SPECIAL FEATURES.

STREAMLINE BODIES.
A Novel Suggestion.

THE CUT-OUT AGAIN.

THE HORSE POWER OF MOTOR CYCLES.

This Year's T.T. Race.

The French daily sporting press is enthusiastic over the idea of running the Tourist Trophy Race in France this year, and urges French manufacturers to prepare themselves in the event of the race taking place there.

Dieppe or Douglas.

We hear that with about two exceptions the whole of the members of the Manufacturers' Union have signed the bond not to compete in a T.T. race in the Isle of Man. It would therefore appear that even if the A.C.U. obtain permission to hold the race in the Isle of Man it will have little or no trade support. The signing of the bond does not prevent makers taking part in a similar race if it be held elsewhere, say in France. *Vive la France!* It looks as though we shall have to polish up our French for this event.

Tour on the Continent.

An interesting lecture was given on the 9th inst. by Mr. H. Meyer, the editor of *De Kampioen*, a Dutch motor cycle journal. The subject was a recent tour taken by the lecturer and Mr. W. W. Douglas, which, starting from Arnheim on October 3rd, extended through Germany, Switzerland, and Italy, as far as Bologna. The Alps were crossed several times by the St. Gothard, Simplon, Mont Cenis, and Tenda passes. On the return journey the coast was followed to Marseilles, from which place Paris was reached in two days. The machines used were 2¾ h.p. two-speed Douglases.

Brooklands and the Six Days' Trials.

Messrs. the Stewart-Precision Carburetter Co. have read with interest our suggestion regarding the finish of the Six Days' Trials at Brooklands, and noticing the chief objection of the Auto Cycle Union to the scheme, namely, that of expense, they have generously offered to guarantee the Union against any loss resulting from the engagement of the track. We think it would be impossible for any firm to have come forward with a more generous and sporting offer, and we sincerely hope that now the principal objection has been removed, the A.C.U. will see fit to fall in with the idea. In the event of the offer being accepted, the Stewart-Precision Carburetter Co. will deposit the sum of £25 with *The Motor Cycle*.

At a meeting of the Manufacturers' Union, which was held in London last week, the question of transferring the final day's run of the Six Days' Trials to Brooklands was discussed, and received the approval of the majority of those present. Surely the arrangements at Taunton cannot have progressed so far as to prevent this very sporting offer of the Stewart-Precision Carburetter Co.'s being accepted by the A.C.U.

The Number of Motor Cycles.

A careful estimate based upon official returns places the number of motor cycles at present in use in the British Isles at 63,000 (see page 60).

The Proposed Reliability Trial in France.

Matters are taking shape for an international reliability trial in France at Eastertide. The suggestion is to hold a two days' trial, one day being devoted to the reliability test, the other to a sporting hill-climb.

Globe-girdlers on Motor Cycles.

Wm. Strieff and Joseph Esler, the American tourists mounted on a N.S.U. and Indian respectively, who were in England last summer, are at present touring through Europe, and were recently entertained by the N.S.U. and Peugeot Co.'s.

International Motor Cycle Race in America.

There is a movement on foot in America to promote a two-hundred miles international sweepstake on the Indianapoli Course. The promoters hope that the F.A.M. will support the scheme by holding a race meeting jointly with the event.

The Wintry Weather.

A non-stop run from London to the Glasgow Show was arranged for the beginning of this week on a 3¾ h.p Premier sidecar with a member of our staff as passenger, but the severe weather and deep snowdrifts up North rendered the ride quite impossible.

Liability of Road Authorities.

We are constantly receiving queries regarding the liability of road authorities. Therefore a decision of the Swansea County Court should be noted. The case was that of a motorist who was awarded damages against the Glamorgan County Council for injuries caused to his vehicle through a portion of the road between Swansea and Mumbles being improperly repaired after an excavation. The case was fought by the A.A. and M.U., and the Judge apparently attached considerable importance to the fact that the defendants could not call evidence as to the condition of the road immediately after the accident, and that after the matter was reported to them the hole had been properly filled in. This decision should benefit all road users.

A Brooklands for Berlin.

Germans are fertile in projects that fail to materialise; consequently we take the liberty of contemplating with the eye of scepticism a scheme to construct, at the Berlin-Johannisthal flying ground, a three-mile track, or, to be more precise, a circular course over which push-cycle and motor cycle races could take place, notwithstanding that we are assured of the construction being taken in hand early in April. Bankings would hardly be necessary, in view of the great radius at the turns. Whatever becomes of the scheme, there is no doubt that cycling Berlin stands in great need of a course of the kind, the opposition of the authorities to road events, more especially those concerning the mechanically-propelled machine, helping in a large measure to keep down a sport already handicapped by a severe liability law and vexatious licensing arrangements.

An Enthusiastic Trio.

Ever since Harry Bashall witnessed Sam Wright reel off laps at Brooklands at sixty miles per hour, he has hankered after one of the little twin Humbers. He and his youngest brother A. B. T. have just got one each, and they are having a tiny little sidecar fitted to one of them.

J. T. Bashall is contemplating a twelve hours' ride on his record-breaking Bat sidecar early in the spring.

English-Dutch Reliability Trial.

Entries continue to reach us for the above trial. Mrs. Wade, of Cardiff, is the second lady competitor. She will ride a 3¾ h.p. Scott. Further amateur entries are André Manheim (T.A.C. sidecar). E. B. Ware (Chater-Lea sidecar), and Richard Cussons (3½ h.p. New Hudson). The latest trade entry is F. C. North (3½ h.p. Ariel). R. G. Mundy will ride a 2½ h.p. two-speed Singer if chosen.

FUTURE EVENTS

Jan. 20.—Herts. County A.C. Open Trial.
" 20.—A.C.U. Annual Dinner.
Feb. 17.—Sutton Coldfield A.C. Open One Day Trial.
Mar. 2.—A.C.U. Open One Day Trial.
" 23.—B.M.C.R.C. Race Meeting.
" 30.—Derby and District M.C.C. Open Hill-climb.
Apl. 5-8.—N.W. London and Herts. County M.C.C. Joint Trial and Open Hill-climb (Yorks.) and Ladies' Competition.
" 8.—Westmorland M.C.C. Open Hill-climb at Shap Fell.
" 13.—Oxford M.C.C. Open Hill-climb

The Cut-out Abolished.

In view of the amount of space we have devoted to silence and silencers in an earnest endeavour to reduce the noise of motor cycles, it is interesting to note that one large firm, to wit the Hendee Manufacturing Co., has set an excellent example by deciding to abandon the fitting of cut-outs to their machines in future. Let us hope that this is the beginning of the end of the noise outcry.

Illumination of Number Plates.

The *Aberdeen Journal* of the 12th inst. says a motor cyclist was summoned and fined at Elgin, N.B., on the 11th inst. for failing to have the tail lamp of his motor bicycle lighted. Possibly the reporter may have mistaken "motor bicycle" for motor car. If this be not the case, the conviction is a wrongful one, and can be quashed at any time. A summons could only hold good if the defendant had been driving a tricar bearing motor car numbers.

Entries for Saturday's Open Reliability Trial.

The first of the series of four 100 miles open reliability and sporting trials for motor cycles of all kinds, organised by the Herts. County A.C., will be held on Saturday next, the 20th inst., starting from the Chequers Hotel, Uxbridge, at 9.30 a.m. prompt. On account of the large entry, the start has been put back half an hour to ensure competitors finishing in daylight.

The route is *via* Denham Avenue, Rickmansworth, Watford, St. Albans, Harpenden, Luton, Sharpenhoe, Dunstable, Ivinghoe, Tring (lunch Rose and Crown Hotel), Aston Clinton, Wendover, Princes Risborough, Missenden, Amersham, Rickmansworth, Uxbridge.

There will be two timed hill-climbs, as well as an observed ascent of Holywell Hill, St. Albans, at 10 m.p.h.

The series of Herts. County trials will to all intents and purposes fill the gap occasioned by the abolition of the A.C.U. Quarterly Trials, although, of course, private owners will predominate in the Herts. County events.

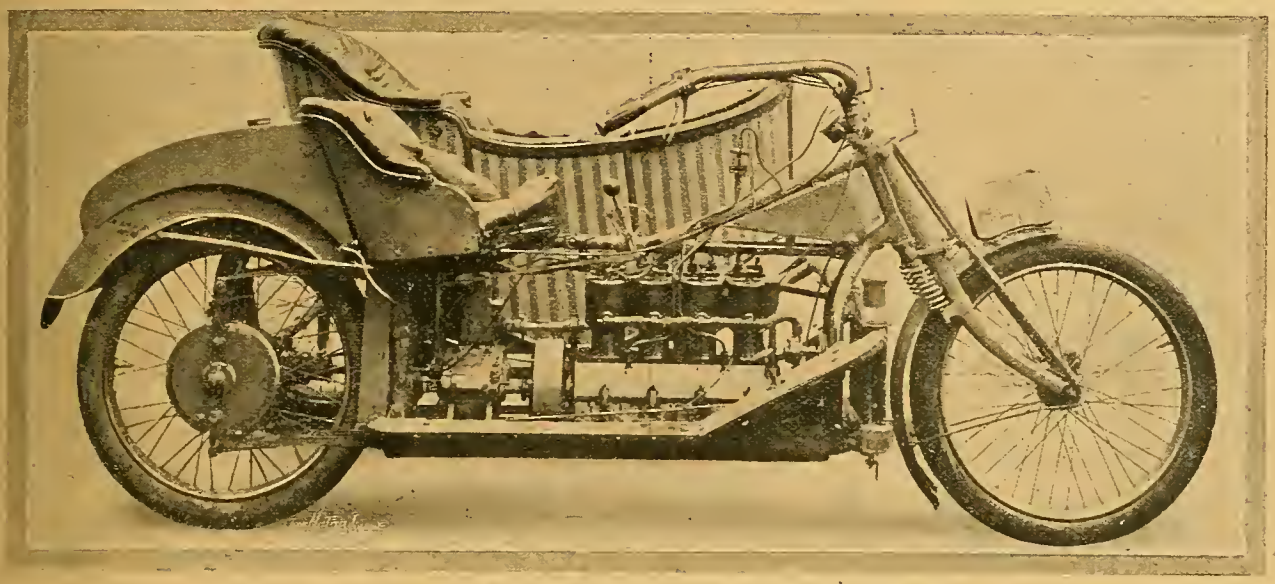
Entries are as under:

V. Wilberforce (2¾ Douglas)
T. E. Seear (2½ Motosacoche)
J. Holroyd (2½ Motosacoche)
E. A Marshall (S.I.A.M.T.)
F. W. Applebee (2¾ Centaur)
C. Aslin (2½ Grandex)
W. A. Jacobs (2½ Singer)
A. G. Fenn (2¾ Humber)
H. Berwick (2¾ Humber)
G. L. Fletcher (2¾ Douglas)
H. Haddock (2½ A.J.S.)
C. C. Cooke (3½ Triumph)
W. F. Newsome (3½ Triumph)
W. H. Elce (3½ Rudge)
A. J. Sproston (3½ Rudge)
B. A. Hill (3½ Rudge)
E. C. Jarvis (3½ Triumph)
G. T. Gray (3½ Rudge)
A. J. Dixon (3½ Rudge)
W. Cooper (3½ Bradbury)
W. Wilson (4¼ Howard-Precision)
Roy Walker (3¼ New Hudson)
H. G. Dixon (3½ New Hudson)
J. Oliphant (3½ Premier)
A. N. Gutteridge (3½ Triumph)
R. Fletcher (3½ Premier)
L. Cass (3½ Quadrant)
R. N. Stewart (3½ Trump-Jap)
G. Griffiths (3½ Rover)
P. H. Bentley (3½ Triumph)
H. C. Mills (3½ Premier)
H. Cooper (3½ Bradbury)
R. G. Mundy (3½ Singer)
M. Drew (3½ Zenith)
W. H. T. Rhys (8 Zenith sc.)
H. H. Jones
A. R. Abbott (3½ Bradbury)
V. Taylor (3½ Rudge)
C. W. Meredith (3½ Bradbury)
G. Witham (6 Matchless)
E. A. Colliver (6 Enfield)
E. A. B. Tooth (5 Rex)
W. O. Oldman (8 Bat sc.)
B. T. Rice Pyle (8 Bat sc.)
F. W. Parnes (6 Zenith sc.)
A. B. Wade (6 Zenith sc.)
E. Tee (6 Zenith sc.)
G. S. Drew (6 Zenith sc.)
C. R. Taylor (8 Chater-Lea sc.)
E. G. Attenborough (7-9 Indian sc.)
C. E. Holmes (8 Chater-Lea sc.)
F. Begley (8 Chater-Lea sc.)
F. Smith (5-6 Clyno sc.)
G. W. Hillier (G.W.K. quad-car)
G. Baxter (2¾ Saxon)
W. P. Tippett (3½ Brooklands-Jap)
H. H. Matthews (3½ Zenith)
S. O. Timson (3½ Rudge)
E. J. Bailey (3½ Ariel)
J Woodhouse (3½ Precision)
R. G. J. Charlesworth (3½ Zenith)
F. A. Hardy (5 V.S. sc.)
Averies Ponette Co. (Ponette)
Beal (N.S.U.)
Halsall (Clyno sc.)
C. M. Down (Enfield)
Brumley (Rex)
Blackburn (—)

An illustrated description of the trial will appear in our next issue.

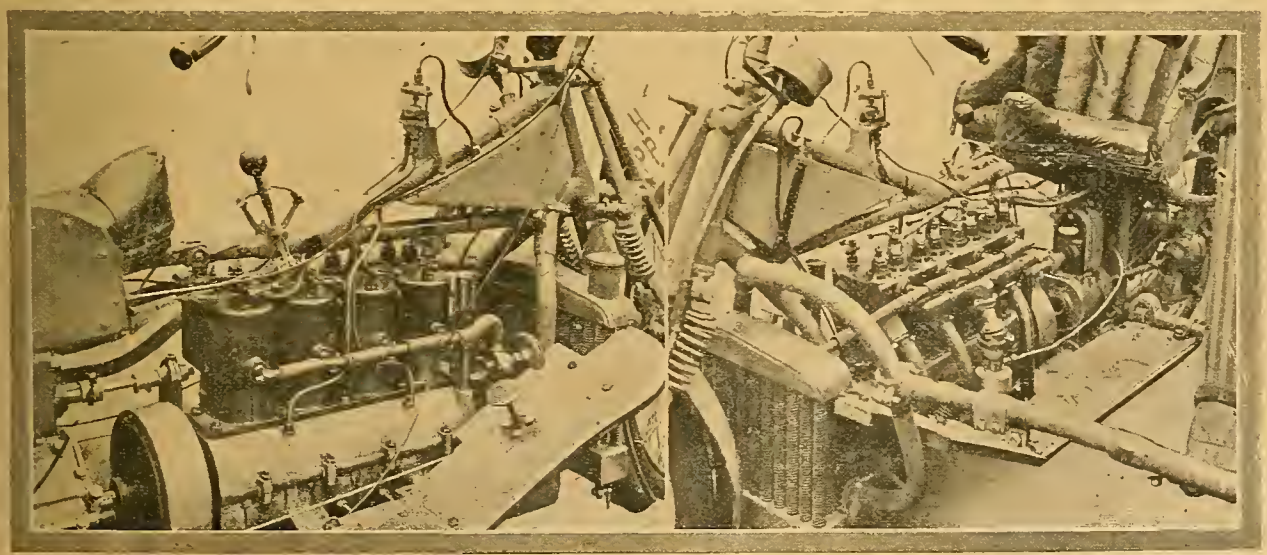
THE 1912 MODEL T.M.C.

A New Water-cooled Engine with Mechanically-operated Valves.



The new model four-cylinder water-cooled T.M.C. with coach-built sidecar attachment.

ON page 1352 of our issue of December 7th last we gave some preliminary details of the new 7 h.p. T.M.C. On the occasion of our visit last week to the Wilkinson Sword Company's works, Southfield Road, Acton, we were, through the courtesy of Mr. Kirschbaum, able to see one of the new models undergoing its preliminary road tests. These are almost complete, and in April the first batch of machines will be ready for delivery. The machine being almost complete we were able to see it in practically its final state, and are enabled to elaborate on the description in the article referred to above. The rotary oil pump driven off the camshaft delivers air pressure to the oil reservoir, forcing the lubricant through a sight feed direct to the crank case by two separate pipes leading to the two crank case divisions. Any excess of oil is returned by the pump to the reservoir. The water pump is driven off the camshaft by means of a wire belt. This pump, which is of the gear wheel type, delivers the water to a gilled tube radiator neatly carried in front of the machine. The leather-to-metal clutch, with springs under the leather to allow the drive being taken up smoothly, has its internal portion made of a spring steel pressing. It is provided with six longitudinal equally-spaced slots in its periphery, which cause it to contract when forced into the outer portion and at the same time to exert an internal pressure which ensures a steady grip, and con-



Views of the engine which, as will be seen, has the valves all on one side. The left hand illustration also shows the change speed lever and sight-feed lubricator. The right shows the carburetter and its connections, also the sidecar fixings.

The 1912 Model T.M.C.—

sequently a positive drive. The clutch is provided with three external springs (following car practice), allowing easy adjustment and permitting the clutch to be readily dismantled.

Undergoing a Long Road Test.

During our visit the Stewart Precision carburetter was undergoing its final tuning preparatory to the machine entering on a series of prolonged road tests. The control is arranged as follows: Off side a pedal controlling the clutch and internal expanding brake. On the handle-bar a lever controlling the external contracting brake working on the same drum, which is ribbed and lined with Raybestos, the pedal on being depressed first withdraws the clutch and then applies the brake. Near side, accelerator pedal on footboard, and lever on handle-bar controlling clutch. The object of the hand clutch control is to facilitate starting from rest. With pedal control a rider may upset his balance, inadvertently extend his foot to save himself, and let in the clutch against his will, with disastrous results. The gear sector is brazed on to the top tube of the frame. The gear actuating rod in the gear box is provided with holes in which a spring plunger engages, so that in case of wear on the control rod joints the gears will stay in position independently of the notches on the sector. The magneto, neatly carried on the top of the gear box, is coupled to the end of the driving-shaft (it is gear driven) by means of a sleeve. By undoing one bolt the sleeve may be rotated in relation to the shaft, and the magneto timed with the greatest facility. As far as one could judge from its running at this early stage of its career, the engine gave every indication of being excellently balanced, while its silence and smoothness left nothing to be desired. It was fitted to a T.M.C. sidecar, which is mounted on laminated springs like the bicycle, and reverting to the latter it may be pointed out that by undoing the four spring shackle bolts and the brake connections the rear wheel can be removed quickly and without difficulty for tyre changing. To sum up, the new water-cooled four-cylinder T.M.C. gives every indication of promising to be one of the most luxurious and practical sidecar machines on the market. Our next reference to this ambitious two-wheeler will deal with its behaviour on the road.

THE NUMBER OF MOTOR CYCLES.

WITHIN the last few days it has been stated in a motor cycle paper that the number of motor cycles registered in the United Kingdom is 106,000 odd.

We believe we know the unacknowledged source of these figures, but they are entirely wrong, as may be gathered from the fact that the total number of motor cycles officially returned as paying licence was 48,857 for the year ended 31st of March, 1911.

It is quite safe to assume that since March last a record number of new motor cycles have been registered in comparison with the corresponding period of any other year, but it is equally certain that their number does not amount to anything like 58,000; probably, 15,000 is a considerable over-estimate, as a very large number of 1911 models would have been delivered and registered prior to March 31st.

63,000 Motor Cycles in use.

However, this estimate has been arrived at after careful calculation and comparisons with previous years, so we will assume that there were 15,000 more; that brings the total up to 63,000. This is a very long way short of 106,000, and it is therefore obvious that, if there are 106,000 registered motor cycles in the United Kingdom, somewhere about 43,000 owners are evading the payment of licences. We think we are safe in assuming that the tax-gatherers have not been so lax as to let a revenue of approximately £43,000 slip through their fingers, and we may regard the total of 106,000 as another evidence of the absolute uselessness of figures based upon the total number of registrations issued, for the simple reason that so many of the registering authorities have no record of the cancellation of many of the numbers they issue. Some, we know, keep their registers most carefully, others do not, and, therefore, any totals based upon registrations are hopelessly misleading, as they form no guide to the actual number of motor cycles in use, for our figures based on the official returns show that the alleged total is 59.43% in excess of facts.

Unfortunately the figures are noticed and often seized upon for quotation, without any consideration of verification or accuracy.

A WINTRY SCENE IN THE PEAK DISTRICT.



The above photograph was taken during last week's cold snap.



By W. Fawcett

TO THE TYROL AND BACK ON MOTOR CYCLES

(Continued from page 42.)

A Kindly Swiss Girl.

A drop down to Sattel, with Lake Aegeri on our left, and we were climbing in earnest again. However, the descent came at last, and with it another lovely panorama of Lake Zurich, away down below. We stopped here for some time admiring the view, perched on a bank in the shade of some pine trees.

Once on the lake side, the road to the right was taken, the one on the left leading to a bridge over the lake to Rapperswil. At Lachen we decided to take in petrol, and, whilst I saw to the machines, Grange had his overalls sewn up by the proprietor's daughter, who saw the tear first and very thoughtfully came out with a needle and thread.

Leaving Lake Zurich, we turned to the right, and were on a long, straight road bordered with tall trees. With no town of any importance on our main route, we decided, in the late afternoon, to go a little out of our way to Glarus, and now entered a valley with towering peaks on either side.

Glarus was soon reached, the day's run being seventy-five miles only, but the odd half hours we spent in admiring the scenery, a bumpy road, and the difficulty of finding the way, made the run seem long. We stayed at the Hotel Eidgenossen, which we found rather dear, but good.

Next morning—Friday, 21st July—we set off to retrace our steps a bit, and Grange, having lowered his gears, set off with a roar, whilst I was hot on his heels when my engine started misfiring, until I put in a new plug, and, although there seemed nothing wrong with the old one, the trouble was cured straight away. The descent was very twisty, but the view superb, and down below in the distance, on our left, like a shining emerald, was the romantic Lake Wallen.

Sargans was quickly reached, and a little further on Bucks, where, crossing the Rhine, we went through a barn-like bridge, and nearly ran over a customs officer, for we had just left Switzerland, and were now in Austria.

C.T.C. Unrecognised in Austria.

We walked into the Customs House, where another officer took our C.T.C. tickets, which were separate ones for Austria, and began to fill in particulars on a form. When he came to the words on our tickets, "Motor Zweirad," he suddenly stopped, went outside, where the other officer had, meanwhile, affixed seals to our machines, and began shaking his head. At last we understood that our tickets were of no use, for, he said, the C.T.C. was for cyclists, and not motorists. In vain did I try to explain that we had paid £7 for the two of us to the secretary, to be returned when we got our papers discharged, but it was of no use. Then an idea seemed to strike him, for, sitting on the steps, he folded his arms and said: "Tuff! tuff! Sh! sh!" As Bucks was only a few yards off, and we had just passed the station, it seemed quite likely to associate his behaviour with playing at trains. At last we understood that if we went to the Frontier Customs Officer at the station he might let us through.

At the station we were lucky in finding a very decent fellow who could speak fairly good English, and we tried to get through without paying duty, but after half an hour it was of no avail, so we returned to the first Customs House and paid about £9 in duty, which, we were told, would be returned at any Frontier Customs House we cared to leave by.

Seals were re-affixed, and pieces of very stiff cardboard were given to us for the Matchless and Bradbury, about six times the size of our number plates, bearing the numbers ZWI 540 and ZWI 541.

This incident having taken a very long time, we decided to spend the night at the next place of any importance. The road was very bumpy and loose, and soon finding Grange was not following, I waited, then returned, and found him with his back wheel out, putting in a new inner tube, having had a puncture and run out of solution. This done, we again set off and soon came to Feldkirch, with a short bridge over a deep cleft, and a river swirling below. Up and down the main street of this quaint Austrian town we rode looking for an hotel, until someone in buttons raised his hat, and, looking up, we found the Hotel de la Poste et d'Angleterre, where we decided to stay. Only fifty-five miles to-day, but it seemed a long run and full of interest.

Steep Hills and Lowered Gears.

Next morning we had breakfast with an American who was driving a Packard car, and had been to see the Stelvio. I think what impressed him most, and ourselves for that matter, was that he had been halfway up the pass, and in returning had to reverse on twenty-two corners out of twenty-four to get round, so it could have hardly been a joyful ride.

Requiring petrol, we stopped at the first shop—it was a small garage—and both filled up. The owner was quite interested in our machines, and a statement that the machines were capable of a speed of 60 m.p.h., if properly tuned up and the conditions were all right, brought an incredulous smile to his face. Taking us to a corner of his workshop, he showed us parts of an engine he was making. We had great difficulty from laughing outright, for he had a connecting rod with tremendous ball bearings, whilst the little end holding the gudgeon pin was *welded* on!

To the Tyrol and Back on Motor Cycles.—

We followed the river out of the town, then turned to the right over a bridge, and were soon in country that must have lately been swept by flood, for there were tree trunks and driftwood all over the fields. We were now making for the Arlberg Pass, and the mountains on either hand were impressive.

The road began to rise gradually, and on a short steep patch I pegged out, much to my astonishment and Grange's amusement, who lowered his gear and smiled knowingly the while I reluctantly cut my belt and lowered my gear from 4⅓ to 1 to about 4¾ to 1; this was the first time I had touched my belt or lowered my gear since leaving home, and although the pass did not appear so stiff, on taking a backward look it seemed a hill indeed. At Stuben I could see a nice mix-up of twisty zigzags up the mountain side, and again decided to reduce my gear to 5¼ to 1. We adjourned to the hotel at the summit and had a nice cool lemonade each. For the descent we raised our gears, and soon met a car slogging slowly along uphill with steam coming from the filler cap four feet high; then another one was passed with a horrible smell of burning brakes. A nice stretch of perfectly straight road through fine trees, with the peak of a mountain at the end, now came into view.

Hereabouts the Arlberg Railway leaves the bowels of the earth, and was our companion at intervals for several miles.

A small stream may be noticed near the summit of the pass, and it is more than interesting to watch it gradually swelling until a few miles down it is a swirling torrent, and in parts appears to be nothing but foam. The scenery is magnificent. The road does not descend as quickly as the river, and in one place in particular, where the river is joined by another, it is spanned by a magnificent single span bridge; the sight from a great height up as one looks over a wall bordering the road is one not easily forgotten.

A turn to the left at Landeck, then a straight run to Imst, where we decided to fill up with petrol, six kronen, or about five shillings, being charged for a gallon and a half. Soon after leaving Imst I passed Grange running with his belt slipping, and noticing later he was not following I returned, and found him putting a new butt-ender in, as the one he had been using was splitting all the way round, presumably where it had been folded in his box.



(A) A halt at a village shop near Langnan, Switzerland. (2) At the bottom of the Arlberg Pass Austria. (3) Old castle on the Brenner Pass, Tyrol. Note the sign in foreground warning tourists of the dangerous corner.

Help for the Helpless.

We met a perspiring individual pushing a very old crock with the front tyre flat. The poor chap was nearly wet-through with pushing on this hot day, so we took out his tube. Oh! dear! what a tube! If it had one it had quite twenty-five patches all ready for coming off. A split was repaired with one of my biggest patches, and at last we got him off after many expressions of thanks.

To the Tyrol and Back on Motor Cycles.—

The road now got frightfully dusty, and we were nearly choked by an overtaking car, which, however, we soon repassed in trouble as we rode into Innsbruck. We put up at the Arlbergerhof; this hotel was good, but the arrangements for meals most unsatisfactory, the system being that you had to have them in an adjoining restaurant and pay for them separately, provided the staff were not too busy to wait upon you.

Innsbruck and the Brenner Pass.

Innsbruck seemed very prettily situated, and was full of climbers, or, perhaps I had better say, those apparelled as such in wide knickers made of fancy leather or velvet, a fancy waistcoat over a white shirt, whilst the furry green hats with feathers, or what appeared like a gigantic shaving brush, stuck up saucily behind the crown, "capped the lot."

Our run to-day had been 106 miles, and the petrol bought had cost over 10s.

Next day, Sunday, the 23rd, we again set off on another glorious but hot day, and before we were out of Innsbruck I struck a villainous gutter. Hastily putting up my hand, I was too late to stop Grange, and he caught the long exhaust pipe of his Bradbury and broke it beyond repair, so he wrenched it off and threw it into a field.

The Brenner Pass starts straight away, and as one sweeps round bend after bend gives fine views of Innsbruck nestling on the plain below. We both lowered our gears, and tackled a steady climb of twenty-three miles over a road very loose in parts. After ten miles I pulled up with a puncture caused by a sharp flint, and then after another ten miles of steady pulling I saw a nice long steep bit to finish with. Opening the throttle to the full, I shot along, but the hard work was taking it out of my plucky bicycle, and on pulling the pump up I found I had no oil in my tank. First came back air, then a notch or two of ignition, and, although I pedalled for a few yards, I pegged out within a hundred yards of the top. Propping my bicycle up, I sat in the shade and waited for Grange. Shortly he came along, and I could hear his engine settle into a steady hum as he caught sight of the steep bit. Gradually it slowed down, until he stopped some two hundred yards below. He had practically no petrol left, but had noticed a sign in a village lower down, so, refusing some out of my tank, he free-wheeled down, whilst I completed the remaining small distance.

At the hotel at the top I had something cool in a glass, replenished the petrol tank, and filled up with oil for the very first time. This I consider very good, as I had been giving a pumpful every fifteen miles with clockwork regularity to Lausanne, and after that one every ten miles; this, I think, shows the advantage of the drip feed pump over the ordinary "full up one minute and starve the next" variety.

A Long and Refreshing Descent.

Continuing our way past the summit, which is denoted by the prettily-situated village of Brenner, we kept company with a river for a long distance, and now and again passed a monastery or castle perched high above our heads on a peak or rock, as well as a few monks in their brown cassocks and cowls, with a tasselled silken rope round their waists. We also noticed an open-air church or chapel by the roadside, only the pulpit and altar being under cover.

We never seemed as if we should finish the descent, and even yet I cannot say where it ceased. Swiftly we bowled along, crossing and re-crossing the river, and now and again passing through pretty villages, past the fortress of Franzensfeste, through Brixen, with its right, left, right turns, on to Klausen, with its awfully narrow street which makes you instinctively tuck your elbows in, into the open air again, and a view of a Benedictine nunnery perched high on a hill top.

We called a halt to enjoy a cool smoke, and I explained to the nervous "Billy" that a tremendous "boom" was not thunder, but only what I have referred to before as a "rain-gun."

Resuming, we entered a narrow gorge, with the river for company. But what is this coming? Surely it is not? But, yes—and we pass the first bicycle and sidecar, a twin N.S.U.; and also, to complete the wonder, what appears to be the exact counterpart of a "Davis Double." Then into Bozen, which Mr. C. L. Freeston so aptly describes as the oven of the Tyrol.

We found the Hotel de l'Europe excellent, and very welcome after a hot ride of eighty-two miles. The evening was spent in dining out of doors, and then drinking lemonades and ices for the rest of a very sultry evening, to the strains of an outside orchestra playing "Poppies" and "Yip-i-addy-i-ay."

Petrol we again found was very difficult to obtain, and very dear, and Grange said that when he returned to fill up on the Brenner he was asked 10s. for a tank full, and, in the end, he paid 6s.

Fitting a Spare Cam.

Next day, Monday, the 24th, as luck would have it, it rained nearly all day, so we set to and cleaned our pistons and cylinder heads and changed exhaust valves to save grinding in. I changed my tyres over, whilst Grange put his new Dunlop on his back wheel, as it was not being improved with rubbing against his pillion seat. He also brought out his spare cam, and decided to make a proper job of it; so off he set, and, coming to a chemist's shop, after much difficulty persuaded the chemist to let him have some prussiate of potash. I think the man behind the counter thought he was going to commit suicide. Then Grange found a nice little workshop, and put a blow lamp on to the cam, softened it, eased it a trifle, case-hardened it, and it then fitted perfectly and gave not the slightest trouble; not content with this, he also altered the timing of his valves for the next day's climb, whilst I had another look at my gudgeon pin, and found that the rapid wear was being arrested somewhat.

May I here give a word of thanks to Messrs. Price, who very kindly paid carriage and duty on three quarts of their "A" oil, which were waiting for us at the Post Office, and so enabled us to have our favourite brand at the ordinary retail price, as if we were in England, instead of Austria.

(To be continued.)

LOST AND FOUND.

We receive many letters regarding accessories, etc., both "Lost and Found," which we are unable to find space for. As these particular matters are of interest to two persons only, viz., the finder and the loser, we keep a list of such articles, and, should we receive a letter from the finder which corresponds to the article lost, the two persons are put into communication.

LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Waterproof Motor Cycle Clothing.

Sir,—For some time I have had a rubber-proof suit. It has been a great success; at no time has it become sodden or allowed any water to come through. I find it very much more comfortable and handy than oilskins and just as effective. Therefore I always intend to use the rubber-proof suits in future, as I think there is no doubt about their superiority. H. G. GALBRAITH.

Sir,—I again beg to claim a little space in your valued paper. It is ridiculous for the Express Rubber Co. to say that oilskins are "no use for motor cycling generally as they are most uncomfortable." Probably they have not yet tried wearing oilskins, or, if they have, it has been their own fault for not choosing comfortable fitting things. There has not yet been put on the market any cloth that will keep out rain for so long a time as an oilskin. Therefore, "B.W.B." is quite right when he says it is "the best wet weather clothing." I do not suppose anyone would mind the "sea-dog" appearance if he were "warm, dry, and comfortable."

Another point the Express Rubber Co. and the Dunlop Rubber Co. seem to forget is that motor cyclists want to ride in fine weather as well as wet, and I am sure most riders will agree with me when I say that I would not like to ride eighty or a hundred miles in a rubber-proofed suit on a boiling hot day.

Wishing *The Motor Cycle* the success it deserves, IT 49.

Silence and Silencers.

Sir,—I have keenly appreciated your recent remarks on the noise created by motor cycles. I watched a large number of the competitors passing through this city (Oxford) on the 30th ult., and the amount of noise caused by some of the machines by the perfect gun-like reports of the exhausts made me feel ashamed to own myself as a motor cyclist. At one time I noticed three machines within twenty yards, two at least with free engines, racing while crossing the very centre of the city. They made no attempt to close the cut-out, which, I suppose, all machines are now supplied with.

I hope you will continue to pass the strongest remarks on the subject until the manufacturers are compelled by public opinion to improve in this direction. The present silencer is exactly the same as it was in 1907, and even earlier. I suppose some of the manufacturers think that a free exhaust will disguise a multitude of sins and noises which should not exist in the timing gear, etc. A.H.P.

Do Records Appeal to Buyers?

Sir,—I, like "C.B.R.," find that records do not appeal to me in the least. One fancies that they are made on special machines tuned for the purpose. One wants a machine to carry one daily, bad weather and fine, over hill and dale, on highways and byways, one which can be brought out of its shed and a journey taken on it with the full conviction that it will run out and home without any tinkering on the road, or require overhauling before another journey has to be taken. Even the Six Days' Trials do not appeal to me on account of seeing so much written about men adjusting their machines for hills, etc., and doing repairs and making replacements on the q.t. The trials should be run without tools or replacements of any kind except what are required for punctures.

What appeal to me are the accounts of tours by owners of machines which you publish in your valuable paper. They give one a good idea how the machines behave under working conditions. YORKSHIRE.

Lubrication Systems.

Sir,—After the great interest shown in one side of the question of motor cycle engine lubrication, namely, the introduction of oil into the crank case, one naturally took it for granted that the other side of the problem, namely, the getting of the oil into the bearings, was a matter that was settled beyond question of discussion.

It was therefore a matter of considerable surprise to me to find that in the case of every connecting rod which I examined at the last motor cycle exhibition at Olympia the oil holes had been drilled in the top of the big end bearing. Some had had the mistake aggravated by the addition of a system of oil grooves, also on the upper side of the bearing. No wonder one hears of rapid wear in big end bearings!

That the top is the wrong place to introduce oil is obvious from a short consideration of the problem. Every millwright knows that to lubricate a bearing efficiently the oil must enter at the point of lowest pressure. In a shaft journal bearing there is generally one side where the pressure is zero. The oil must obviously be introduced at that side. In a big end bearing the pressure varies cyclically, but the top is where the pressure attains by far its greatest force, due to the explosion. During a part of the cycle the oil is forced out of the bearing by this pressure, and in this case the oil grooves help the oil to get out, while only the viscosity of the oil tends to keep it in the bearing. That the oil is actually forced out has been proved, as the force has in the past been made use of to send oil up to the gudgeon pin, and so lubricate it and the piston. This could easily be done in motor cycle engines, and would



F. B. Roper (5 h.p. single speed Indian sidecar) who gained second prize in the Sheffield and Hallamshire M.C.C. winter reliability run to Bridlington and back (170 miles). The roads were thick with mud, and Mr. Roper mentions in a letter to us that the chain drive was ideal under the circumstances.

A False Rumour.

Sir,—May we trespass on your space to contradict a rumour which we have heard persistently of late to the effect that we intend marketing a 6 or 7 h.p. twin motor bicycle. We cannot imagine what has given rise to this rumour, unless it is that our 500 c.c. single-cylinder engine has developed over 8 h.p. at 3,000 revolutions.

RUDGE-WHITWORTH, LTD.
JOHN V. PUGH.

The T.T. Race Fund.

Sir,—With reference to the offer made by Mr. Cuffe and referred to in your last issue on page 54, we think it should be pointed out that so far as the leading makes of motor cycles are concerned, the offer referred to is a form of price cutting to which the makers would take exception, and this also applies to speedometers and other proprietary articles, otherwise no doubt many other dealers would be glad to do business on the terms referred to.

THE SERVICE CO. (LONDON), LTD.

Hill-climbing.

Sir,—Being intimate with both sides of Honister Pass, Frank Smith, and the behaviour of a privately-owned two-speed Clyno in the Lake District, I have no hesitation in proposing that the four-speed Clyno and sidecar will climb the Buttermere side at the first attempt, provided the surface is no worse than it usually is from, say, March to November. The greatest difficulty on Honister is to keep straight and prevent the machine from diving into the ravine on one side or into the gutter on the other. I should think the extra wheel and weight of the sidecar will greatly help the rider in keeping a straight course. It will be interesting to see if this is so, despite one wheel having to plough through the loose stuff. In any attempts I have witnessed or made there has been plenty of reserve power if the single track machines could have been held up in the loose metal. When at Olympia in November, I arranged with Mr. Smith to come North and climb all our "pimples," including Tow Tup, which I consider steeper and longer than Honister, but the surface is much better, except at one corner. This hill was once suggested for the 1912 annual open climb of the Westmorland M.C.C., but was voted too difficult.

LEWIS PENNINGTON.

Sir,—In your issue of the 28th ult. I notice a letter from Mr. A. Newman, in which he mentions a certain route embodying such formidable hills as Honister Pass and Buttermere Hause, and expresses a desire to see me climb these hills.

In reply thereto, nothing would give me greater pleasure, as I am really anxious to find hills with sufficient gradient to prove the limit of the hill-climbing powers of the Clyno. I am always open for such suggestions as Mr. Newman makes, but in your issue of the 4th inst. I read a comment on Mr. Newman's proposition signed by "Fair Play in all Things," and, in passing, I must say that this gentleman seems to be a thorough sport, and, in his opinion, Mr. Newman has asked me to do something outside the bounds of possibility. However, as already stated, I intend tackling this ascent, and, provided I am given a surface to carry my wheels, I enter upon it with every confidence of success.

I would esteem it a favour if Mr. Newman, who is on the spot, would be kind enough to let me know how soon I can attempt these hills, bearing in mind the weather conditions, as I expect they are covered with snow at this time of the year.

FRANK SMITH.

Sir,—May I again enter the lists in defence of my statement with regard to Honister Pass. I said that in my opinion it was impossible. To those who have seen cars ascend or know of those which have ascended I offer apologies. Nevertheless, until I see it done I shall still maintain my opinion both from what I know of it and from what the proprietor of the Buttermere Hotel said to me after I told him of the 90 h.p. racer's attempt. Mr. Newman says that three riders at least have so far succeeded as to be only waiting another attempt. I can quite understand any good low-geared machine might climb most of it. It is the last fifty yards, just after a very nearly right-angled bend to the left, where the test really comes, and here I believe, but I am open to correction, the gradient is 1 in 3½ to the top, with a deep covering of loose slag over which the driving wheels cannot get a good grip. Mr. Newman also says that coaches and motors "descend" daily in the season; but how many "ascend," which is the point in question? I hope as usual to be staying at the Buttermere Hotel next Easter week, and I should then enjoy nothing more than to watch attempts, and also to try my luck on my Scott machine. Either Mr. Newman's remark in conclusion is very subtle or else I am very dense, because, although Mr. Smith's Clyno is a wonderful hill-climber, there are limits if not in gradients, at least, in road surfaces, and therefore why not "Fair Play" as a *nom de plume*? FAIR PLAY.

[Two readers have written offering to accompany Mr. Frank Smith in his sidecar when the attempt is made.—ED.]

Proposed Silencer Trial.

Sir,—The Auto Cycle Union, to our thinking, is to be warmly congratulated for considering the running of a silencer trial, and while we agree that such a trial would help to determine the respective efficiency of silencers, we would suggest that in addition to noise, other important points such as back pressure, facility of attachment, ease of cleaning, lightness with strength, capacity and low manufacturing cost, be taken into consideration.

Needless to say, if a silencer trial be organised along these lines, we shall be happy to enter our Sharpe universal model.

BARRIMAR, LTD., C. W. Brett.

The Abuse of Cut-outs.

Sir,—In view of the agitation that exists at the present moment against noisy motor cycles, and feeling that the abuse of the cut-out by a certain class of irresponsible motor cyclists is bound to increase this agitation, we have decided to supply our Indian motor cycles in future with the foot lever which operates the cut-out fitted to our silencer entirely removed.

We have found from experience that the opening of the cut-out does not materially increase the speed or help the running of our standard touring machines in any way whatever. In fact, we are quite convinced that the long, tapered exhaust pipe which we fit on to our silencer, and which extends well towards the rear of the machine, instead of retarding, tends to improve the running of the engine, inasmuch as it apparently creates a vacuum in the silencer.

We hope you will publish this letter in your columns, and trust that other manufacturers of motor cycles will adopt this policy in the near future.

THE HENDEE MANUFACTURING CO.



Mr. and Mrs. J. C. Piddock of Isleworth, and their 8 h.p. Chater Lea-Jap. Mr. Piddock is the proprietor of "Sketches," and uses the combination in his business. The machine has been driven about 4,000 miles in all weathers, and the owner is very pleased with its behaviour.

"Clean Counties" and Local Taxation Licences.

Sir,—In your issue of January 11th you mention several "Clean Counties" in which no police traps have been worked during 1911. I would point out to you that the county of Durham should be included in this list. Such a thing as a police trap is not known in this county, and I shall be pleased if you will mention this fact in your next issue.

W. T. WALTON, JUN.,
Hon. Sec. Hartlepools and District M.C.C.

Sir,—In response to my letter under this heading, which you were kind enough to publish, quite a number of licences have been sent to me to pay here. Will readers who send revenue forms in future give registration numbers? I have also had enquiries as to how this can do any good, as the whole of the money paid ultimately finds its way to the Government. Now I take it the facts are as follows, and if not, I shall be glad of your corrections. Previous to the 1910 Finance Act, the whole motor cycle licence, 15s., went to the county fund of the county in which the licence was paid, but at the present time the county still receives the 10s., and the extra 5s. put on in 1910 goes to the Road Board, which was created at that time. But, I hear someone say, it is impossible that Mr. Lloyd George would let the motorist take all the benefit of increased taxation—and quite right. The extra petrol tax introduced under the same Act would recoup the Government to the extent of £1 per annum in the case of a motor cyclist doing mileage of seven thousand miles or so, and this distance is, I should say, exceeded by most men using their machines regularly.

A. B. BENNETT, Hon. Sec., Derby and District M.C.C.

[An explanation of the method of dealing with the licence money was published last week. See page 49.—ED.]

This Year's Tourist Trophy Race.

Sir,—My attention has been called to a leader contained in your issue of the 11th inst., on the subject of this year's T.T. Race for motor cycles, in which you make certain statements which are hardly fair to the Manx authorities. For instance, you say: "Though several applications have been made to the Isle of Man authorities for permission to hold the race, no reply which will lead one to suppose that consent will be given by the Tynwald Court has been received up to the present."

This statement is not correct, and perhaps you will allow me to give you the actual facts.

In November last, the Secretary of the A.C.U. in a private letter to the Chairman of the Highway Board of the Isle of Man thanked the Manx people for the facilities given for the holding of the race, and in a casual way asked if they might hold the race here in 1912. From that date up to January 10th, 1912, no further letter has been received by the Isle of Man authorities on the subject of this race, and no intimation in any shape or form has been conveyed to the Isle of Man authorities which would lead them to believe that their decision on this matter was urgently required.

In former years the permission for the holding of the race has been granted about February, and there was nothing to lead the Manx authorities to believe that the decision for the 1912 race would be required any earlier.

It may interest your readers to know that this matter will be decided upon by the Tynwald Court on January 23rd.

I might say that, in my opinion, if permission for the race be refused, the fault will not lie with the Manx authorities or the Manx people, but with the A.C.U., who know full well the amount of misbehaviour of some of the competitors here in June last, and the way their conduct was annoying—and rightly so—to the people in the island, and neither the A.C.U. nor its Secretary took any steps whatever to stop such proceedings, and although they had before them the names of some of the competitors who were the cause of all this trouble, the A.C.U. did not either censure or disqualify them from any of the competitions.

If the races are to take place in the Isle of Man this year—and Manx people, after all, are sportsmen—it will only be on such conditions as will give the Manx authorities power to prevent such disgraceful proceedings taking place as took place here in June last.

As regards the other paragraphs in your article as to whether a course more suitable than the Isle of Man is to be found in the North of France, anybody who has been there knows that such a course does not exist.

Why is the British motor bicycle the best machine in the world? Because the T.T. Races and competitions have been held in the Isle of Man.

GEORGE J. A. BROWN.

The M.C.C. London-Exeter Run.

Sir,—Referring to the paragraph "A Reader's View of the Exeter Run," on page 40 of the last number of *The Motor Cycle*, I should be very glad to learn, and so, no doubt, would the committee of the M.C.C., how to give each of eighty members a gold medal costing over £1, and yet have a balance in hand out of 119 entry fees of 10s 6d. each. As a matter of fact the club will make a loss of something like £50 over the event, and if it were not that we are in a fairly strong financial position the club could not undertake these big competitions.

SOUTHCOMB MAY, Hon. Sec. M.C.C.

Sir,—A contributor's list of the 100% successes in the M.C.C. twenty-four hours' run to Exeter is published in "Current Chat" of your last issue. The writer has, however, omitted the two Service machines which were entered and successfully ridden by Mr. W. C. Hémy and myself, and which were the only two machines of that make in the trial.

He, furthermore, goes on to say that the entrance fees practically bought the medal for all but the very unfortunate. I am not aware as to whether your contributor was a competitor or not, but as his letter gives the inference that the run was a pantomime ride, I should say not, for I am sure that all the competitors will agree with me that any machine which was successful in that run reflects the highest credit upon its manufacturer, and that the element of luck was very minor indeed.

STANLEY B. WHITE.

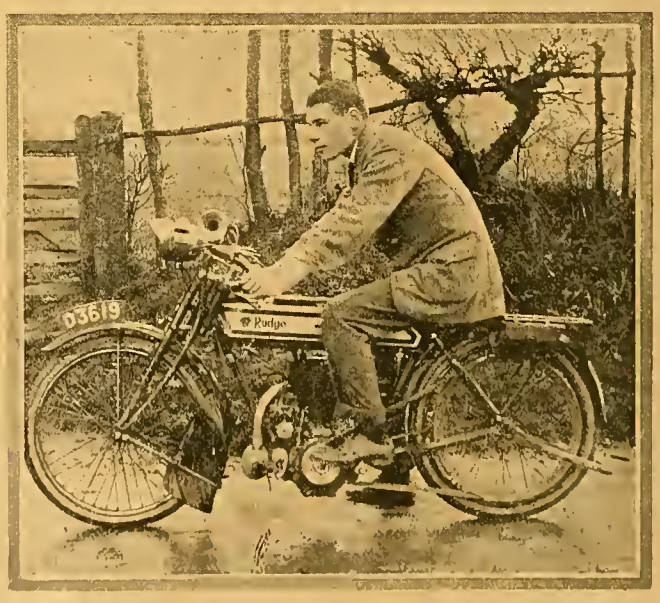
Multi-pole Sparking Plugs.

Sir,—Noticing that Messrs. Lodge Bros. are soliciting correspondence *re* "Double-pole Plugs" in your columns, I thought my experience with them would prove interesting.

I have not found them to have the least effect on the magneto, but the one great fault they have is that they cause a machine (particularly a big twin) to be very hard starting, and for this reason I only use the double-pole plugs when I want to get the last ounce of power. I consider the plugs give about five per cent. more power and speed.

By the way, while speaking of magnetos, I should like to enquire if it is possible to time the new twin Bosch magneto with enclosed sides, except by the contact breaker. As far as I can see to get at the inside, the magneto sprocket would have to be taken off and the whole of one side of the magneto.

E. F. BAXTER.



W. Erlam Garden, mounted on his 1912 Rudge. At the Wanderers Motor Cycle Club's Hill-climb, on Cudham Church Hill he made fastest time in the class, and was first on formula.

Horse-power Rating.

Sir,—As your hospitable and widely read columns are always open to any remarks that may be of interest to motor cyclists, may I draw your readers attention to an article in one of your contemporaries? In *Engineering* of December 15th, there is an article which discusses a paper on "The Rating of Petrol Engines." This paper was read before the Institution of Automobile Engineers some time ago, and definitely shows that the R.A.C. and Treasury formulæ for horse power are not satisfactory from a racing man's point of view.

The writer of the article in the journal draws attention to the fact, as did the writer of the paper, that horse-power formulæ based on bore or stroke alone can be evaded, by producing engines in which unhandicapped dimensions are accentuated. They go on to show that a capacity of cylinder rating is the only method at present in practical use by which anything like fairness in handicapping can be approached. Furthermore, in order to prove it to their professional brethren they draw upon the motor cycle T.T. method as illustration. *Verb. sap.* T.M.L.

The Evolution of Transmission.

Sir,—In reply to "F.C.J." In his whole-hearted advocacy of shaft drive, your correspondent omits to mention two important matters. He does not say if his district is hilly or well supplied with good roads. I, too, am a country doctor, who, for six out of the past eight years, have done the work by motor cycle, entirely without assistance from horses. In fact, in that period of time I have not kept a horse. I tried shaft drive for six months, with poor results so far as I was concerned.

The horribly unsatisfactory results then to be obtained with direct belt drive had persuaded me to try gear transmission. I then lost heart altogether, and in despair took to a car. This I drove for two winters. I had the following objections to this mode of progress:

1. The expense was about five times as much.
2. The car could not go where many of my patients lived.
3. The work took longer.
4. The nuisance of water-cooling in the winter.
5. The danger of meeting fast cars and heavy traffic (on the wrong side of the road) in the narrow lanes.
6. The exertion of stopping and starting frequently.

I now ride a two-speed lightweight (which I have had three years), with chain to counter-shaft, 6in. pulley on this, and thence by belt to back wheel. I have no clutch (which is down in the dirt with a motor cycle), and can change up and down on any hill that the engine, so geared and at the same number of revolutions, will tackle. My belt never slips, and has not required shortening in the last 1,000 miles. I used two belts in the last twelve months (10,000 miles). For over 600 miles this belt dragged the machine (130 lbs.), myself (217 lbs.), (trailer (40 lbs.), and load (121 lbs.)—within 2 lbs. of 500 lbs.

Your contributor says that the great danger of shaft-drive is a seized engine. What about a big end of the connecting rod going? This happened to me on both a gear-driven motor cycle and on my car. On another occasion a stone got wedged between the back sprocket on the car and the chain, and I flew over the steering wheel and a hedge into a field. CHAS. S. PATTERSON, M.B., M.R.C.S.

The Swiss Rain Guns.

Sir,—Allow one of your regular readers to express his experience concerning a statement of your contributor Mr. Fawcett about what he cal's "rain guns" in Switzerland. Does Mr. Fawcett seriously believe that Swiss peasants are so uncivilised as to think they can frighten away a rain cloud with a pop-gun?

The guns he mentions are erected in great numbers and with great expense against the hailstorms, which are so terrific and so sudden in Switzerland. I was attending a picnic once, with Swiss friends, on the top of those mountains which Mr. Fawcett mentions as being covered with vines. It was in August, and the grapes were very abundant. The day had been hot and stormy, and by two o'clock a small black cloud was seen pointing out over Geneva.

Swiss people know what a cloud over Geneva means. In a wonderfully short time that cloud had spread over the lake and the colour being that of lead, it was evident a formidable hailstorm was approaching. In fact, from our high position we could distinctly see the surface of the lake hammered by hailstones just under the cloud, the edge of which was now reaching the lake banks. At that moment the air was shaken suddenly by formidable detonations, as frequent as one per second, and in looking down we could see hail guns in quantities, erected upwards, and firing their gaseous projectiles.

I had been wondering for some time as to the efficacy of these, and was awaiting anxiously the results. The storm was soon above our heads pouring in torrents. There was a tremendous roar of thunder and the lightnings were tearing the darkness, but no hail could be seen. P. MINAULT.

THE MOTOR CYCLING CLUB ANNUAL GENERAL MEETING.

The annual general meeting of the Motor Cycling Club was held at the Inns of Court Hotel on the 10th inst., at 6.30 p.m. Mr. Charles Jarrott, the president of the club, was in the chair, and we regret to say he was in a very poor state of health. Only his devotion to the club brought him to the meeting. After the very satisfactory annual report and statement of accounts had been passed, the officers of the club were elected, and next followed the election of the executive. The 1912 committee stands as follows: Messrs. H. G. Bell, A. Candler, E. B. Dickson, S. H. Fry, C. Gibbons, E. Gwynne, R. H. Head, J. van Hooydonk, F. J. Jenkins, C. J. Seed, W. H. Wells, and A. J. Moorhouse. Mr. B. Marians was elected captain of the club. Mr. Arthur Candler, the popular ex-hon. sec., was elected a life member.

A capital smoking concert followed the meeting, at which a number of well-known artistes displayed their talent. Among the professionals, Mr. Ernest Cherry, a M.C.C. member, gave some selections from his clever impersonations; while among the amateurs Mr. F. Gillett, accompanied by Mr. Hal. Hill, sang some humorous topical songs of his own composition. A refrain, "We don't want more letters from Archibald," and "We've a very good sec. in Southcomb May," went down very well.

THE MOTOR CYCLE IN WARFARE AND ON MANOEUVRES.

UNDER the auspices of the Streatham and District M.C.C., an instructive lecture was given at the Royal Automobile Club, on Friday last, by Major Phillips, R.E., on the above subject.

The lecturer explained what constitutes a division on the march, and showed how in marching the force might tail out to twenty-five miles in length. Men and horses are supposed to keep to the left hand side of the road, but the space on the right is generally too narrow for a motor car, and it is in the transmission of instructions from one end to the other of the division that the motor cyclist might be most effective.

Major Phillips, in referring to the pedal-propelled cycle, pointed out that, while this means of locomotion offered advantages over rough ground, the motor cycle had immensely the advantage over long distances. In comparison with the horse, too, the motor cycle offered enormous advantages.

To work along a line of march satisfactorily, a motor cycle must, however, fulfil certain requirements. It must be quiet, and it is most important to keep down the dust or mud as much as possible. In suitable countries and in a modified way, it might be employed for scouting purposes, for medical work in bringing up light stores and instruments, for keeping two divisions in touch, and the rapid transit of troops from one point to another.

To meet the requirements of such work, a motor cycle with interchangeable parts would have to be used, and one that could use paraffin as fuel would be at an enormous advantage.

In concluding, Major Phillips mentioned that, while it was desirable for the soldier to have a thorough knowledge of his motor cycle, it was also most important that he should have a sound knowledge of military work. If they could not join the Territorials as motor cyclists, let them prepare themselves for that rôle by acquiring a groundwork of military knowledge in other branches of the force.



Derby and District M.C.C.

A winter run will take place on the 20th inst. The annual general meeting will be held at headquarters on the 24th inst.

Ipswich and District M.C.C.

A lecture on "Carburation" is to be given to the members of the above club by Mr. W. Low on Saturday, the 20th inst., at 7.30 p.m.

West Essex A.C.

The annual dinner will be held at the Great Eastern Hotel, Liverpool Street, on Saturday, the 27th inst., when the prizes in connection with last season's competitions will be distributed.

Yeovil and District M.C.C.

The first annual dinner will be held at the Half Moon Hotel, Yeovil, on Thursday, the 25th inst. After the dinner the prizes won in the past season will be presented, and a musical programme will follow.

Sheffield and Hallamshire M.C.C.

A meeting of the club will be held on Thursday, January 18th (to-day), at 8 p.m., at headquarters, King's Arms Hotel. Everybody present will be invited to address the meeting on "Strange Faults and how I remedied them." All motorists, whether members of the club or not, are cordially invited to be present.

Western District M.C. (London).

The annual meeting of the above club will take place on Monday, the 22nd inst., at headquarters at 8 p.m. A winter reliability trial will be held to Stokenchurch on the 21st—starting at 10.30 a.m. from the horse trough on Ealing Common, the route will be *viâ* Uxbridge and High Wycombe. Two hours' stop will be allowed at Stokenchurch.

South Birmingham M.C.C.

The first annual general meeting was held at headquarters, the Mermaid Hotel, Sparkhill, on the 11th inst. There are now about seventy-five members. A vote of thanks was passed to the following donors of prizes: Messrs. W. Allday, E. J. Spark, P. J. Evans, E. R. Lycett, J. J. Woodgate, F. W. Merrick, H. Shaw, H. Joyce, and the Singer Co., Ltd. The committee will meet on the last Thursday in every month.

Winchester and District M.C.C.

The annual meeting of the club was held at headquarters, the Royal Hotel, on Tuesday, January 9th, the president, Major the Hon. G. V. Baring, M.P., taking the chair. It was agreed to arrange competitive events to supplement those arranged by the Hants Motor Cycle Union, of which this club is a section. Major Baring kindly offered to arrange for the club to have the use of an excellent private road in the county for one of its competitive events, and the venue and particulars relating to this will be published in due course. Mr. G. S. Tungate, of 49, Parchment Street, Winchester, was elected hon. secretary.

Ilkley and District M.C.C.

The annual general meeting of the above club was held at the Crescent Hotel, Ilkley, on Wednesday, January 10th. The president, Mr. T. A. Pearce, was in the chair. The officers for 1912 were elected as follows: President, Mr. T. Archer Pearce; hon. treasurer, Mr. W. A. Robinson; hon. secretary, Mr. J. Norman Longfield, Laurel Bank, Ilkley.

The following events were arranged for 1912: January 30th, breakdown competition; February 6th, paper on reliability trials by the Hon. Secretary.

In future the club will have a private room at the Crescent Hotel, Ilkley, for the use of all members, from 7.30 to 11 p.m.

Nelson and District.

It is proposed to form a club in this part of Lancashire. All motor cyclists interested are requested to meet at the Bull Hotel at 7.30 p.m. on the 23rd inst.

Newcastle and District M.C.

There was a supper and smoking concert at the club house on the 11th inst. During the evening the prizes won during the season were presented.

Middlesbrough and District M.C.C.

At the annual general meeting, held recently, the following officers were elected: President, Mr. L. F. Gjers; captain, Mr. J. Gilchrist; hon. secretary, Mr. G. Goult. On the 12th inst. Mr. J. R. Sorrell lectured on "Dos and Dont's for Motor Cyclists."

Bristol B. and M.C.

An inter-team competition will take place on February 17th with Westbury as a centre. The first big event will be the open hill-climb on April 27th.

Finsbury Park C.C.

At the annual general meeting, held at headquarters on the 10th inst., Mr. G. R. Barrett was elected captain of the motor cycling section, and Mr. C. W. Cooke, 47, Mount View Road, Crouch Hill, general hon. secretary.

Coventry and Warwickshire M.C.

Members and their friends who propose to attend the eighth annual dinner and prize distribution, on Friday, February 2nd, at the Masonic Hall, should notify the hon. secretary without delay. Tickets are 5s. each.

Streatham and District M.C.C.

The winter programme is as follows:

Jan. 24th, Feb. 9th, Feb. 16th, and March 1st.—Lectures at headquarters.

Feb. 8th.—Bohemian concert at Hamilton Hall, Balham.

,, 23rd.—Annual general meeting at headquarters.

Cardiff M.C.

The annual dinner took place at the Park Hotel, Cardiff, on Wednesday last. Mr. A. Williams presided, and was supported by a goodly number of the members and officers of the club. During the evening the prizes and medals won in competition during 1911 were distributed by the chairman.

The annual general meeting will be held at the Park Hotel, Cardiff, on Tuesday, January 30th, when the programme for 1912 will be considered. There is promise of considerable discussion, and an interesting evening is anticipated. All motorists are cordially invited to attend and take part in the discussion. Application for membership should be addressed to the hon. sec., Mr. H. B. Jotham, 12, Duke Street, Cardiff.

North-west London M.C.C.

The annual general meeting of this club was held at headquarters on the 10th inst. Mr. Rowden (captain) and Mr. Stern (secretary) having resigned from those offices, the following officers were elected for the present season: Captain, Mr. H. J. Pooley; vice-captain, Mr. Frank Thomas; hon. treasurer, Mr. G. H. Hollis; hon. secretary, Mr. O. P. Hill.

After a long discussion, it was resolved that the rules be altered to make the entrance fee henceforth 7s. 6d. and the annual subscription 12s. 6d.

A very full programme has been provisionally arranged, and details will appear in due course.

A rather small attendance greatly enjoyed a most excellent programme at the annual smoking concert last Friday. There was not a weak item during the evening, but the following deserve special mention: The St. James' Glee Singers, Messrs. Arthur Melrose, Fred Rome, Stuart-Debnam, and Gregory Jones

Club News.—

Wimbledon M.C.C.

The first run of this newly formed club will be to Guildford on the 21st inst., starting from Wimbledon Town Hall at 10 a.m.

Newcastle M.C.

The annual general meeting was held at the Central Exchange Hotel. Mr. W. Dunn (hon. sec.) presented the annual report of a very successful season. The following officers were elected: President, Mr. J. R. Scott; hon. treasurer, Mr. T. G. Atkinson; hon. sec., Mr. W. Dunn.

Mersey M.C.

The first annual general meeting was held on Thursday, January 11th, at headquarters, St. George's Restaurant. The following officers were elected for 1912: President, Mr. P. J. Robinson; captain, Mr. G. H. Lake; hon. treasurer, Mr. G. Morley; hon. secretary, Mr. S. W. Carty, 'Bankfield Road, West Derby, Liverpool. A highly interesting and instructive discussion took place regarding the programme for 1912, and many novel and valuable suggestions were made for the benefit of the club and to the advantage of its members. A vote of thanks to the president terminated the proceedings.

THE TOURING TRUMP.

We are officially informed that Mr. F. A. McNab has disposed of his interest in Trump Motors, Ltd., and has resigned his position as director and sales manager. The registered trade mark for motor cycles, the "Trump," was purchased by the above company, and the business will be continued by that concern. We are asked to allay the impression that the Trump motor cycles are made only as racing machines.

ANOTHER NEW MACHINE.

Mr. Harold Williamson, formerly with the Rex and Singer Companies, is starting a company to manufacture a motor cycle to be known as the "H.W.S." This machine will be made in two sizes—2¾ h.p. and 3¾ h.p.—both single-cylinders; the former will have an engine of 76 × 65 mm., and the latter 86½ × 85 mm. Both will have overhead valves and half compression starting devices. These two sizes will be again subdivided into T.T. and clutch models, the latter will have a Doherty clutch, consisting of a large band-expanding into a drum formed on the rear hub. The address of the new concern is the Harold Williamson Motor Supply Co., 26, Sherlock Street, Birmingham.

HERTS. COUNTY A.C. (MOTOR CYCLE SECTION) ANNUAL DINNER.

THE annual dinner of the above mentioned prosperous club was held at the Holborn Restaurant on Friday evening last. Mr. Otto Thomas (*The Motor Cycle*) occupied the position of chairman. At the conclusion of the dinner a very large number of prizes were presented by Mrs. C. C. Cooke, the wife and energetic helper of the honorary secretary.

In proposing the toast of "The Club," the Chairman said he was pleased to see how the club had prospered. Two years ago it had but twenty members; now its membership exceeded 200, and it held the proud position of being the largest club affiliated to the A.C.U. As a Hertfordshire resident, he hoped it would long continue to prosper. The club consisted of true sportsmen. The movement should endeavour to gain a reputation for everything that is good and nothing that is bad, and the club should strike a high note in all its undertakings. It should exist not only for the sport and pastime, but for good fellowship and co-operation. Such a club spurred on the manufacturers to the attainment of a high standard of efficiency, and at the same time gave the manufacturer his reward by attracting more people to the movement. He was glad to see that the club encouraged ladies to participate in the pastime, and, in this connection, he had pleasure in announcing that *The Motor Cycle* would present another cup for a ladies' competition to replace the one won outright by Mrs. C. C. Cooke last year.

Mr. C. C. Cooke, the energetic hon. secretary, in reply, said that the Chairman had shown himself to be a good member of the Herts club. He was glad to announce that the first competition of the year, an open reliability trial, to be held next Saturday, had received between sixty and seventy entries. A handsome silver cup rested on the table, which was one of two which would be presented for the best performances in the four open reliability trials held by the club.

Mr. F. A. Hardy then proposed "The Visitors," which was responded to by Mr. F. Gillett in an amusing speech.

Mr. Pratt, in a speech in which he had to contend against continual, though friendly, interruptions, proposed the toast of "The Ladies," and announced that he would give a prize for a lady's competition. Mr. Hal Hall then replied on behalf of the fair members present.

Mr. R. Rice Pyle proposed the toast of "The Press," which was responded to by Mr. E. M. P. Boileau *(The Motor Cycle)*.

Mr. C. C. Cooke proposed a hearty vote of thanks to the Chairman.

The speeches were interspersed with an excellent musical programme, one of the most appreciated features of which was a series of topical songs by Messrs. Hill and Gillett.

THE STREATHAM AND DISTRICT M.C.C. ANNUAL DINNER.

THE annual dinner of the Streatham and District M.C.C. took place at the Holborn Restaurant on Saturday last. The attendance was good, and indicated that, though the club was young in years, it was an energetic and really live institution. Mr. J. W. Orde, secretary of the R.A.C. and president of the Streatham Club, was in the chair.

In proposing "The Club," the Chairman said he must congratulate them on their work during the past year. Touching on the benefits of affiliation, he said that very few members of the Streatham and District M.C.C. had applied for legal assistance. Did that mean that very little riding was done by Streatham motor cyclists? (Laughter.) Anyhow, those who had applied had got off. The motoring movement had developed a new race of people. Previous to its inception there were comparatively few mechanical engineers in this country; now everybody said they knew all about everything connected with internal combustion engines, and what they did not know about them they did not say. (Laughter.) This new race was courageous, *vide* the splendid courage shown in competition held on both track and road, and courteous in that due consideration was extended to other users of the highway. In conclusion, he must congratulate the club on its officers, Mr. H. P. E. Harding the chairman, Mr. Ayres the treasurer, and Mr. J. H. Jeffery the hon. secretary.

Mr. J. H. Jeffery (hon. secretary), who was greeted with deafening applause, spoke of the club's successful season, mentioning the chief events of the past year, and thanking the donors for the prizes they had presented. The club's success, both on the social and competition sides, he said in conclusion, had been due to the excellent work of the committee.

At this stage the Chairman presented the prizes, of which Mr. F. W. Barnes received so many that he employed an assistant with a basket to carry them away.

Mr. V. Hart proposed "The A.C.U." He remarked that its membership was close on 5,000, and that number did not nearly approach the possibilities in this direction to which the Union might attain. Touching on the A.C.U. competitions, he mentioned the possibility of holding the T.T. race in France, a remark received with loud applause.

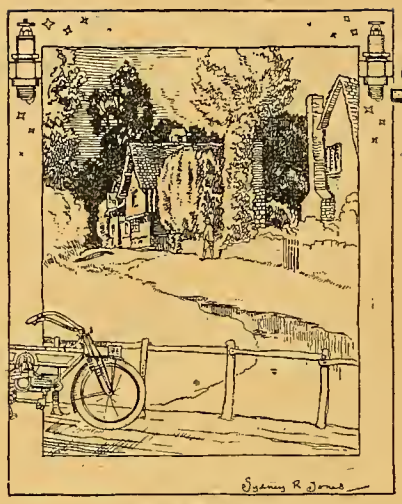
Mr. F. Straight (sec. A.C.U.) in reply spoke of the work of the A.C.U., how that body, appreciating the growth and strength of the affiliated clubs, was this year leaving the majority of competitions to them. Other subjects touched on were the military motor cyclists' scheme, the evils of central tramway standards, the use of reflex lights, etc.

Mr. H. Hunter then proposed the toast of "The Visitors" which was responded to by an amusing speech from Mr. B. H. Grey. The toast of the press was given by Mr. W. Pratt and responded to by Mr. E. M. P. Boileau *(The Motor Cycle)*, Mr. W. G. McMinnies and Mr. V. P. Winkoskie. The toast of "The Chairman" was proposed by Mr. H. P. E. Harding. Mr. Orde in the course of his reply expressed his best wishes for the club in 1912, and said he would present another prize this year to be won outright. (Applause.) The programme was interspersed with music

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply.

Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.



Daventry to Southwold.

(1.) I should be much obliged if you would tell me the best and quickest way from Daventry (in Northamptonshire) to Southwold (in Suffolk), with distance. (2.) How long would it take me on my T.T. 1912 Rudge?—A.J.M.

(1.) Your best route would be as follows: Daventry, Weedon, Northampton, Wellingborough, Higham Ferrers, St. Neots, Cambridge, Newmarket, Bury St. Edmunds, Haughley, Stowmarket, Framlingham, Saxmundham, Blyburgh, to Southwold. The distance would be approximately 155¾ miles. (2.) It would take you a day to cover, and you would have to travel fairly fast to do it at this time of the year.

Too Much Petrol.

My engine is always overheating even on level roads, and will take full air always, slow or fast. Would the fact of the weights (balance on needle valve) being worn where they come in contact with float be the cause, and do you think that if I lowered the petrol level in carburetter it would make things better?—E.I.

Yes, the trouble is due either to too much petrol through too high a level, or through too large a jet. Why not check the level as mentioned in the hints on carburetter adjustment in "Motor Cycles and How to Manage Them"? Try lowering the level first of all, and if this does not bring about the desired result try a smaller jet.

An Adjustable Tappet.

I see, according to some of your correspondents, that there appears to be some trouble to get a satisfactory adjustable tappet rod. I have thought of an idea so that I could make an adjustable tappet that could be adjusted in a second without spanners or tools of any kind, and could never shift, as it would be self-locking in any position, or could be made adjustable from the tank. Do you think this idea would be worth patenting or not? The cost would only be a few shillings. Should I make one and put it on my own motor first, before troubling any further about it?—S.G.B.

If you can make the device adaptable for any make of machine, and sell it so that amateurs can fit it themselves, it would probably be worth patenting. We should certainly advise you to make one and put it on your own machine first of all, and then, if it is successful, send details to us and take out a provisional patent.

Two-cycle Engines.

When examining a 1911 Scott machine (second-hand)—(1) Where should I specially look for signs of wear? (2.) What special risk is incurred from much worn parts on this machine as distinct from a four-stroke machine? (3.) How long will the chains run without replacing? (4.) Does this machine become less reliable and more difficult to start after considerable wear? (5.) Is the back wheel easy to remove? (6.) How far will a Scott take a sidecar and light passenger (9 stones) on ordinary roads per gallon of petrol?—L.B.C.

(1.) Examine the roller bearings and look for vertical play in the connecting rod, gudgeon pin, and mainshaft bearings, as in the case of a four-cycle engine. Also examine the transfer gauzes to see if these are in good order, the chain sprockets and tyres; also look for leaks in the circulation system. (2.) We do not know of any more risk being incurred than in a four-cycle machine. (3.) The chains should run about 5,000 miles without replacing. (4.) We do not think so. (5.) The back wheel is fairly easy to remove. (6.) About fifty m.p.g.

Leicester to Hereford.

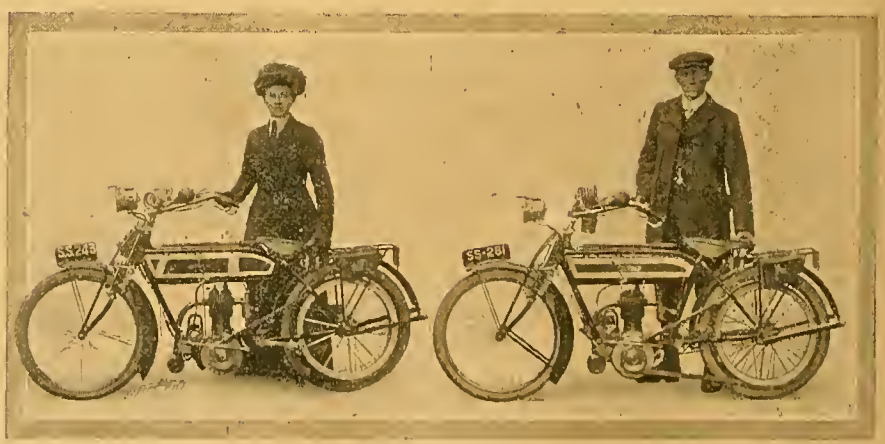
Please give me the best route from Leicester to Hereford, also total mileage. I have done this journey once *viâ* Coventry, Birmingham, and Worcester, but wish to know if there is not a better route. My machine is a 3½ h.p. two-speed and sidecar, therefore I want to avoid very bad hills. I am at present using a No. 32 jet in carburetter—would it increase power to fit one larger?—H.S.

Your best route would be as follows: Leicester, Wolvey, Coventry, Kenilworth, Warwick, Stratford-on-Avon, Alcester, Evesham, Tewkesbury, Ledbury, to Hereford. There are no hills on this route which should worry you. The distance is approximately 107 miles. You might try a slightly larger jet.

Double-spark Plugs.

Will you kindly advise me on the following points: (1.) Would it be advantageous as regards ease of starting from cold, general running, etc., to use any of the double spark plugs advertised in your journal on my 1911 Douglas? Would there be any disadvantages? (2.) What alarm or warning fitment is there on the market suitable for the above machine to be worked by the right foot?—T.W.

(1.) Undoubtedly a little improvement would be obtained by using a two-spark plug. (2.) Possibly an alarm bell or an exhaust whistle to be operated by the foot might suit your purpose.



MARRIED COUPLES WHO MOTOR CYCLE.

Mr. and Mrs. O'Donovan, of Bedford, riders of free engine Singers. Mrs. O'Donovan has had a Kerry, a Rex, and a Singer Moto-Velo. Her husband was the first to successfully complete a long-distance trial with engine valve caps and other parts sealed.

A Spring Frame Machine.

I am considering buying a P.V. motor cycle, and I should be very much obliged if you will answer me the following questions: (1.) Do you consider it a thoroughly reliable machine? (2.) Is the spring frame comfortable and efficient? (3.) Is the N.S.U. two-speed gear easy to manipulate and foolproof? (4.) Do you advise me to get a 3½ h.p. single-cylinder or a 5½ h.p. twin-cylinder for solo work? (5.) Would the 5 h.p. take a sidecar? According to your Buyers' Guide of 1912 models issued on November 16th, the weight of these machines is very low. (6.) Is the frame a good strong one?—E.H.

(1.) We consider the machine in question to be quite reliable. (2.) The spring frame is comfortable and efficient. (3.) The two-speed gear referred to is easy to control and satisfactory. (4.) Whichever you prefer. If capacity were identical we should choose the twin. (5.) The 5 h.p. would take a sidecar. (6.) The frame is strong enough, but we are not sure of its suitability for attaching a sidecar owing to the springing.

Sidecar Machine for North Wales.

I contemplate purchasing a motor cycle this year, which I require for sidecar work as well as solo, and I shall be much obliged for the following information: -(1.) Do you consider 3½ h.p. Bradbury with two-speed gear chain drive a safe machine for sidecar, weight of self and passenger 22 stones? I live in North Wales, and, no doubt, you are aware of the hilly nature of the district. I was at the recent Show, and I was rather impressed with the above machine. (2.) If you do not consider 3½ h.p. strong enough in frame construction and power for sidecar work is the 5 to 6 h.p. F.N. a reliable machine, and what will be the extra cost of the up-keep of the four-cylinder against the 3½ h.p. or against the 5 to 6 h.p. twin? (3.) I have been offered a 4½ h.p. Quadrant for a reasonable price—is this machine reliable, and likely to give satisfaction for sidecar work? This machine is also fitted with a change-speed gear. (4.) With a chain or gear drive will the wear and tear of tyres be any heavier than with belt transmission? I expect chain or gear will last as long as half-a-dozen belts.—O.W.

(1-2.) We think the machine about which you specially enquire would be quite suitable for the purpose for which you require it. Unfortunately, however, there is not very much reserve of power when you have to use a sidecar in a hilly district. It is quite strong enough as regards frame construction. On the other hand, the four-cylinder would not be any more suitable, as the engine is of smaller capacity by 60 c.c. than the first machine. To enable you to get up all hills with single figure gradients in Wales you would require a change-speed 7-8 h.p. twin. (3.) The machine mentioned here is reliable and likely to give satisfaction. It is not so suitable for sidecar work as the first named, as it is not chain driven. (4.) The tyres will wear a little more perhaps with chain drive, but then this is practically essential if you are going to carry two people. On the other hand, the chains or gears will outlast belts.

A Novice's Queries.

(1.) Are Premier motor cycles reliable and good? (2.) Can a 3½ h.p. single-cylinder free engine with two-speed gear pull a sidecar (as shown by Griffin and Co., Birmingham, with screen and hood and reasonable amount of luggage) up any hill, without the passenger having to get out? (3.) Is there much vibration and strain in riding a motor cycle?—P.H.

(1.) The machines in question are certainly good and reliable. (2.) 3½ h.p. is not enough. You would want about 7-8 h.p. if you wish to carry so much with you. (3.) No, there is practically no vibration from modern motor cycles.

Sidecar Machine for Derbyshire.

Will you kindly advise on the following? I am about to buy motor cycle and sidecar. (1.) Is 3½ h.p. powerful enough? (2.) Is Triumph, New Hudson, or Bradbury the best, or do you recommend another make? (3.) Is chain or belt drive the best? It will be used exclusively for sidecar work. (4.) What sidecar do you suggest? I do not care for the basket car, and want one reasonably weather-proof for passenger. (5.) What clothing do you suggest for wet weather use only? In conclusion, I want a cycle more for reliability and economy than speed.—J.D.

(1.) 3½ h.p. is enough if you do not intend to tour in exceedingly hilly country where there are many single figure gradients. (2 and 3.) It is against our rules to differentiate between the makes mentioned. All are good, but we may tell you that for your district (Derbyshire) a variable speed gear is essential, and preferably chain drive. (4.) Any well-known make of sidecar would do. One has a fairly good choice of bodies nowadays. (5.) Either oilskins or a good waterproof suit would be the most suitable clothing to wear.

Horse-power Rating.

Could you tell me (1) how much difference in power as regards hill-climbing lies between two engines A and B of similar construction? A cubic capacity 499 c.c., bore and stroke 85 × 88 mm. B cubic capacity 997 c.c., bore and stroke 86 × 96 mm. I assume that each machine is fitted with a reliable three-speed gear, and is to be used for sidecar work? (2.) Does the expression "mm." which I have once or twice found written "m/m." refer to millimetres? (3.) How is the cubic capacity of the engine obtained from the dimensions of the bore and stroke?—HARICOT.

(1.) B should have an advantage of about ½ h.p. A well-known formula gives the horse-powers—A 4.67, B 5.16. It is possible that, by careful tuning, special timing and design of valves, etc., the smaller engine might be made to give more power than the larger. (2.) Yes, mm. means millimetres. (3.) To get the cylinder capacity, square the bore, multiply by .7854, multiply by the stroke, and divide by 1,000.

EXPERIENCES WANTED.

"T.R.T." (Cardiff). (1.) 3½ h.p. Lincoln-Elk. (2.) Any 2¾ h.p. lightweight, both with sidecar.

"D.H.W." (Bath). A modern reliable 3 h.p. engine suitable for fitting to a 1906 Triumph frame.

"G.J.B." (Middlewich). 3¼ h.p. 1912 Rudge with and without sidecar.

"A.L.C." (Lee). L.M.C. Auto-varia gear with free engine on 3½ h.p. machine and sidecar.

"G.O.F." (Epsom). 4 h.p. Indian, control, reliability, consumption, wearing qualities.

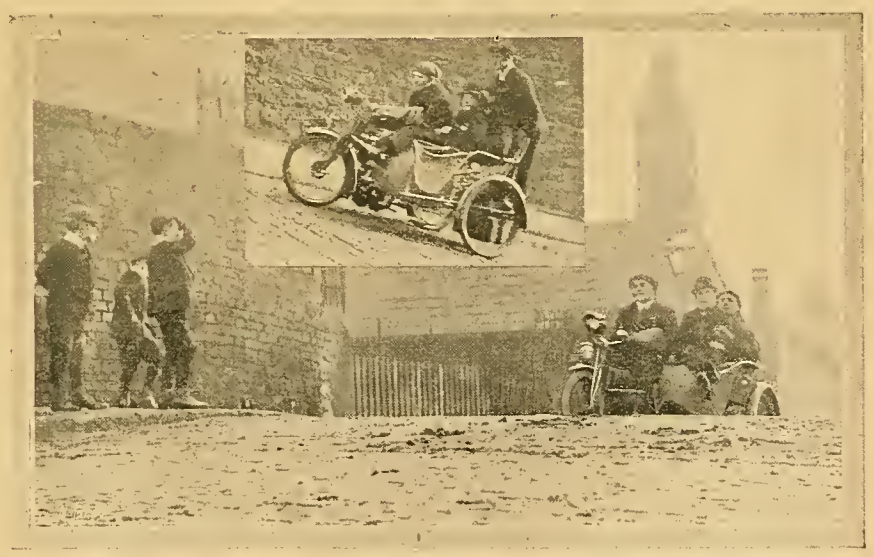
"F.C.C.K." (Devonport). Two-lever carburetter fitted to 7 h.p. Indian.

"C.H.P." (Sparkbrook). 2¾ h.p. (two-speed) Enfield.

C.P. (Tooting).—6 h.p. Matchless twin, belt drive, reliability and control.

"C.L." (Chelsea). Two-speed Douglas.

MANCHESTER'S WORST HILL.



Stoney Brow was recently climbed by Harry Reed, mounted on an 8 h.p. Dot-Jap, from a standing start with three extra passengers. The gradient is 1 in 7 and the surface shocking, as the name implies. The larger photograph was taken at the hill summit, the inset about half way up.

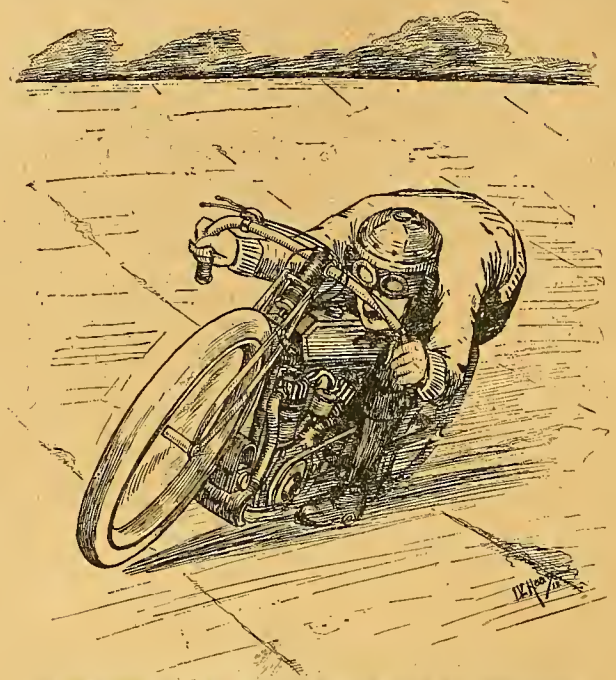
A Chat with Mr. H. Collier, Sen.

WE found Mr. Collier at the new premises, 44, Plumstead Road, Greenwich, two minutes' walk from Woolwich Arsenal gates. It is not generally known that Mr. Collier served his country years ago by working at the big lathes in the naval gun factory at the Arsenal. His experience with "explosion engines" therefore dates from early days.

The new Matchless works should greatly facilitate the turning out of the 1912 models. It is a compact little factory, well equipped, well lighted, run on up-to-date lines, and capable of extension—a real credit to the hard work of Mr. Collier and his sons, who might well share the motto of another famous business man, "Great oaks from little acorns grow."

Unlike many other manufacturers, Mr. Collier is a hearty supporter of races of all kinds. In 1902-3, Charlie and Harry were making rings round their rivals, at Canning Town, using a 2¾ h.p. De Dion engine slung in an inclined position on the frame—an engine which was tuned out of all recognition. The two keen brothers learned their trade in the excellent school kept by Dame Experience, and now what they do not know about engine tuning, and making for that matter, is not worth talking of.

1912 Matchless machines are now being fitted with Matchless engines, made by Messrs. J. A. Prestwich and Co. We mention this fact, because it shows how much the Matchless firm has benefited by racing experience. Mr. Collier therefore seems to be thoroughly justified in what he says about the value of racing.



An impression of C. R. Collier at speed on his 8 h.p. Matchless-Jap. It is interesting to note that this Englishman's speed of 91.37 m.p.h. remains the fastest ride ever accomplished on a motor cycle.

"Where are France, Austria and Germany," said Mr. Collier, "who gave up racing five or six years ago, and at the time they gave it up could beat us? We have never given up motor cycle racing, nor have the Americans, and American or English machines can safely take on any Continental make."

Asked about Charlie's proposed visit to the States, Mr. Collier said he was quite willing for him to go, only he wisely insisted that the money guaranteed should be deposited, preferably with the Auto Cycle Union or some independent party, before he would allow his son to leave the country. Whether or not he could go would also depend on the date of the Tourist Trophy Race, and the number and date of competitions on the Continent this year.

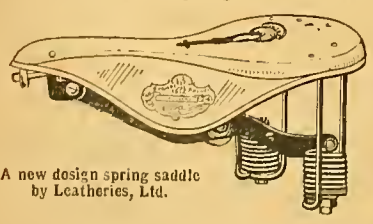
In conclusion, Mr. Collier told us he felt the motor cycle boom was only just beginning, and that in the near future the use of the motor cycle would be vastly extended.

The College Patent Leather Mudshield.

Beard, Brown, and Co., College Street, Wolverhampton, the makers of the College mudshield, send free to all enquirers a full size model of the shield with samples of the leather of which it is constructed, and of the apron material. The model can be fitted up immediately by the rider, and by its means he is able to see at a glance how it adapts itself to his machine.

A New Saddle.

The Leatheries, Ltd., Sampson Road North, Birmingham, has recently introduced a new motor cycle saddle which is called the "Empire de Luxe." It is designed to allow the requisite clearance to enable the saddle springs to fit over the carrier and mudguard. The measurement between the spring hangers is 7in., which gives an extremely low position. F. A. McNab used one of these saddles in the Birmingham M.C.C. winter trial to York and back on the 27th ult., when he gained a gold medal, and was placed first with a total error of 1m. 45s. McNab weighs over 15 stones, so that the saddle was put to a severe practical test.



A new design spring saddle by Leatheries, Ltd.

SPARKLETS

Automatic Carburetters.

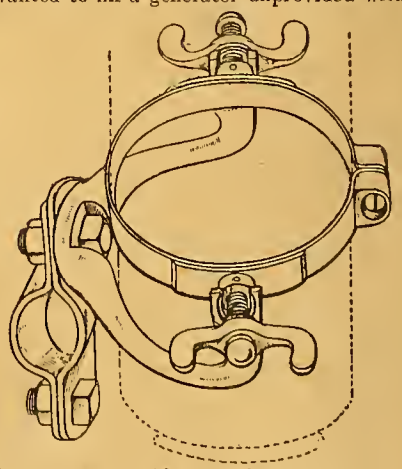
Mr. T. W. Tattersall drove a five years old mount in the M.C.C. Exeter run, fitted with a Stewart-Precision carburetter. Describing his experiences, he says that the exhilaration of driving with the throttle control only is superb, and variations of road, sudden or gradual, have no effect on the mixture, and the effortless feel of the engine is most satisfying. Petrol consumption averaged between seventy and eighty miles per gallon over wet and heavy roads with a twin-cylinder engine (75 × 75 mm.) sidecar and passenger.

Garage Accommodation in the City.

There have often been complaints about finding accommodation for motor cycles and obtaining petrol in the City of London, and it is interesting to note that the New Hudson Cycle Co., Ltd., have moved to new and larger premises for their London depot at 43, Gray's Inn Road, W.C. (just by Holborn Town Hall). The latest New Hudson models are in stock, also spare parts and sundries. A large garage at the back will be exclusively devoted to the needs of motor cyclists, and as few firms hereabouts have petrol licences the firm has made arrangements to supply small quantities of motor spirit to motor cyclists.

A New Generator Holder.

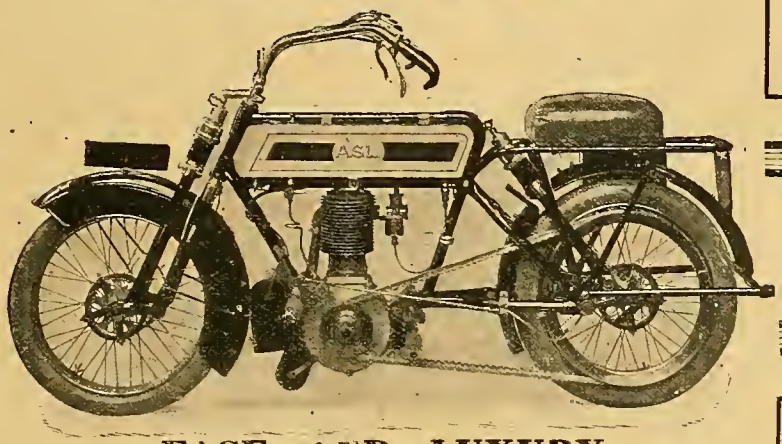
Samuel Hall and Sons, Ltd., Wrottesley Street, Birmingham, have introduced a new generator holder, which we illustrate. This holder is for use with any generator that can be held by side fixings. If it be wanted to fix a generator unprovided with the necessary side attachments in any other place on the machine than where it was originally intended a series of bands can be supplied by the same firm, which are made in all sizes from 2⅜in. to 3¼in. diameter. The band in the sketch is 3¼in. diameter. The introduction of these attachments makes it possible to fit a generator on any single tube of either motor cycle or sidecar.



"A. S. L."

"RIDING ON AIR."

"RIDING ON AIR."



The last word in comfortable riding.

Note the neat disposition of the air springs on front and back forks.

PROOF OF RELIABILITY.
LONDON to EXETER GOLD MEDAL A.S.L.
Only one entered, with the above result.

EASE AND LUXURY

In riding, no matter how rough the roads are, assured the rider of an A.S.L. No shocks of any kind are felt, both wheels being sprung. The machine can be driven in any traffic or country without removing the hands from the handle-bars. Other interesting details will be found in the A.S.L. booklet, post free on request.

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Works: Corporation St., Stafford. Showrooms: G. N. Higgs, 31, Vauxhall Bridge Rd., S.W.
Telephone: 1215 Victoria.

PROOF OF RELIABILITY.
LONDON to EXETER GOLD MEDAL A.S.L.
Only one entered, with the above result.

C.D.C.

The CHAMPION LIGHTWEIGHT

The motor cycle for 1912..

WHERE IT EXCELS.

COMFORT.
You can ride for hours on end without discomfort.

SILENCE.
It does not make enough noise to annoy even an elderly lady.

ACCESSIBILITY.
All parts can be easily dismantled.

ECONOMY.
Ask any Alcyon rider about this.

RELIABILITY.
Just think of our successes in official Reliability Trials.

SPEED.
Greater than any other machine of same capacity.

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Full particulars from
Sole British Concessionnaire;

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Telephone: Victoria 1215.

The RECORDS it Holds

CLASS A.—275 C.C.
100 MILES.
200 MILES.
2 HOURS.
3 HOURS.
4 HOURS.
5 HOURS.
6 HOURS.

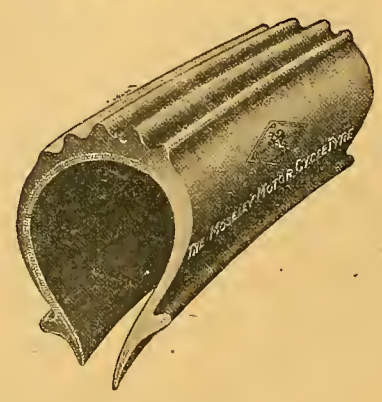
CLASS B.—350 C.C.
200 MILES.
3 HOURS.
4 HOURS.
5 HOURS.
6 HOURS.

Highest speed, 45·71 m.p.h.

The Alcyon also holds numerous prizes and medals won in open Hill Climbs, Races, etc.

Although the engine is only 2 h.p., no Trial is too severe for the Alcyon.

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Upwards of 100 second-hand Bargains.

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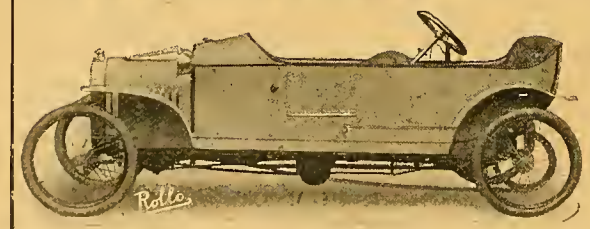
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All machines guaranteed.

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Motorists interested in the camera will find this journal interesting and instructive.

Every Tuesday—One Penny.

1912 MODELS 1912

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MATCHLESS. CLYNOS.
RUDGES.

Early Deliveries—Best Exchanges.

TRIUMPH, 1909, two speeds £37 10
PHANOMEN, 6 h.p. twin, two speeds.... £35 0
REX DE LUXE, 5 h.p., two speeds, 1909 £27 10
REX, 3½ h.p., M.O.V., low built £6 18
MINERVA, Twin 4½ h.p. spring forks.... £16 10
N.S.U., 4 h.p., single cylinder, new last Sept., ideal sidecar machine £27 10
REX DE LUXE, 5 h.p., twin, two speeds, handle starting, M.O.V., 1911 model .. £43 10
REX DE LUXE, 5 h.p., twin, two speeds, 1910 ..... £37 10
REX, 3½ h.p., spring forks, magneto, h.-b. control, 1909 model £22 10
N.S.U., 4 h.p., single-cylinder, new two months ago..... £28 10
REX, 3½ h.p., 1908, spring forks, magneto, h.-b. control, beautiful condition .. £16 10
N.S.U., 3½ h.p., two speeds, magneto ... £19 10
TRIUMPH, 3½ h.p., 1910, Clutch Model £38 10
QUADRANT, 3½ h.p., magneto, spring forks £16 10
PREMIER, 3½ h.p., new, 1911 model £38 0
N.S.U., 3½ h.p., M.O.V., magneto £15 10
N.S.U., 3 h.p., M.O.V., nice order ..... £10 -
REX DE LUXE, two speeds, magneto, handle starting, h.-b. control £22 10
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TRIUMPH, 2½ h.p. £6 10
HOBART, 3 h.p., vertical engine, low £6 10
ROYAL STAR, 2¼ h.p., vertical engine .. £5 10
KERRY, 2¾ h.p., 26in. wheels, vertical engine £8 10
OLYMPIC, 3½ h.p., vertical engine, 26in. wheels £6 10
PREMIER, 3½ h.p., 1912, three-speed gear £58 0
PREMIER, 2½ h.p., 1912, three-speed gear £47 5
QUADRANT, 3 h.p., vertical engine..... £5 10

PUSH CYCLES TAKEN IN EXCHANGE.

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TWIN REX, air-cooled, belt drive, Fit-all two-speed gear £14 10
STEVENS 4 h.p., single-cylinder, air-cooled Roc two-speed gear, handle starting £14 10
TWIN REX, 5 h.p., air-cooled £9 10

CARS.

DARRACQ, 9 h.p., two-seater £15 15
EAGLE, 14 h.p., four-cylinder, five-seater, two speeds and reverse £27 10
HUMBER, 5½ h.p., two-seater, bucket seats, two speeds and reverse £13 10
PHŒNIX, 8 h.p., two-cylinders, magneto, hoods, screen, and lamps £56 0

GENUINE MICHELIN TYRES.

	Beaded.	Wired.	Tubes.
26 x 2	17/-	16/8	9/6
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MICHELIN BUTTED TUBES.

26 x 2 **11/6** 26 x 2¼ **11/9** 26 x 2½ **12/-**
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Carriage Paid. All Guaranteed. Prompt Delivery

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New Amac Variable Jet and H.-B. Control 18/6
Ditto Second-hand 12/6
Longuemare, Minerva, F.N. Carburetters 4/6
Good Rigid Sidecar..... 57/6
Millford Castor Wheel Sidecar..... £6 0
Long Handle-bars, dropped ends 5/6 and 6/6
Coronet Silencers, up to 5 h.p..... 3/3 and 4/6
New Handle-bar Mirrors 2/3
Gripskin Belting: ⅜in. **10d.**, ½in. **11d.**, tin. 1/-
Wide Mudguards, 30in., **2/3**; 4in., **2/11** pair.
Handle-bar Watches, with holders 4/3
New Sidecar Frame and Wheel..... 35/-
Trembler Coils, **6/6**. Plain 2/11
Powell and Hanmer £1 Lamp 11/6
16 Guinea Lowen Sidecar £5 0
Nearly New Coronet Sidecar..... £3 10
New Fuller Midget Coils..... 7/6
New Footrests 2/6

Booth's Motories,

Keighley Mills, Bedford Street North, Halifax.
Tel. 1062.

MOTOR BICYCLES FOR SALE.

1911 1½ Triumph, soiled, £43; 2¼h.p. Enfield, nearly new, £31.—86, Fargate, Sheffield.

DELIVERY from Stock, 1912 free engine B.S.A., 1912 T.T. Ivy Precision, £45.—Below.

ROC, 4h.p., Roc 2-speed, not run 250 miles, everything as new; bargain, £28.—Below.

20 Machines in stock.—We will buy, sell, or exchange.—Parker, Stanley Garage, Westbrook St., Bolton. 'Phone: 1348.

1912 Rudge, fixed engine model, in stock; £48/15.—Redfern's, Westgate, Rotherham.

LIVERPOOL Official Agents for Humber and Dot Henry Whitlock and Co., 40, Hope St

3½h.p. Magneto Riley, B. and B., Whittle, Palmer cords; £16.—Roberts, 14, Avondale St., Colne.

1911 Triumph, free engine, little used, perfect; £46.—Holford Jones, 9, Westbourne Rd., Birkdale.

LATE 1911 Rudge, free engine, like new; £48, or nearest offer.—Redfern's, Westgate, Rotherham.

1912 Clutch Triumph, brand new, makers' specification; what offers?—Wilkinson, jun., Wheelgate, Malton.

1910 Bradbury, in splendid condition, just been over hauled; a bargain, £33.—Stanley, 63, Piccadilly, Manchester.

CLYNOS and Rudge, multi-speeds; deliver March, book now to secure.—Smith, Motor Agent, Horbury.

TRIUMPH, 2¾h.p., low, big lamp, spring forks, B and B.; photo; £11/10.—R. Frank, Copmanthorpe, York.

3½h.p. Minerva, magneto, everything, h.b.c.; £16; exchange good lightweight.—Sparrow, 32, St. Mary's, York.

3h.p Bradbury, magneto, h.b.c. Amac, good tyres and belt, fast, reliable; £12/10.—Gandy, Heathfield, Stockport.

1911 Moto-Reve, 2¾h.p., twin, new tyres and belt, in excellent condition; £29, or exchange.—17, Peel St., Accrington.

3½h.p. 1909 Premier, good condition, all accessories; what offers?—Evans, Hoghton Hall, Hoghton near Preston.

P. and M., August, 1910, very little used, with sidecar: £50, without £42.—Windemer, 4, Royal Parade, Harrogate.

PRESTON.—Sidecars.—The right thing at the right price; 12 different models; your old sidecar taken in part exchange.

PRESTON.—Sole district agents for Zenith-Graduas, Jap-Rex, Ivy-Precisions, etc.; exchanges our speciality.

PRESTON.—Note address for anything motor cyclish, the Motor Cycle House, 82a, Fishergate (next door to Fishergate Post Office).

DOUGLAS, Triumph, Humber, splendid second-hands; exchanges.—Parish, Bradbury and Douglas agent, Preston. Sidecars.

DOUGLAS 1910 Lightweight, complete with all accessories, perfect condition; bargain, £20.—Simpson, Thorne, Yorks.

1909 3½h.p. Twin Premier, less front cylinder, in good order otherwise; £12.—No. 9,352, *The Motor Cycle* Offices, Coventry.

1912 Standard Bradbury, in stock, £48; early deliveries of Triumphs and Matchless motors.—Cross, agent, Rotherham.

HALIFAX.—1912 Bradbury and Rex motors; prompt deliveries; liberal exchanges.—Write now, Motor Exchange, Westgate, Halifax.

BRADBURY, in perfect order, all accessories; trial run arranged; £26, or best cash offers.—Winder Bros., Woodhouse St., Leeds.

1911 Rex, 3½h.p., brand new, never been run yet, everything as per manufacturers' specifications; £33.—17, Peel St., Accrington.

DOUGLAS, 1910, splendid order and condition, several spares, valves, etc.; £29.—Box No. 9,345, *The Motor Cycle* Offices, Coventry.

PHELON and Moore, 1911, Colonial model, perfect condition, £52; Millford radial castor sidecar, £8.—Byrom, 50, Albion St., Leeds.

3½h.p. Triumph, 1908, with accessories, condition like new, £24; also Douglas, 1909, £21, perfect; must sell.—168, The Moor, Sheffield.

1909 3½h.p. Minerva, Bosch, new Dunlop belt, 1911 cylinder and piston, perfect; £18/10.—E. Ogden, 63, Hampden Grove, Patricroft, Manchester.

1911 B.S.A., L.M.C. free engine, Auto-Varia pulley Fulford Herald sidecar, new Rom, new Dunlop belt, first-class condition; £48.—W. Potter, Thirsk.

1910 2¾h.p. J.A.P., Simms magneto, 1911 B. and B. carburetter, 1912 Lyso saddle, Dunlops, low position, fast, perfect; £25.—48, Park Grove, Barnsley.

3½h.p. Brown, accumulator ignition, new back cover, leather belt, lamp, splendid running order; £14, or offer.—Oswalt, 22, Herbert St., Whitworth Park, Manchester.

CORONET SIDE CARS

THE ENORMOUS SALE

of Coronet Sidecars proves conclusively that you cannot buy better. We have the plant and experience; and know what is required. Why experiment with freaks and unknown makes, to your cost?



MODEL C.—£7 2s. 6d.



MODEL A.—£5 5s.



MODEL E.—£7.



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Instructive Catalogue post free, giving illustrations and full particulars of all models of Coronet Sidecars. Every model certain to satisfy and save money for buyers. Full of improvements. Quick detachable joints. Latest car pattern mudguards. Wicker, cane, or coach-built bodies. Chila's reversible seat. Excellent upholstery.

NOTE front arm which grips main tube of sidecar, which is the only correct mechanical method—nothing lopsided about this attachment.

Delivery from stock to suit TRIUMPHS, N.S.U.'s, REXES, P. & M.'s, BRADBURYS, etc.

Discounts to Agents.



TEE BEE LOW SEAT-PILLAR, 5/- each.

GREAT CLEARANCE LINE.

New Dunlops, 28 x 2 and 2¼, wired edges .. 10/6
Dunlops, 28 x 2, beaded, heavy treads 14/9
2¼ x 2 and 2¼ Beaded Clipper Covers, new .. 8/6
Best Quality Butt-ended Tubes 7/9
150 New Tubes 26 x 2¼..... 5/11
Rubber-studded Covers, best make 25/-

ENGINES:

4 h.p. Twin N.S.U., with Bosch gear-driven magneto, brand new from makers £11 10
4 h.p. Twin N.S.U., with magneto £9 0
3½ h.p. N.S.U., M.O.V. £3 10
3 h.p. FAFNIR, silencer, etc. £3 10
4½ h.p. BUCHET, water-cooled £6 15
9 h.p. DARRACQ, water cooled £9 10
10 h.p. CLEMENT, two cylinder..... £9 10
3½ h.p. REX, M.O.V. £3 10
4½ h.p. PRECISION, new 1912 Model £13 10
1¾ h.p. MINERVA £1 8 | 2½ h.p. DE DION £1 15
3 h.p. QUADRANT £3 0 | 2¾ h.p. MINERVA £3 5

Exchanges entertained.

MAGNETOS. MAGNETOS. MAGNETOS.

We have a large stock of the best makes from 59/6. Your old coil and acc. taken in exchange.

NEW CARBURETTERS FOR OLD.

22/- and your carb. secures a new B. and B. with h.b. control.

20/- and your carburetter secures a new Amac **with** variable jet and h.b. control.

Delivery per return.

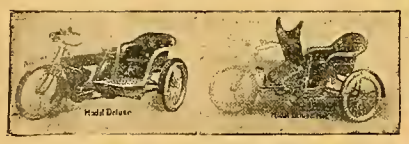
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£6 6s. model less apron. £6 6s. model with apron.



£7 7s. model. £8 8s. model.

26 x 2¼ Michelin tyres. Double Cee Springs. Wide mudguard. Three-point suspension. Dropped hearer bar if desired. Double stove enamelled.

Guaranteed twelve months. Need we say more ? ? ?

NOTE ! ! ! Our £8 8s. Model weighs 78 lbs. only, not between 1 and 2 cwts., as suggested.

We have the under-mentioned dates open for delivery for various **1912 Models.**

ALL FULLY GUARANTEED.

RUDGE, 3½ h.p., standard	Ex-stock
RUDGE, 3½ h.p., clutch	Ex-stock
RUDGE, 3½ h.p., multi-speed	March
ZENITH, 3½ h.p., Gradua gear	Ex-stock
ZENITH, 6 h.p., Gradua gear	Jan. 25
DOUGLAS, 2¾ h.p., Model K	Ex-stock
DOUGLAS, 2¾ h.p., Model G	March 9
HUMBER, 2 h.p., 3-speed	Feb.
ROVER, 3½ h.p., clutch model	Feb.
NEW HUDSON, 3½ h.p., 3-speed	Feb.
BRADBURY, 3½ h.p., standard	Ex-stock
BRADBURY, N.S.U. 2-speed	Feb.
BRADBURY, chain drive, 2-speed	March
ENFIELD, sidecar combination	Feb. 14
INDIAN, 7 h.p., 2-speed	Feb. 19
MORGAN Runabout	Feb. 20
BAT, 4 h.p., 2-speed	March 25
BAT, 6 and 8 h.p., two speeds	April 1
SCOTT, 3¾ h.p., two-stroke	April 25
A.J.S., 5 h.p., chain drive, 2-speed	May 20
HUMBER, 3½ h.p., two speeds	June 1
REX, 6 h.p., sidette	From stock
REX, 4 h.p., De Luxe	Ex-stock
REX, all other models	10 days
CLYNOS (Halifax stocks only)	Feb.
A.C. Sociables	March 14

1912 MODELS.

We have the under-mentioned machines for dates as below

1912 3½ h.p. Clutch **RUDGE**	Ex-stock
1912 3½ h.p. Tourist **RUDGE**	Ex-stock
1912 6 h.p. **ZENITH**	Ex-stock
1912 3½ h.p. **ZENITH**	Ex-stock
1912 **ENFIELD,** sidecar combination	Jan. 30
1912 3½ h.p. **NEW HUDSONS,** 3B	Jan. 15
1912 3½ h.p. Standard **BRADBURY**	Stock
1912 2¾ h.p. **DOUGLAS,** Model K	Jan. 15
1912 7 h.p. **INDIAN,** 2-speed	Feb. 19
1912 2¾ h.p. 3-speed T.T. **HUMBER**	March 15
1912 3½ h.p. 2-speed **HUMBER**	March 15
1912 3½ h.p. Clutch **ROVER**	March 18
1912 3½ h.p. 3-speed **ROVER**	March 20
1912 8 h.p. **MORGAN** Runabout	March 9
1912 6 h.p. **A.C.** Sociable	March 14
1912 3½ h.p. **BRADBURY,** chain drive	March 21
1912 3½ h.p. **BAT,** 2-speed	March 25

All dates subject to being still unbooked.

WRITE US. SAVE YOURSELF MONEY.

CASH OR EXCHANGE

MAUDES' MOTOR MART

136 GT. PORTLAND ST. LONDON W.

MOTOR BICYCLES FOR SALE.

1911 Bradbury, free engine, £35; 1911 New Hudson, free engine, £35; 1909 Bradbury, £16.—Johnson, 114, Cambridge Rd., Southport, New Hudson agent.

LIVERPOOL Official Agents for Bradbury, Zenith, Singer, Rex, Clyno, Moto-Reve; delivery from stock.—F. C. Jones and Co., 3, Redeross St., Liverpool.

HALIFAX.—New 1911 Rex Tourist and de luxe models, in stock; discount for cash, or exchanges liLerally dealt with. — Motor Exchange, Westgate, Halifax.

INDIAN, 1910, 5h.p., P. and M. 2-speed gear, footboards, nice condition, run 2,000; £42; exchange lower power and cash.—15, Bradford Street West, Bolton..

1912 Triumph, 2,000 odd miles, carefully used, appearance and condition as new, £3 worth spares; nearest £37/10.—No. 9,321, *The Motor Cycle* Offices, Coventry.

1911 Bat, 8h.p., complete, with lamp, horn, tools, and spares; all as new, bought September, done 1,000 miles; only £46.—Chas. Taylor, 73, Bingham St., Rotherham.

SEE, Write, or Wire, Geo. Merrick; he's the man for Bradburys; in stock, Rudge, B.S.A., A.J.S., N.S.U., and runabouts.—Merrick's Stores, Listerhills, Bradford. Tel.: 2439.

CLYNOS.—Call and inspect new model, with Clyno sidecar, years ahead of all other sidecar machines; order now, booking up fast.—Potter, the Clyno man, Leicester Grove, Leeds.

SPLENDID Opportunity.—1911½ 3½h.p. 2-speed handle starting Humber, lamp, horn, tools, guaranteed in A1 condition, splendid sidecar machine; accept £35.—Millards, drapers, Rotherham.

ROYAL Enfield, late 1911, 2-speed model, brand new, offers invited; sole agents for Triumph, New Hudson, Rudge, Enfield; prompt deliveries of all models.—Wardmans, Princes St., Harrogate.

LIVERPOOL Agency for Triumph and Matchless Motors. Hitchings, Ltd., 74, Bold St., Liverpool, the pioneers of motor cycling in the North. It will pay you to deal with Hitchings, Ltd., an old-established firm of highest repute.

HITCHINGS, Ltd., for Triumph and Matchless Motors; any make supplied on most favourable terms; exchanges arranged; absolute satisfaction and courteous service assured by dealing with Hitchings, Ltd., 74, Bold St., Liverpool. Established over 30 years.

1911 Bargains.—Bradbury, shop-soiled, £39; 2¾h.p. 2-speed F N., in splendid order, £32; 3½h.p. Premier, run 150 miles, £33; 14-guinea Millford castor cane sidecar, hardly used, £11/5.—The Brighouse Motor Agency, Bailiffe Bridge, Brighouse.

EARLY Delivery 1912 Zenith, P. and M., Scott, Bradbury, Matchless, A.J.S., and Douglas, Millford sidecars with wolbrown bodies; 1911 3½h.p. Bradbury, 2-speed, and cane sidecar, complete, £46/10.—W.F. and Co., 5, Cheltenham Parade (2 doors from Opera House), Harrogate.

CALTHORPE, 1911, Precision engine, 3½h.p., B. and B. carburetter, Druid spring forks, Simms magneto, Brooks saddle, Hutchinson tyres, special toolbags, contents, only been ridden 500 miles, magnificent show machine, spares, coat; £40, or near offer.—Ryecroft, Bower St., Harrogate.

2-SPEED 1911 Rex de Luxe, 3½h.p., 1912 engine improvements, Kempshall back, metal stud front, both new, 2¼in., Rex exhaust whistle, Miller mud shield, London-Exeter medallist; examination invited; £42/10; sidecar if required; exchange 3-speed lightweight and cash.—Stuart-White, Chestnut Av., Crossgates, Leeds.

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

1911 F.E. Triumph, Palmer covers, tube, and Lyso belt, new, also sidecar.

1911½ 2¾h.p. A.J.S., belt drive, new Dunlop complete tyre, all sound.

1911½ 3½h.p. James, 2 handle-bars.—Hussey, Vine St., Stafford.

3½h.p. Brown, good order; £10 cash, or exchange; trial.—Jones, Bore St., Lichfield.

3½h.p. Rover, free engine, new 4 months ago, perfect condition.—J. Cooke, Sandbach.

1¾h.p. Minerva Motor Cycle, in good running order; £7.—Everitt's Garage, Droitwich.

2h.p. 1911 Humber Lightweight, as new, complete lamp, horn, stand, carrier, and tools; bargain, £25.—Everitt's Garage, Droitwich.

TRIUMPH, 1911, 5 months old, perfect condition; £43.—C., White Lodge, Bromborough, Cheshire.

TRIUMPH, 1910 model, splendid order, Climcher tyres, complete with accessories; £33, bargain.—Moss, Wem.

MATCHLESS, 6h.p., 1910, double lubrication, just overhauled, perfect; any trial; £32.—Poole, Hadley, Salop.

3½h.p. Quadrant, Bosch, h.b.c., spring forks, takes sidecar, perfect running order; £19.—34, Warner St., Derby.

MAUDE'S BARGAINS.

To prevent any misunderstanding, we may here say that all goods are **GUARANTEED** and sold as in good running order and condition.

CALL AND INSPECT.

We cannot treat fairer, and it is a much better way than sending your orders miles away by post and getting the dissatisfaction that is bound to ensue.

A selection from our list of good reliable second-hand machines :

DOUGLAS, 1911 model, Model E, two speeds, spring forks, Bosch magneto, good tyres, like new £36

PREMIER, 1910 model, 3¾ h.p., twin, Dunlop tyres, Bosch magneto, very fast, and suit sidecar £32

N.S.U., 1910 model, 3½ h.p., magneto, good tyres, handle-bar control, spring forks, condition as new £28

CALTHORPE, 1911 model, 3½ h.p., Precision engine, Hutchinson tyres, not done 1,000 miles, magneto, handle-bar control £36

REX, 1911 model, 5 h.p., tourist, condition equal to new, M.O.V., spring forks, B. & B. carburetter, handle-bar control, Bosch magneto, Rey whistle, trials machine, and gold medal winner £35

REX, 3½ h.p., 1911 model, like new, cone clutch model, only used 100 miles for trials, perfect £38

V.S., 1910 model, 7-9 h.p., two speeds, Nala gear, Truffault spring forks, finished cream, Bosch magneto, very fine sidecar mount, just been thoroughly overhauled £39

SCOTT, two-stroke, two speeds, free engine, spring forks, Palmer tyres, water-cooled head, spring footboards £25

MATCHLESS, 1910 model, 8 h.p., side valves, J.A.P. engine, car tyre rear wheel, cream finish, very fast, admirable sidecar mount, special price £35

REX, 1907 model, 5 h.p., twin-cylinder, free engine, spring forks, enamel and plating as new, a bargain £16

N.S.U., 1908 model, 5½ h.p., twin, very low built, magneto, two speeds, free engine, admirable sidecar machine £26

HUMBER, 1911 model, 3½ h.p., two speeds, free engine, handle starting, had very little and very careful usage £37

F.N., 1909 model, four-cylinder, spring forks, Bosch magneto, shaft drive, complete with rigid sidecar, fine turnout £30

REX, 1908 model, 3½ h.p., two speeds, handle starting, Bosch magneto, spring forks, fine sidecar mount £22

N.S.U., 1908 model, 3½ h.p., very low built, spring forks, magneto £20

PHOENIX, quad car, 8 h.p., Fafnir engine, two speeds, wheel steering, reverse, Bosch magneto £30

V.S., 1908 model, 5 h.p., twin, just been overhauled, Truffault forks, Bosch magneto, for spot cash £25

PEUGEOT, 7-9 h.p., very low built, Bosch magneto, pan seat, 2½in. tyres, very powerful .. £28

ARIEL, 1910 model, 3½ h.p., free engine, M.O.V., Bosch magneto, very fine solo mount £30

REX, sidette, 1911 model, 7 h.p., two speeds, Bosch magneto, handle starting, coach-built, sidecar £52

HUMBER, 1909½ mod l, 3½ h.p., two speeds, handle starting, very fine sidecar mount .. £31

REX, 1911 model, 7 h.p., two speeds, handle starting, spring forks, Bosch magneto, very fine sidecar mount £49

MINERVA, 4½ h.p. twin, M.O.V., steel-studded rear tyre, spring forks, just been overhauled, plated and re-enamelled £21

TRIUMPH, 1909 model, magneto, spring forks, very fine solo mount £30

REX, 1908, 5 h.p., 2-speed, De Luxe, magneto, spring forks, complete with sidecar £31

T.A.C., 1911 model, 7 h.p., four-cylinder, three speeds, handle starting, worm drive, magneto £45

TRIUMPH, 1909 model, 3½ h.p., two speeds, free engine, Bosch magneto, complete with Lucas lamp, Millford sidecar £49

REX, 1910 model, 5 h.p., two speeds, magneto, spring forks, very fast and good sidecar machine £40

We have numerous other machines for disposal. Send us your requirements. Cash or exchange.

MAUDES MOTOR MART,
136 GREAT PORTLAND STREET,
LONDON W

Telephone, 552 Mayfair
Telegrams "Abdicate" London

(LISTS POST FREE)

In the Front Rank.

SCOTT'S SIDECARS

from **5 guineas.** Quick detachable fittings; wicker, white cane, or coach-built bodies; wheels supported at each side; special gauge tubing, and all improvements. Let us quote you.

WHY

do our sidecar springs resemble a woman? (See next week's "Motor Cycle" for answer.)

ALL MACHINES GUARANTEED.

Delivery of RUDGES, CLYNOS, ZENITHS from stock.

Write us immediately.

RUDGE, free engine, 1911, in splendid condition throughout, as new, Palmer Cord tyres £45 0
BRADBURY standard 1911 model, unscratched, beautiful condition £39 0
RUDGE racing model, 1911, all improvements, very speedy, first-class condition £40 0
N.S.U., 4½ h.p., twin, 2-speed gear, Bosch magneto, very fast £24 0
N.S.U., 3½ h.p., 1908, magneto, h.b.c., good and sound throughout £21 0
HUMBER, 3½ h.p., 2 speeds, Bosch magneto, handle starting, free engine, etc. £29 0
N.S.U., 3 h.p., magneto, N.S.U. patent carburetter, very good tyres £18 0
REX, 1911, brand new, twin, all improvements, standard £38 0
REX, 5 h.p., 1909, spring forks, adjustable pulley £26 0
REX DE LUXE, 1909, 5-6 h.p., 2-speed gear, variable pulley, springs £33 0
REX Speed King, 3½ h.p., especially built for the Isle of Man Races, chain drive £25 0
REX DE LUXE, 5 h.p., Bosch, twin-cylinder, handle starting £28 0
RIP, Peugeot engine, low built, racy £12 0
LLOYD'S, 2 h.p., smartly finished £8 0
ADVANCE, 6 h.p., magneto, twin-cylinder, B. and B. carburetter £18 0
PORTLAND, Peugeot engine, 3½ h.p., 1911 model, Bosch magneto, rubber non-skid tyres, little and carefully used .. £32 0
REX, 5-6 h.p., 1911, M.O. valves, 2 speeds, free engine, special built sidecar, very luxurious £42 10
HUMBER, 3½ h.p., Roc 2 speeds, handle starting, and free engine £34 0
REX DE LUXE, 5-6 h.p., 1909, 2 speeds, variable pulley £38 0
MINERVA, 8 h.p., Roc 2 speeds, handle starting, torpedo tank, grey finish, all improvements, Mills-Fulford sidecar .. £47 10
PHELON & MOORE, 1909, 2 speeds, handle starting, complete with sidecar, condition throughout as new £45 0
QUADRANT, 3½ h.p., good sidecar £15 0

MISCELLANEOUS.

1911 Brown and Barlow Carburetter 2S/-
Mills-Fulford Sidecar, in splendid condition £8 0
Farrar Sidecar, torpedo shape £3 5
New Fuller Midget Coil 7/3
Wide Mudguards, 3½in., with stays 2/3
" " 4½in. " 2/11
Long Handle-bars, dropped ends 6/-
Miller Sidecar, quick-detachable lugs £4 5
Portland Sidecar, as new £4 10
New Goggles, usually sold at 2/6 ..... 1/6
New Bosch Plugs 3/6

SCOTT'S,

Victoria Motor House,
POWELL STREET, HALIFAX.

Telephone—433 National.
Telegrams—"SCOTT, Powell Street, Halifax."

MOTOR BICYCLES FOR SALE.

1912 Bradburys, standard and free engine models; delivery January; cash, easy payments, or exchange.—Willmott Bros., Norwich.

1912 Centaurs, 2¼h.p. twin, in stock, £42; torpedo Precision, 2¼h.p., £37; sidecars, £6/6.—Willmott Bros., Norwich.

NEW HUDSONS, Premiers, Humbers, B.S.A.—For early deliveries and exchanges, see T. H. Nice, Bury St. Edmunds.

BRADBURY, late 1911, standard, quite new, shop-soiled only; best offer accepted.—Belmont Motor Co., 96, King St., Cambridge.

2¾h.p. Minerva, excellent order, for cash, or exchange with cash for 5 or 6h.p., free engine, suitable for sidecar.—Crouch, Sutton St. Edmund, Wisbech.

TRIUMPH, 1909, carefully used, recently re-bushed, 1911 piston, X'all saddle, speedometer, watch, and new Palmer; £30.—E. J. Banyard, East Rd., Cambridge.

NEW F.E. Triumph, in crate, just in; 3½h.p. new Rover, fitted with Triumph clutch; exchange Triumph, Indian, or 2-speed Douglas.—Triumph, agent, King's Lynn.

1912 L.M.C. Motor Cycles; immediate delivery; trial runs and interviews by appointment.—W. E. Sneezum, 14, Fore St., Ipswich. Sole agent Ipswich and district.

B.S.A.! B.S.A.! B.S.A.! — Early deliveries of all models of these celebrated machines; second-hand machines part payment.—A. F. Garnham and Co., sole agents, Ipswich.

1911 Jap-Chater-Lea, 4h.p., £37/10; 7-9h.p. Peugeot, Chater-Lea, Nala 2-speed, art cane sidecar, £62; 1¾h.p. Mot sacoche, perfect condition, £11.—Brown, motorist, Thetford.

1910 3½h.p. Premier, only used during 1911, lamp, horn, £24, bargain; **1912** standard free engine, and T.T. roadster Triumph in stock.—Mitson's, Wellington St., Newmarket.

2¼h.p. Genuine New Hudson, new tyre and tube on back, spare engine parts, low and comfortable, excellent condition, guaranteed; £10.—Lambert, Beccles Rd., Bradwell, Gt. Yarmouth.

1911 Triumph, perfect condition, 39 guineas; 1909 Triumph, splendid order, 30 guineas; 1911 2¼ h.p. Enfield; two 3½h.p. N.S.U.'s cheap; De Dion, good running order, 6 guineas.—Lambert, Thetford.

1912 L.M.C. Motor Cycles; immediate delivery; catalogue and best terms.—W. E. Sneezum, 14, Fore St., Ipswich. Sole agent Ip wich and district, including Felixstowe, Walton, Woodbridge, Melton, Wickham Market, Framlingham, Needham Market, etc.

SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

WOLF, 1½h.p., perfect; £11, or nearest offer; approval, or trial.—Hurley, Felinfach, Tondu.

ARIEL, 3½h.p., 1911, free engine, variable gear, splendid condition.—Young, 19, Priory St., Dudley.

2¾h.p. Pebok, low, fast, reliable; £10, offers; wanted 2¾ 3½h.p. Precision, or modern machine.—Elcock, Portheawl.

TRIUMPH, 1910¾, splendid condition, will ride 40 miles to purchaser; £36.—The Stocks, Suckley, Worcester.

FOR Earliest Deliveries of Triumph, Humber, Enfields, Singer, Premier, apply at once, Griffiths, Cycle Emporium, Llanelly.

MOTO REVE 2h.p. Twin, late 1909, magneto, Continental front, Clincher back, running order; £18 —R. S. Lucy, Areley House, Stourport.

3h.p. Quadrant, low, long bars, spring forks, 1911 B.B. carburetter, new tyres, spare outer and valves, perfect condition; £8; offers.—Kernick, Cwmbran (Mon.)

1912 Free Engine Rudge, never used, registered; £52/10, or near offer; selling through illness.—Box No. L5,642, *The Motor Cycle* Offices, 20, Tudor St., E.C.

TRIUMPH, 3½h.p., clutch, late 1910, bought new April, 1911, usual spares, best Lucas lamp, engine and frame excellent; £40.—Jones, Eagle House, Stourbridge.

PREMIER, 3½h.p. F.E., 1911 as new; Lucas 50/- lamp and 23/- horn; cost £58/10, accept £39; expert examination invited.—Box 9,336, *The Motor Cycle* Offices, Coventry.

SINGER, 3½h.p., 1911-12, with or without N.S.U. 2-speed gear, condition equal to new; price with spares and gear, £48; without gear £43.—No. 9,041, *The Motor Cycle* Offices, Coventry.

ENFIELD Twin, 2¼h.p., 1910, £19; Minerva, 1¾h.p., £3; Clement-Garrard, £3/10; Humber tricar, 5h.p., water-cooled, 2-speed, tyres good, £19; 1912 free engine B.S.A., in stock.—Ivor Roberts, Oxford St., Swansea.

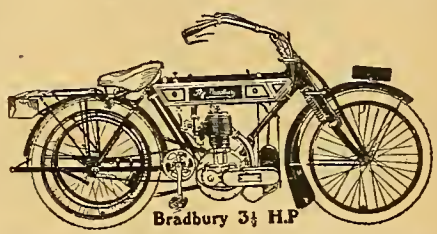
TRIUMPH, February, 1910, 3½h.p. free engine motor cycle, h.b.c. magneto, nearly new Fit-all 2-speed gear, Palmer cord tyre, and Herald sidecar, £43, cycle and sidecar separate, £39/10 and £3/10. — Roderick, solicitor, Llanelly.

Collier's Motories,

Westgate, Halifax,

ENGLAND.

Early deliveries of 1912 Bradbury machines.



Bradbury 3½ H.P.

Exchanges Quoted. Distance no objection.

£8 deposit and **10/-** weekly secures—

Magneto **Triumph** £25 10
5½ h.p. Twin **Rex de Luxe,** mag. .. £24 10
Four-cylinder **F.N.,** magneto..... £19 19
3½ h.p. Magneto **Rex** £19 19
Twin **Moto-Reve** £19 19
F.N. Magneto Lightweight..... £19 19

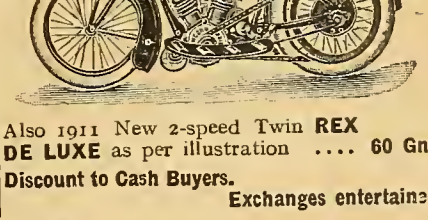
SECOND-HAND MACHINES.

CASH, EXCHANGE, OR EASY PAYMENTS.

1911 Twin two-speed **REX DE LUXE** £47 10
6 h.p. Twin **ZEDEL,** Bosch, B. and B., spring forks £29 10
1910 3½ h.p. Twin **REX,** M.O.V. £37 10
FAFNIR, Bosch, h.b.c., Indian red, Druids £19 10
Magneto **TRIUMPH,** spring forks, very smart £25 10
Twin **REX DE LUXE,** and Montgomery Sidecar .. £25 0
REX, 1910 3½ h.p., "hot stuff" £29 10
5½ h.p. Two-speed Twin **REX DE LUXE** £27 10
5 h.p. 1910 Twin **REX,** special machine £23 10
4½ h.p. Four-cylinder **F.N.,** magneto £19 19
2¾ h.p. **KERRY,** runs well, spring forks £10 10
1910 3½ h.p. T.T. **REX,** very fast £27 10
TRIUMPH, 1908, very good..... £28 10
h.p. **HUMBER,** chain drive £7 10
1909 3½ h.p. **REX DE LUXE,** two speeds..... £32 10
1908 3½ h.p. Magneto **REX,** spring forks £22 10
1907 3½ h.p. Magneto **REX,** spring forks £19 19
1½ h.p. **WOLF** Lightweight, h.b. control £12 10
3½ h.p. Tourist **REX,** brand new..... £29 10
1910 Twin **REX DE LUXE,** two speeds £42 10
New Twin **REX,** cantilever seat ..... 36 Gns.
Twin **REX DE LUXE,** and Sidecar £27 10
MOTO-REVE, magneto, Druids £19 10
MOTOSACOCHE Lightweight £14 10
3½ h.p. **MINERVA,** M.O.V. £14 10
Enfield Lightweight, magneto, spring forks £19 19
REX, 3½ h.p. spring forks £15 10
1911 3½ h.p Tourist **REX** £32 10
1911 Twin **REX DE LUXE** £46 10
1911 Single-cylinder Two-speed **REX,** 300 miles .. £32 10

A CALL WILL REPAY YOU.

Brand New 1911 3½ h.p. Tourist **REX** ..... 43 Gns.
" " 1911 2¾ h.p. 2-speed **REX** Junior .. 50 Gns.
" " 1911 3½ h.p. Free-engine **REX** .... 48 Gns.
" " 1911 3½ h.p. **REX DE LUXE** ..... 57 Gns.



Also 1911 New 2-speed Twin **REX DE LUXE** as per illustration .... 60 Gns.

Discount to Cash Buyers.
Exchanges entertained.

SECTION VII.

Gloucester, Oxford, Buckingham, Berks Wilts, and Hants, and Channel Islands.

P and M., 1909, perfect condition; £35.—Yeoman, Bernard St., Southampton.

EYLES and Eyles, new Motor Garage, 113, St. Aldate's (opposite the Town Hall), Oxford.

EYLES and Eyles.—4h.p. Indian, free engine, perfect condition; £44.

EYLES and Eyles.—7-8h.p. Indian, free engine, with sidecar, perfect condition; £60.

EYLES and Eyles.—2¾h.p. Douglas, perfect condition: £34.

EYLES and Eyles.—3½h.p. Premier, perfect condition £32.

EYLES and Eyles.—3½h.p. Rex, perfect condition, £25.

EYLES and Eyles.—3½h.p. B.S.A., free engine, new; £52/10.

EYLES and Eyles.—All the above are 1911 models.

EYLES and Eyles, Oxford, the University House.

LOW Motor Cycle, with 26 wheels, magneto; £10, or offer.—Moss, Coldash Hill, Liphook.

3h.p. Excelsior, going order, new 26in. Palmer back; £8.—9, St. Denys Rd., Southampton.

DOUGLAS, 2¾h.p., late 1911 machine, brand new; 30 guineas cash.—Jelf, Southgate St., Bath.

DOUGLAS, Model D, splendid condition, lamp, horn, spares; £28.—135, Cetham Brow, Bristol.

1911 Clutch Triumph, perfect condition throughout; £43.—Ratcliff, 88, Worcester St., Gloucester.

3½h.p. Aster Motor Cycle, just overhauled, adjustable pulley; £14.—Cocks, New Rd., Spencer's Wood, Reading.

DOUGLAS, 1908 model, good running order, tyres equal new; £17/10.—Garbutt, Churchdown, Cheltenham.

DOUGLAS, late 1911, Model D, 2-speed, perfect condition.—Particulars, Thorngrove, Malvern Rd., Gloucester.

2¾h.p. De Dion Coventry Eagle, accumulator, recently overhauled; £12.—Blissett, 116, Alma Rd., Bournemouth.

N.S.U., 3½h.p., magneto; £20, or exchange hornless gramophone and £17.—Tynan, Berkin Manor, Horton, Slough.

DOUGLAS, 1911, Model E, new condition, all accessories, spares; £39.—"Auchencairn," Worcester St., Gloucester.

1910 Douglas, in excellent condition, new tyres; accept £24; any trial.—John Webber, Cranford rise, Maidenhead.

1912 3½h.p. Lincoln Elk, free engine clutch, £36/10; 6h.p. N.S.U., as new, £44.—Mullett, St. Mary's Rd., Southampton.

IMMEDIATE Deliveries.—Write, Gibb, Gough and Son, Gloucester. Sole agents for Douglas, Bradbury, Premier, Rover.

2¾h.p. Douglas, 1911 model, absolutely unscratched, new belt, engine spares; £33.—C. W. Reynolds, The Lodge, Cosham, Hants.

TRIUMPH, 1910, thoroughly overhauled by makers, 1911 improvements; £33; going abroad.—Write, Young, Postal Staff, Bristol.

RUDGE and Bradbury Models, for prompt delivery; trial runs; exchanges entertained; send for lists.—Agent, Barnes, Colnbrook, Bucks.

F.N., 5-6h.p., 1911, 2-speed gear, heavy non-slipping Continental back, good lamp, all practically new; £43.—Garbutt, Churchdown, Cheltenham.

CLYNO Passenger Machines; earliest delivery for cash or easy payments; trial runs arranged at any time.—Morris Motor Cycle Garage, Oxford.

1912 Triumphs.—We can give very early delivery of all models for cash or easy payments.—Morris Motor Cycle Garage, Oxford.

1912 Enfields.—Immediate delivery of lightweight model; cash or easy payments; earliest possible delivery of Enfield passenger machine.—Morris Motor Cycle Garage, Oxford.

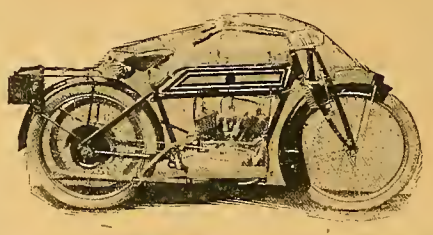
1911 Latest Model 7h.p. T.A.C., 3-speed, run only 600 miles, condition as new; cost £80 few months ago; £47 nett.—A. Ward, Home Farm, Ascot.

1909 Bradbury, new 1910, in good condition, 1911 cylinder piston, lamp horn, whistle; £27/10, close offer. West, White House, Binfield, Bracknell.

1907 3½h.p. Triumph, recently overhauled, h.b.c., and improvements, first-class order, including tyres; £23.—No. '9,333, *The Motor Cycle* Offices, Coventry.

3½h.p. Lightweight, outside flywheel, 28in. × 1¾in. tyres, low, vertical, spray, in thorough good running condition; £6/5.—Rudge, 22, Wellesley St., Gloucester.

3½h.p. Late 1909 Minerva, thorough good condition, little used, magneto, complete h.b.c.; £20, or nearest.—Gale, 2, Stanley Cottages, Chantry St., Andover.



NO MOTOR CYCLE IS BETTER THAN ITS ENGINE!

The 1912 REX-J.A.P. has the strongest frame; the best system of front and rear springing; large comfortable footboards; automatic and auxiliary hand-pump lubrication—*and in addition to these and many otherluxurious and exclusive devices,* the famous J.A.P. Engine, the

MOST EFFICIENT POWER UNIT

in the World.

The REX-J.A.P. will take you over hill and dale, through crowded traffic, and over greasy city streets, with the maximum of comfort and the minimum of trouble, and without the hands leaving the handlebars. Most hills can be taken on top gear, an immense saving in wear and tear to the machine, and a great increase in comfort to the driver. The 650 x 65 Dunlop Voiturette Driving Tyre and brazed-on lugs for sidecar will be appreciated by the motorist who sets *value before cheapness — no other motor cycle combines to such a degree the merits possessed by the REX-J.A.P.*

Write now for Catalogue, it will interest you.

TO DEALERS—The REX-J.A.P. Agency proposition is worth consideration—we invite your correspondence.

COLONIAL AGENTS—The REX-J.A.P. Colonial Models, with *Special Frame, Wheels, and increased ground clearance,* will interest you. We are now appointing Sole Agents, and shall be pleased to post you terms.

The Premier Motor Co., Ltd.,

Aston Road, Birmingham.

Telegrams: "Primus, Birmingham." Telephone: Central 1310.

MOTOR BICYCLES FOR SALE.

BRADBURY, 3½h.p., 1910, 2-speed, and sidecar (Premier), new tyres all wheels, new pulley, Whittle, spares, condition perfect; £42.—Armstrong, Ardmore, Farnborough.

1911 F.N., 2¾h.p., 2-speed, F.E., good as new, not ridden 200 miles, Rom tyre on back, spare tyre, lamp, horn; 35 guineas.—Easter and Sons, motor engineers, Swindon.

BRADBURY, 1912, very latest, standard, unable to complete purchase; cost £48; best cash offer nearest above for immediate delivery.—Box L5,668, *The Motor Cycle* Offices, 20, Tudor St., E.C.

3h.p. Humber M.C., low built, fast and powerful, £6; two 28×2in. rims, 1/- each; new back hub, 4/-; and some new 2¾h.p. automatic J.A.P. spares, cheap; 2¾h.p. Minerva wanted.—Knee, Referee, Melksham.

1911 Royal Enfield, 2¾h.p., 2-speed, free engine, twin-cyl., brand new last March; only 31 guineas, being £20 off original price; grand little machine; wonderful bargain.—Julian, Ironmonger, Basingstoke.

THE A.J.S. and B.S.A. Motor Cycles, early deliveries; Enfield, 2¾h.p., 1910, as new, £25; Triumph, 1908, good condition, £24; Quadrant, 5h.p., magneto, B. and B. carburetter, £13.—S. J. Fair, 201, Cheltenham Rd., Bristol.

2¾h.p. Hobart, engine re-bushed, machine overhauled, enamelled, 2 accumulators, h.b.c. ignition, throttle, equal in condition and appearance to a new machine; £15; deposit system.—Collyer, Winslow Rd., Great Horwood, Winslow, Bucks.

3½-4h.p. Minerva Motor, with forecar, 1911 B. and B., h.b.c., battery ignition, F.E., handle starting, front wheel of cycle never been used, engine just overhauled, and new piston fitted, 2 belts, splendid condition; £23 secures.—125, Manchester Rd., Swindon.

1912 Matchless Motors; early deliveries 6h.p. clutch model, 60 guineas; 1912 Hazlewood motors from stock, 3 speeds, free engine, 47 guineas; catalogues, particulars free; 1911 Rudge, July, 320 miles, as new, spare valves, tools, £40; 2¾h.p. accumulator motor, perfect, overhauled, £10/10, nearest.—Balfours, Motor Works, Banbury.

SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

WILTON Cycle Co., Victoria, S.W.

WILTON.—1911 Triumphs, as new, clutch models, with accessories, £45, £48; another, with sidecar, £50.

WILTON.—1911 Bradbury, 2-speed, with all accessories and sidecar; £50.

WILTON.—1911 Bradbury, standard, with accessories, and Chater-Lea sidecar; £43.

WILTON.—1911 Singer, clutch model, with Jones speedometer, lamp, etc., and Millford sidecar; £50, as new.

WILTON.—1911 Clyno, 2 months old; £55.

WILTON.—1911 Clyno, with special sidecar, and accessories; £65.

WILTON.—1911 Kerry-Abingdon, 2-speed gear, accessories, and Kerry sidecar, quick joints, and cane body, as new; £48.

WILTON.—1911 F.N., 5-6h.p., 4 cyls., with accessories; £40.

WILTON.—F.N.'s, 4h.p., 4 cyls.; £20 and £22 each.

WILTON.—1911 F.N., 2¾h.p., single-cyl., 2-speed gear, with all accessories, in fine order; £36.

WILTON.—1910 Kerry-Abingdon, 3½h.p., standard, overhauled, in very good condition; £28.

WILTON.—1910 Roc, 4h.p., 2-speed gear, spring forks, Bosch magneto, B. and B. carburetter, handle starting, and in splendid order; £27.

WILTON.—1911 Humber 2h.p. lightweight, splendid order; £27/10.

WILTON.—1911 Moto-Reve, 2¾h.p., brand new; £39.

WILTON.—6h.p. tricar, water-cooled, 2-speed gear, chain drive, magneto, etc.; £20.

WILTON.—Sole S.W. representatives for Clyno motors; deliveries February.

WILTON.—Sole S.W. representatives for Matchless motors; deliveries January and February.

WILTON.—Special agents for Bradburys, standard and 2-speed belt models in stock.

WILTON.—Early deliveries of Clyno, Matchless, and Wilton sidecars; lists free.

WILTON.—Exchanges and instalments arranged. Please write for forms.

WILTON Cycle Co., 110, Wilton Rd., Victoria, London, S.W. Tel.: 5115 Victoria.

2¾h.p. Bradbury new, speed model, 1911; £35.—67, Wellington St., Woolwich.

3½h.p. 1909 Triumph, in excellent condition; £32.—Barker, 34, Oxford Rd., Worthing.

MOTOR BICYCLES FOR SALE

QUADRANTS, Quadrants, Quadrants.

CASS'S Motor Mart, 5, Warren St., Euston Rd., W., sole agents for the famous Quadrant motor cycles; book at once for early delivery; catalogue and fullest information upon application.—Below.

DOUGLAS, 2¾h.p., 1911, 2-speed and clutch, in splendid condition, accessories; £40.—Below.

BRADBURY, 3½h.p., 1911, excellent order throughout, very little used; £39.—Below.

F.N., 5-6h.p., 1911, 4 cyls., new last May, tools, and accessories; £35.—Below.

MOTO-REVES, 2h.p., 1911, 36-guinea models, accessories, one brand new, the other slightly used; £25 and £22 respectively.—Below.

PREMIER, 3½h.p., 1911, new engine, machine in very good condition; £38.—Below.

V.S., 5h.p., speed model, in perfect condition, Mabon clutch, accessories, and spares; £26.—Below.

CASS'S Motor Mart, 5, Warren St., Euston Rd., W. (opposite Warren Street Tube Station). Tel.: 3624 Mayfair.

B.S.A. 1912 2-speed Models in stock.—Rivett, Leytonstone.

B.S.A. 1912 Free Engine Models in stock.—Rivett, Leytonstone.

B.S.A. 1912 Fixed Engine Models in stock.—Rivett, Leytonstone.

MOTOR Supplies.—Up-to-date stock at Rivett's, 236, High Rd., Leytonstone.

LATE 1910 Douglas, hardly soiled, little used, all spares; £27.—Brongwyn, Coopersale, Epping.

3¼h.p. Rex, very low, fast, and powerful; sacrifice £6/15.—Speechley, 45, Church Rd., Acton.

MOTOR Cycle, 6h.p. N.S.U., magneto; £25; good condition.—18, Calthorpe St., London, W.C.

F.N., 4-cyl., 4h.p., central intake, comfortable and reliable, £22/10.—145, Manor Rd., Brockley.

CROYDON.—1911 Douglas, model D, shop-soiled, only to make room for new models; what offers?

CROYDON.—1911 Handy Hobart, shop-soiled; what offers?

CROYDON.—3½h.p. Triumph, date 24/10/08, very good order; £28.

CROYDON late 1911 Enfield, 2 speeds, run about 300 miles; £33.—86 South End.

CROYDON.—1912 Enfields in stock; no waiting.—Call and see the agents, 86, South End, Croydon.

CROYDON.—1912 Hobarts, all models, immediate delivery.—Agents, 86, South End, Croydon.

CROYDON.—1912 Levis, 2-stroke; a trial run will convince; immediate delivery.—86, South End Croydon

CROYDON.—Send for lists of second-hand machines; exchanges entertained.—The Croydon Motor Mart, 86, South End, Croydon. Tel.: P.O. 797.

BARKERS, Kensington.—3½h.p. Triumph (1912 improvements), free engine model; £55; in stock.

BARKERS, Kensington.—3½h.p. Singer, free engine model; £55; in stock.

BARKERS, Kensington.—3½h.p. Premier, free engine model; £54/17; in stock.

BARKERS, Kensington.—3½h.p. Humber, free engine 2-speed gear; £52/10; in stock.

BARKERS, Kensington.—2h.p. Humber, lightweight; £37; in stock.

ANY of above by easy payments, 5% extra.—John Barker and Co., High St., Kensington.

LADY'S 2h.p. Singer, new July, Whittle; £28.—Miss Winton, High St., Haslemere, Surrey.

£6.—2¾h.p., low frame, 26in. tyres, all perfect; offers.—Leons, 89, Dalling Rd., Hammersmith.

TRIUMPH, 3h.p., magneto, in excellent condition; £19 cash.—5, Park Av., Palmer's Green.

1911 Rudge, clutch model, new condition; £45.—Rogers, 42, Church Rd., Hendon, N.W.

3½h.p. Calthorpe, 1911, T.T. model, brand new; £35, bargain.—Storey's, 337, Euston Rd., N.W.

REX, 3½h.p., fast, excellent condition, just overhauled; £8/10.—8, Avenue Rd., South Norwood.

TRIUMPH, 1910, perfect condition, spare belt, all tools; £32, lowest.—16, Dalebury Rd., Balham.

ZENITHS, Zeniths, Zeniths, 1912 models in stock; exchanges arranged.—Storeys, 337, Euston Rd., N.W.

ZENITH, 1912 models; immediate delivery; no waiting; trade supplied.—Rey, 5, Heath St., Hampstead

NEW 3½h.p. Motor Cycle, unridden; sacrifice £25; going away.—Curd, 71, Crescent Rd., Plumstead.

MOTOSACOCHE, 1¾h.p., splendid condition; £13/10.—Simpson, 12, Franklin Rd., Gillingham, Kent.

REX 5h.p. 1911 Twin, perfect condition; £33 for quick sale.—Garaged at 16, Haverstock Hill, London, N.W.

TRIUMPH, standard, 1908, fine condition, carefully used; £26/10.—Davvy, 82, Drayton Rd., Harlesden, N.W.

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73, New St., BIRMINGHAM.

Telephone: Central 7298.

MOTOR BICYCLES FOR SALE.

£9.—Ariel, 2½h.p., m.o.v., B.B., h.b.c., spring forks, new spare belt, low.—Seen at 739, Old Kent Rd., S.E.

B.S.A., ridden 1,475 miles, excellent condition, £40; also sidecar, £4.—Mears, 70, Belgrave Rd., Wanstead.

2½h.p. Jap-Triumph Lightweight, B. and B., h.b.c., new cylinder; £9.—176, Hainault Rd., Leytonstone.

1912 Free Engine Singer, fixed B.S.A., fixed Rover, in stock. — Walbro Engineering Co., Saffron Walden.

TRIUMPH, 1910 model, with sidecar; £37; tyres and belt almost new.—Matthews, pawnbroker, W. Croydon.

2¾h.p. Royal Enfield, Palmer tyres, new accumulators, suit tall rider; £12/10.—Rogers, 42, Church Rd., Hendon.

£3/10.—De Dion, 1¾h.p., wants little attention, tyres perfect; bargain.—35, St. Stephen's Rd., Bow, London.

PHELON and Moore, 1909, grand condition, with sidecar; £40, bargain.—Bike, c/o Universal, 44, Gray's Inn Rd.

NEW Hudsons, Triumphs, Bradburys; order now for early deliveries.—Godfrees, 124, Romford Rd., Stratford.

DOUGLAS, 1909, recently overhauled, new bushes, belt, perfect condition; £23; appointment.—Waters, Cranbrook.

TRIUMPH, 1907-8, 3½h.p., £3 just spent, Rom, Clincher, new Watawata; £25.—4, Gutter Lane, Cheapside.

MOTOSACOCHE, 1910, magneto, free engine, perfect condition, all accessories; £20.—3, Richmond St., Barnsbury.

N.S.U., 3h.p., magneto, free engine, perfect running order; bargain, £19/10.—73, Church St., Camberwell Green.

1909½ Triumph, with 1911 improvements, new Kempshall; £30 for quick sale.—C. J. Miller, Cranbrook, Kent.

N.S.U., 3½h.p., m.o.v., magneto, Gradua gear, pulley, h.b.c., beautiful order; £18/10.—68, Elmsleigh Rd., Wandsworth.

1¾h.p. Clement Lightweight, new tyre and belt, h.b.c.; £7/10, or higher power.—H.S., 33, St. Stephen's Rd., Bow, E.

HUMBER, 2-speed, 3½h.p., magneto, 1909, and new sidecar, perfect; £30.—Graham, 74, Park Hall Rd., East Finchley.

1911½ 5-6h.p. Rex, clutch, Service sidecar; £45, or sell separate; appointment.—E., 74, Walton Rd., East Molesey.

WANDSWORTH.—Humber, latest 1911, 3½h.p., m.o.v., magneto, 2 speeds, Druids, hardly used; £38/10.—Below.

WANDSWORTH.—F.N., latest 1911 clutch model, 6h.p., magneto, drip feed, as new; £38/10.—Below.

WANDSWORTH. — Zenith-Gradua, latest 1911, 3¼-4h.p. m.o.v. J.A.P., magneto, engine like new; 38gns.—Below.

WANDSWORTH.—F.N., latest 1911 model, 6h.p., magneto, drip feed lubrication, like new; £35.—Below.

WANDSWORTH.—Brand new Chater-Lea Jap, 8h.p., m.o.v., magneto, No. 9 frame; great sacrifice, £45.—Below.

WANDSWORTH.—F.N., 1910 model, 6h.p., magneto, central intake, automatic carburetter, like new; 30gns.—Below.

WANDSWORTH.—V.S., 5-6h.p. twin, magnato, Truffault forks, guaranteed just as new, unscratched; £29/15.—Below.

WANDSWORTH.—Rex, 5-6h.p. twin, new Roc 2 speeds, magneto, Druids, extra good; £29.—Below.

WANDSWORTH.—Roc, 5-6h.p. twin Peugeot engine, magneto, 2 speeds, Show machine, guaranteed; 30gns.—Below.

WANDSWORTH.—Rex, 1909, 5-6h.p., magneto, perfect; £22/10; exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth Station.

3½h.p. Ariel, magneto, h.b.c., etc., £20; take accumulator machine as part.—Randall, 40, East Park, Crawley, Sussex.

BRADBURY, 1911, Mabon clutch, splendid condition, spares; £38.—Chapman, 109, Melrose Av., Wimbledon Park.

CLYNO in Stock, 2-speed; A.C. Sociable delivery March.—Stamford Hill Motor Co., 128, High Rd., South Tottenham.

4½h.p. Minerva Twin, Chater-Lea frame, fittings, and sidecar, spring forks, h.b.c., B. and B. carburetter, Palmers; £21.

ALSO 4h.p. Kelecom, h.b.c., new Palmer back; £9; or would exchange both above.—F. Gurney, Downs Farm, Pinner.

BRADBURY, 1911, absolutely as new, horn, lamp and generator; £36. — Avondale, Bective Rd., Putney.

MOTOR BICYCLES FOR SALE.

1911 T.T. Bat, as new; £42; winner "The Motor Cycle" Cup.—The Motor Cycle House, 69, Leather Lane, E.C.

F.N., 1¾h.p., magneto, spring forks and footrests, good order; £15.—Boyce, 23, Grand Parade, Archway Rd., Highgate.

BRADBURY, 1911, fitted with Lucas horn, and Whittle belt; £53, no offers.—Moss, 1, St. George's Mews, Primrose Hill.

2½h.p. Quadrant, nearly new tyres, B. and B., trembler and accumulator, in working order.—N., 57, Stafford Rd., Sidcup.

CHATER-LEA, 5-6h.p. twin, Bosch, splendid condition: will take £25 quick sale.—155, Goldhawk Rd., Shepherd's Bush.

TRIUMPH, 3½h.p., 1909, very little used, just fitted with Gradua gear; £35, bargain.—R. Marshall, High St., Clay Cross.

3½h.p. Triumph, 1910, in excellent condition, accessories, just overhauled, well fitted; £30.—Gold, Potters Bar, Middlesex.

TRIUMPH, 3 h.p., magneto, all in perfect order; accept £22/10 for quick sale. — Newnham, 223, Hammersmith Rd., W.

1910 Tourist Trophy Centaur, 3½h.p., good condition, magneto, Brown and Barlow; £30.—Bourn, 43, Queen's Rd., Beckenham.

2¾h.p. De Dion-Matchless, Chater frame, in good condition and running order; must sell; £12.—49, Griffin Rd., Plumstead.

PATTISON Bros., Montford Place, Kennington, S.E., for early deliveries of practically all 1912 models. Apply at once; don't delay.

1911 Rex, 3½h.p., fully equipped, condition as new throughout; £32.—W. A. Jacobs, 32, Glenloch Rd., Haverstock Hill, N.W.

NORTON, late 1911, C.A.V. carburetter, lamp, horn, and spares, as new, guaranteed; £35.—Ben-Hur, 69, Greenside Rd., Croydon.

3½h.p. Rex, Mahon, speedometer, accessories, Bosch, Whittle, b.b.c., tyres perfect; £25.—89, Sterndale Rd., West Kensington.

1912 3½h.p. Free Engine Triumph; unable to take delivery end January; highest offers.—Motor, 24, St. Asaph Rd., Brockley, S.E.

3½h.p. Rex, 1907, Druids, B. and B., good tyres, sidecar, £14; 3h.p. Kerry, low, perfect, £8.—Chauffeur, Pickwell, Balney, Sussex.

TAKEN for Debt, 5h.p. tricar, £12; 3½h.p. Rex and sidecar, £12; or £22 the lot.—Bricklayers' Arms, Kender St., New Cross, London.

1910 Douglas, new Ram and Kempshall tyres, new Dunlop belt, spare valve, accessories; £22, quick sale.—33, Killyon Rd., Clapham.

PEUGEOT, 5-5h.p. twin, h.b.c., torpedo tanks, Chater-Lea carrier and low platforms.—W. Goldsmith, 29, St. George's Rd., Wimbledon.

£15—3½h.p. Ascot, magneto, tyres nearly new, low, very fast condition guaranteed. — 43a, Little Cadogan Place, Sloane St., S.W.

BROWN, 3½h.p., 1908, just been thoroughly overhauled in our works; £11, a bargain. — Soans, Dunn and Jones, Bromley, Kent.

QUADRANT Motor Cycle for sale, 3h.p., latest fittings, thorough running order; price £10.—17, St. John's Church Rd., Folkestone.

3½h.p. Triumph, 6/7/07, splendid condition, 1911 improvements, spares, accessories; £22. — W., Chagford House, West Kensington.

3¼h.p. Birchfield, Mahon clutch, Palmer and Continental tyres, Watawata, in perfect condition; £10 or offer.—97, Malvern Rd., Kilburn.

2¼h.p. Premier, 1912 model, done 100 miles, light weight, complete; seen and trial; £34.—28, Frant Rd., Thornton Heath, Surrey.

4h.p. Jap-Chater-Lea, magneto, Rae gear, and reinforced sidecar, complete, tyres as new.—H.P., Boot Series, High St., Shipcourt, Kent.

1911 Bradbury, standard (June), perfect; seen any time; £35, offer.—Stephens, High St., Woodford Green, Essex. 'Phone: Woodford 169.

BAT, 3½h.p., spring frame and forks, h.b.c., dry battery, good tyres, good condition, relinble; £10/10.—45a, Isis St., Barlefield, S.W.

3½h.p. Humber, 1911, 2-speed gear, free engine, all accessories, only done 100 miles.—Eaton and Co., 14, Cavendish Terrace, E. Finchley. £43.

2¼h.p. Minerva, low frame, new back studded tyre, just been thoroughly overhauled; £7/15, offers.—12, Loughboro' Rd., White Horse, Brixton.

3¼h.p. Pengeot, T.T. model, absolutely new; purchaser cannot take delivery: £48 machine, take £42.—Wells, 15, Elfreda Parade, Woodford Green.

P. and M., 3½h.p., for sale, bought 24th August, 1911, perfect condition; first cheque for £50 secures; seen any time.—Jewell, 245, Gray's Inn Rd.

2¾h.p. Motor Cycle, J.A.P. engine, Chater-Lea fittings, Bowden h.b.c., magneto, good order; £14, or near offer.—McLennan, 20, Studdridge St., Fulham.

Verbum Sat Sapienti

and to those men I appeal this week. No doubt many of you read the startling announcement made by a competitor last week. He accuses his fellow traders of offering ridiculous prices for second-hand machines, and after deluding **the unfortunate motor cyclist** into sending his machine along, he tries to **"do him in"** by **instead of allowing him the price he quoted him, he doubles it, and gives him twice as much as he agreed to allow him.** I am afraid if there is such a man in Great Britain we ought to get up a testimonial and present it to him. **"He is too honest."** I want to impress on any intending purchaser of a new motor cycle, and who has already a **second-hand motor cycle** that he is desirous of exchanging, that he should get in touch with me. **I will quote a price that I can, and will, allow him for same** if the machine is exactly as described. **You can't get anything fairer than this.** I am gradually building up what promises to be the largest motor cycle business in the country, and, by employing honest methods, I hope to achieve my object. Send to me for the name of my nearest client to you, and I will stand or fall by his report. Ask him how I did business with him, and I am sure you will then come to me. My delivery dates can be relied upon. If I say I can give delivery of, say, a Clyno on the 1st day of February, **I can do.** The same remarks apply to any of the following makes: Singer, Rudge, Rover, B.S.A., Douglas, Enfield, Premier, Bradbury, and New Hudson. I can almost deliver all these makes from stock. Now, hurry up, boys; try me with your next order. You will be delighted with the way I treat you. Everybody knows Cordingley, the man with a thirty years' connection with the cycle and motor cycle trade. My list is worth your perusal.

1912 models actually in stock awaiting your cheque and instructions.

	List price.
RUDGE, 3½ h.p., free engine model, pedal engine starter	£58 0
RUDGE, T.T. model, special	£48 15
BRADBURY, 3½ h.p., 2-speed	£58 0
NEW HUDSON, 3½ h.p., 3-speed gear	£59 17
PREMIER, 3½ h.p., 3-speed gear	£58 0
CLYNO, 5-6 h.p., the sidecar machine	£68 0
ENFIELD, 6 h.p., 2-speed, with sidecar	£84 0
DOUGLAS 2¾ h.p., the perfect lightweight, free engine, 2-speed, kick starter	£50 0
NEW HUDSON, 2¾ h.p., 3-speed model	£49 7
PREMIER, 2¼ h.p.	£36 0
ROVER, 3½ h.p., free-engine model	£58 5
B.S.A., 3½ h.p., free engine, model B	£56 10
SINGER, 4 h.p., 2-speed bracket gear, fitted with sidecar; list price £65, sidecar extra.	
B.S.A., 4½ h.p., 2-speed and free engine	£60 0
BRADBURY, 3½ h.p., with free engine	£54 10
PREMIER Twin-cylinder, with 2-speed	£63 0
NEW HUDSON, 3½ h.p., model 11h, 3-speed	£63 0
ENFIELD, 2¾ h.p., handle-starting, 2 speeds, free engine, footboards	£52 10

The only 1911 model left:

BRADBURY, 3½ h.p., standard model, just from works; list £48. Clear, best offer.	

HIGH-CLASS SECOND-HAND MOTOR CYCLES.

1910 3½ h.p. **TRIUMPH,** perfect	£38 0
1911 3½ h.p. **BRADBURY,** T.T. model, a gift	£32 0
1911 3½ h.p. **IVY-PRECISION,** just as new	£33 0
1911 3½ h.p. **RUDGE,** splendid order	£36 0
1910 **SCOTT,** new tyres, B.E. tubes, good order	£35 0
1909 **VINDEC SPECIAL,** two speeds, magneto, complete with sidecar	£29 0
1909 3½ h.p. **MINERVA,** magneto	£17 0
1911 7 h.p. **SPEED KING KEX,** as new	£38 0
MOTOSACOCHE, 1¼ h.p., 1910, free engine model	£21 0
1908 **QUADRANT,** 3½ h.p., Bosch magneto, h.b. control, spring forks	£18 0

TRICAR.

PHŒNIX, 3½ h.p., two speeds, free engine, handle starting, coach-built chair, lamp, horn, tools, etc. Clear for £10 10s. Special.

Every Motor Cyclist should have OUR Sidecar List.

STANDARD, £4 10s. SPECIAL, £5 5s.
DE LUXE, £6 6s.

CANOELET, DUNKLEY, MILLFORD, etc., supplied to order promptly.

I am Sole District Agent for—

RUDGE, BRADBURY, CLYNO, ENFIELD, PREMIER, ROVER, B.S.A., DOUGLAS, NEW HUDSON, and **SINGER.**

200 1912 MODELS FOR GUARANTEED DELIVERIES.

OUR SPECIALITY, "EXCHANGES"

Get my List before you decide. Buy from the firm with a Thirty Years' Untarnished Reputation. Call and see **our** Stock.

J. S. CORDINGLEY,
The Motor Cycle Mart,
HASLINGDEN, Lancs.

Wires: "Cordingley, Haslingden." 'Phone: 2Y, Haslingden.

MOTOR BICYCLES FOR SALE.

EAGLES.—F.N., 4-cyl., 5-6h.p., 1911 model, as new, latest improvements, automatic carburetter, drip lubrication; £38; exchange lower power.

EAGLES.—Triumph, 1910, free engine model, had little use, equal to new; £39/10.

EAGLES.—N.S.U., 3½h.p. model de luxe, 1910, Bosch magneto, 2 speeds, free engine, only ran 1,500 miles, speedometer, etc.; £34/10.

EAGLES.—Douglas twin, 2¾h.p., late 1910, Rom tyres, Brooks padded saddle, fine condition; £25.

EAGLES.—N.S.U., 3½h.p., magneto, dropped frame, 1911 B. and B. carburetter, perfect condition; £18/10.

EAGLES.—Motosacoche lightweight, Hellesen ignition, Whittle belt, fine condition; bargain, £9/15.

EAGLES.—Rex, 3½h.p., magneto, dropped frame, spring forks, 1911 B. and B. carburetter; £18/10.

EAGLES and Co., High St., Acton.—N.S.U. West London district agency. Early delivery of 1912 models; liberal allowances for machines in part payment. Tel.: 556 Chiswick.

MOTOSACOCHE, 1¼h.p. free engine, h.b.c., very good condition, complete, like new; £14/10.—1, Addison Bridge Place, Kensington. Tel.: 5215 Western.

BAT, 1911, T.T. twin, special machine, just been re-enamelled black, a flier, and in perfect condition; £45 lowest.—66, Carlton Mansions, Maida Vale.

TRIUMPH, 1912, free engine, new light wicker sidecar, canoe front, apron, stand; immediate delivery; £62; no offers.—94, Gloucester Rd., S.W.

WRENCH'S Motor Cycle Department, 120, Hampstead Rd., agents for all best makes; exchanges a speciality. Get our quotation. Tel.: North 3541.

SINGERS, 1912, free engine and lightweight models in stock.—Wrench's, 120, Hampstead Rd. Cash, gradual, or exchanges.

BRADBURY, free engine, 1912 model; immediate delivery, complete with lamp, horn; 50 guineas.—Wrench's, 120, Hampstead Rd.

WRENCH'S have a good selection of second-hand motor cycles; list on application.—120, Hampstead Rd.

REX 3½h.p. Tourist, as new, 1911 model; open to reasonable offers.—Wrench's, 120, Hampstead Rd.

2½h.p. Kerry Lightweight, magneto, Brown-Barlow carburetter, b.b.c., low, excellent condition throughout; £12/10.—Seen at 92, Brownhill Rd., Catford.

MAGNETO, 3h.p. N.S.U., tyres nearly new, m.o.v., h.b.c., spring forks, carrier, stand, splendid order; bargain, £12/10.—61, Grand Parade, Harringay, N.

1912 3½h.p. L.M.C., variable gear pulley free engine, new, unridden; exchange good combination, or sell £45.—Box 9,289, *The Motor Cycle* Offices, Coventry.

LOOK.—1911 3½h.p. Lincoln Elk, equals new, guaranteed; £23/10; motor cycle part wanted, combination, cheap, cash.—Seahaven, Sea Rd., Felpham, Bognor.

DOUGLAS, 2¾h.p., late 1909, splendid condition, all accessories; £21; would entertain exchange good sidecar combination.—Shillaw, 37, Atherton Rd., Forest Gate.

BRADBURY 1912 models, Douglas 1912 models, Triumph 1912 models, Premier 1912 models; deliveries now from stock. — Walker's, Motor Depot, Harwich.

WALKER'S Bargain List.—Douglas, 1911, 2-speed free engine, ridden only 800 miles, perfect, £35; Moto-Reve, twin, 1910, as new, ridden only 600 miles, £24; Moto-Reve, twin, 1909, a fine beauty, perfect, £18; Rex, 3½h.p., 1910, 2 speeds, free engine, grand condition, £26; Rex, 5h.p., twin, 1910, powerful, fast, grand condition, £25; several other reliable machines from £7; write for details, all guaranteed bargains; offers and exchanges entertained. — Walker's, Motor Depot, Harwich.

3h.p. Peugeot, Roote and Clarke's, 2-speed gear and free engine, chain drive, Palmer cord tyres, good running order; £10.—W. Elco, Brentwood Rd., Romford.

3½h.p. Kerry, Bosch magneto, B. and B. carburetter, mechanical overhead inlet, Clyno pulley, sound everywhere; £14.—Brown, 14, Pix Rd., Letchworth, Herts.

REX de Luxe, 5h.p., 1909, 2-speed, magneto, Whittle, Amac, footboards, usual Rex fittings; seen by appointment; £30.—Maw, 18, Addison Rd., Kensington, London.

MOTOSACOCHE, perfect condition, Palmer tyres, pulley, belt, and accumulator, all new; bargain, £14; will take cycle part.—Gasson, draper, Hurst Green, Sussex.

TRIUMPH, 1909, hardly used, lamp, horn, tools, spares, spring seat pillar, heavy Kempshall back, new Lycs; reasonable offers.—155, Brockley Rd., Brockley.

REX Motor Cycle, in running order, accumulator, Palmer tyres, new B. and B. carburetter, footrests; can be seen at 41, Market St., Watford; £15.—Baughan, Watford.

2h.p. Motor Cycle, vertical engine, Longuemare carburetter, long handle, Moseley tyres, splendid condition; £6.—Murray, 37a, Charles St., Hatton Garden, Holborn.

In answering these advertisements it is desirable to mention "The Motor Cycle."

THE MOTOR CYCLE

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Subscription Rates: Home, 6s. 6d.; Canada, 8s. 8d.; Foreign, 13s. per annum.

Agents for Australia: Gordon and Gotch, London, Melbourne, Sydney, Brisbane, Perth, Hobart, Launceston, Wellington, Christchurch, Auckland, etc. South Africa: Central Newsagency, Ltd.

ADDRESS: 20, TUDOR STREET, LONDON, E.C.

A Warning Note.

IN our remarks about the T.T. Race which appeared in a recent issue we expressed the hope that, wherever the race might be held, participants, their helpers, and spectators, will be merry and wise, and let their "hosts" see that they can be happy and enthusiastic without giving way to any objectionable hilarity. We are well aware we are treading on delicate ground, but the time has arrived when immediate steps should be taken to eradicate a certain discordant note which is now being heard at all gatherings, which certain members of the motor cycle community attend. Shouting, singing, and interruptions during speeches and musical entertainments are not conducive to the good reputation the movement should bear, while the same conduct at meal times in hotels during the progress of competitions has an even worse effect.

It is obvious that only a very few, whose enthusiasm gets the better of their discretion, offend in this manner, but the nuisance has reached such a stage that all who have the good name of the motor cycle pastime at heart should take immediate steps for its suppression.

The kind of behaviour we have had most reluctantly to refer to is, besides being harmful to the pastime, discourteous to ladies who may be present, and brings those responsible for the proper conduct of the event into discredit.

The remedy is in the hands both of the organisers of any event at which the behaviour occurs, and of other people who know how to behave, but do not express their disapproval in a tangible manner. A drastic remedy would be ejection of the offenders from the meeting and suspension from so many club competitions during the year, and if the offenders persisted after that in disturbing their fellow members summary ejection from the club should be the punishment. We regret extremely that we should feel compelled to refer to this matter, but something ought to be done to prevent repetition of such conduct or the motor cycle movement is bound to suffer in prestige.

This Year's Competitions.

THE long list of fixtures already published does not represent all the competitions which will be held this year, but it represents the greater number. The A.C.U. Six Days' Trials and the Tourist Trophy Race shine conspicuously among the open events. The fate of the latter is somewhat obscure at present, but it will undoubtedly be held. The rules for the Six Days' require careful consideration, as last year's were certainly somewhat elastic, and there is no doubt that the speed between controls will have to be reduced. There is, however, one insuperable difficulty, and that is that it is impossible to observe a motor bicycle properly. All one can do is to give a man a schedule and bid him keep to it, assuming that if he is late it is the fault of his machine. With regard to the important question of silencers, we would suggest that it is no use sealing all cut-outs and then discovering that a machine not fitted with one of these devices is more noisy than if it were, because either it has no silencer or the one it possesses is, as regards noise, worse than if the cut-out were open. A glance at this year's fixture list is interesting and instructive. Every sort of competition is included, there is plenty of variety, and a sufficient number to satisfy an enthusiastic motor cycle public.

ENGINE POSITION.

INCLINED VERSUS VERTICAL ENGINES.

FOR dealing with a subject upon which small prejudice exists—upon which opinions do not differ fiercely—the writer craves indulgence. Readers may be reminded that the small beginnings of such a great movement as the coming of the motor cycle are quickly and easily forgotten—that the initial causes leading to the general adoption of this or that particular feature, though trivial in themselves, have far-reaching effects. Thus in the early days, motor bicycles with inclined engines were far more numerous proportionally than they are to-day, but in the thousand miles trials of 1903 all the highest awards were carried off by the vertically engined machines which were then in a minority. Their numerous but unsuccessful rivals suffered from many defects which may be broadly summarised by the statement that they were adaptations of the ordinary or "push" type of bicycle with engine, tanks, etc., attached somehow, somewhere! Their rivals, on the other hand, contained the germs of modern practice, the tendency of which is to design the machine throughout as a motor vehicle and not as a compromise. Fig. 1 will serve to recall some of these antique models, in which the power plant was often attached to the front down tube of the frame by flimsy and inadequate clips appearing to have been added as an afterthought. Modern examples of machines with inclined engines, though few, are extremely successful. They differ immensely from their early prototypes, and their success lies in the fact that both engine and machine are admirably adapted to each other, and combine together to fulfil their purpose.

Rise of the Vertical Engine.

Now it is more than probable that the results of the trials of 1903 gave a very serious set back to any and every form of construction involving an inclined engine, and a corresponding fillip to the type which has now become almost standard. There is, however, no magic in the principle of the vertical engine, and had both types been equally well designed in the beginning the standard machine of to-day with single-cylinder vertical engine, diamond frame, and horizontal tank would not now be with us in its thousands. This contention is borne out by the fact that two of the most successful machines of the present day not only have their engines inclined, but, with other features radically different from the standard type, are able to command higher prices than some of their rivals. So much for the commercial argument. The writer is well aware that events now almost forgotten have guided the course of design into certain grooves in which it is now inclined to stagnate. Therefore the object of this article is to point out generally the desirability of extricating ourselves from these grooves, and particularly the very real advantages which belong to an inclined engine position. In the case of a single-cylinder engine or twin with cylinders side by side, as may be seen from fig. 2, the cylinder head projects well forward and so catches the first rush of cooling air; the exhaust gases may be led away without a bend in the pipe near the cylinder where their temperature and pressure are high. Speaking more generally, the position lends itself to a great variety of frame designs, and in particular to the open frame, which opens up a new field by adding the motor bicycle as an additional weapon to the armoury of the fair sex.

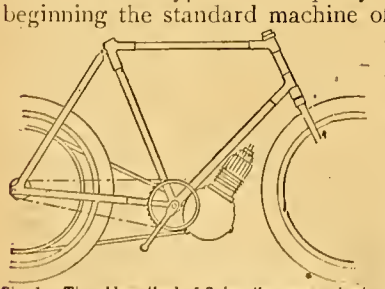


Fig. 1. The old method of fixing the power plant

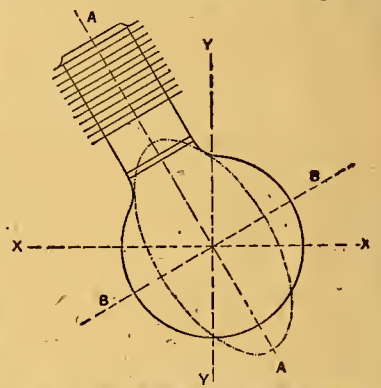


Fig. 2. Position for single or twin cylinder (side by side) engines.

It is easy to allow plenty of head room to the engine and to arrange a most satisfactory water-cooling system on the thermo-syphon principle, since the top of the cylinder is lower down and further forward, so that a tank can be arranged giving a good head of water over the combustion chamber. Fig. 3 shows a frame designed to take an inclined engine, and it will be noticed that the structure has no strength without the engine. A simple rear springing device, which is intended to allow about an inch of movement to the back wheel, is also shown. The attachment of the engine can and should be such as to form an integral and essential part of the frame without which the structure would collapse. In my opinion, a machine with frame and engine built up in this way makes a job which is stronger, more rigid, and freer from vibration than is the conventional design. On this question of vibration some nice points arise, though to deal thoroughly with them is not within the scope of this article.

Methods of Balancing Motor Cycle Engines.

Referring to fig. 2, the usual method of balancing or attempting to balance a single-cylinder motor cycle engine is to thicken the flywheel rims as shown, thus adding a certain mass, the centre of gravity of which is opposite to the crank pin centre. Practice varies from the balancing of the rotating parts only, that is to say the crank pin and big end, to the balancing of the whole of the reciprocating parts. The latter extreme is bad, and the best practice is to be found near the former, the piston being kept as light as

Engine Position.—

possible. Now in the case of the vertical engine, in which such a mass has been added to the flywheels as to balance the rotating and part of the reciprocating parts, the rotating parts alone will be overbalanced, and consequently there will be an unbalanced force X acting along the line X X; incline the engine and it acts along B B. Let us see what happens in the case of the inclined engine. Neglecting secondary forces, that is to say, assuming simple harmonic motion for the piston, which assumption is only justified when the connecting rod is extremely long, we have, considering the forces acting in any position of the system—(1) a force due to the acceleration of the piston acting along A A. (2) A force due to the centripetal acceleration of the excess of M over the rotating parts M', the resolved component of which along A A partially balances the force due to the reciprocating parts.

Finally we have the resolved component of 2 along B B.

Now on the above assumption the force along A A reaches a maximum at each end of the stroke (passing through zero at the middle of the stroke). The force along B B reaches its maxima when that along A A is zero and *vice versa*, *i.e.*, at intervals of 90°. It will therefore readily be seen that by plotting the

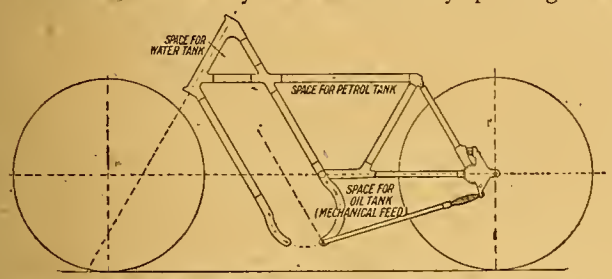


Fig. 3. A frame for inclined engines. It will be noticed that without the engine the structure has not much strength.

resultant force throughout a complete revolution we get an ellipse which becomes a circle when the maxima along A A are equal to those along B B, that is to say, when the factor due to overbalanced rotating mass is just equal to that due to underbalanced reciprocating mass, or, in other words, taking an arbitrary case in which the rotating and reciprocating parts are of exactly equal mass, M will be 1.5 times this mass.

The chief point which arises from the above argument is this, that in the case in which the ellipse becomes a circle, the inclination of the engine makes no difference whatever. Usually A A will be the major axis, in which case the inclined engine will have a slight advantage, since a resultant force in this direction is likely to be rather less objectionable than a vertical vibration, and it has already been said that to increase the balance mass M so as to make B B the major axis is bad practice in any case. In the case of the vertical engine the resulting horizontal vibrations might be expected to have a direct effect on tyre wear, and, in the case of the inclined engine, the vibration along B B might affect the rider.

These theoretical considerations, however, do not cover the whole question of balance. Much depends upon the attachment of the engine and the rigidity or otherwise of the frame, and in these respects the inclined engine offers possibilities of superiority.

Distribution of Weight.

The ground clearance and the wheelbase of the machine may without freakish design be as great or as small as is desired, whereas the former in the case of the vertical engine is strictly limited by the height of the cylinder and the depth of the frame. Finally the centre of gravity of the whole machine is further forward; the combined weight of machine and rider and luggage more rationally distributed between the two wheels, with the result that the machine holds the road and does not skid. This is a most important point, and is amply borne out by experience. It is an undoubted fact that the standard type of machine when fully laden carries too much weight on the back wheel and too little on the front. Tyres therefore should wear more evenly on the inclined type for this reason and on account of the horizontal vibrations dealt with above, which are an essential, though not very noticeable, feature of vertically-engined machines. In this connection the comment made on the Scott machines in the Isle of Man is interesting. It was said that they stuck to the road like postage stamps. The comparison is not altogether apt, because these vehicles cannot be compared with anything so "*stationary*" as stamps. Another instance—the Holyhead road between Corwen and Cerrig-y-Druidion is often spread with white, delicious butter. Faring along there one day with a companion mounted on a well-known chain-driven machine with inclined engine, the writer on a standard belt-driven single, both with luggage, we made a progress slow and full of thrills. He (the writer) brought up the rear at a steady speed, and was thus able to notice his companion's tracks, and that the regular impulses of the latter's single-cylinder engine were each distinctly marked on the road. Yet he did not skid, the steadiness of the machine, due to a better distribution of weight, more than counterbalancing the effect of a comparatively harsh chain drive.

Lubrication.

It is interesting to notice that every V twin is essentially an inclined engine, and the persistent success of this type is very significant. Now in the case of the V twin, the oil which is being swept round by the flywheels finds its way first to the rear cylinder, and then any that is left over, so to speak, passes on to the front cylinder. It is a misconception to regard the conditions of lubrication in a single-cylinder engine inclined forward as similar to those in the front cylinder of a V twin, because there is no rear cylinder for the oil to pass into. Just as much oil will leave the crank case and pass into a cylinder inclined at any angle as into a vertical cylinder, or slightly more, including the small effect of gravity.

It may well be asked why, with so many advantages, machines with inclined engines are not more numerous. The answer is, as suggested at the beginning of this article, that the standard type of to-day has become the fashion through a series of trivial and long-forgotten accidents.

Finally, to sum up, the most important advantages claimed are these: (1.) Better cooling. (2.) Freer exhaust. (3.) Adaptability to open frame, water cooling, etc. (4.) Strength, rigidity, and balance. (5.) Distribution of weight. (6.) Lubrication. B.S.

Occasional Comment

By Lyon

An Interesting Development.

The success of three-speed hubs is having wide effects, and I hear that several leading firms who hoped to meet the demand for variable gears by offering two-speed counter-shaft gears are revising their plans for 1913. One firm in particular are great sticklers for a simple and accessible back wheel, and they are experimenting with a light and compact three-speed counter-shaft gear. We old-timers, who have pushed variable gears against all the inertia of indifference and ridicule for so many years, are taking fresh heart of grace. It looks as if two-speed gears might be out of date in a year or two, when multi-speed gears begin to figure in every catalogue.

Waterproofs.

During the last ten years I have sampled practically every well-known brand of rubber-proofed garments on the market, both cheap and costly, and my experience is that a genuinely drencher-proof set are very expensive to buy, retain their quality for a comparatively short period, and are excessively steamy and ill ventilated in use. Within the last three years I have owned two sets which I could absolutely trust to keep out the heaviest downpour for a day at a time. But their cost was prohibitive when I took into account the dangers of ripping them in use, and I had to replace both before they became porous. In addition the slightest labour in the way of starting the machine or wheeling it about threw me into a very heavy perspiration, and I must say that I am a convinced "oily" man to-day. If somebody would invent an untearable rubberproof, I would recant, but until that happens I shall continue to pose as a sea dog.

Spring Saddle-pillars.

Will makers of rigid frames and springless saddle-pillars kindly notice that spring pillars are being adopted on many of the latest models in the United States? The sickening jar up the spine, communicated to the rider by bumping over a hump with a rigid rear frame, is the only feature about the motor bicycle which is likely to affect the health of the most delicate person, and it is high time steps were taken to insulate us from it.

The function of a saddle is to fit our anatomy comfortably, therefore the insulation from road jars might well be transferred to another portion of the machine, where there is lots of room to experiment with springs of greater length and elasticity than those which can be fitted to saddles. It is hardly fair to expect our saddle makers to provide perfect insulation in the small amount of space at their disposal, and good as some of our saddles are, they would be vastly improved by the more general adoption of spring saddle-pillars.

Shaft Drive and Seized Engine.

I doubt whether correspondents are quite fair in accusing the chain of being quite as dangerous as a shaft in the event of a seized or jammed engine. If the engine ceases to revolve it is practically impossible for a shaft to free itself, at least it has been so in every actual case that has ever come under my notice. The chain may easily fail to free itself under similar circumstances, but I have known of many cases where the chain has freed itself. In some instances it has snapped under the sudden strain; in others the sudden check has caused it to mount the sprockets and fall harmlessly off, thus giving the rider a chance to maintain equilibrium.

I repeat that the great merits of the shaft drive lie in the ease with which it may be encased, and the handsome appearance of a machine thus equipped. The introduction of a reasonably smooth acting clutch should usually allow the road wheel partly to over-run in the event of engine seizure, but even with a tight belt it is not a nice experience to find the engine suddenly at a standstill and the rear wheel skidding along in an endeavour to unseat the rider.

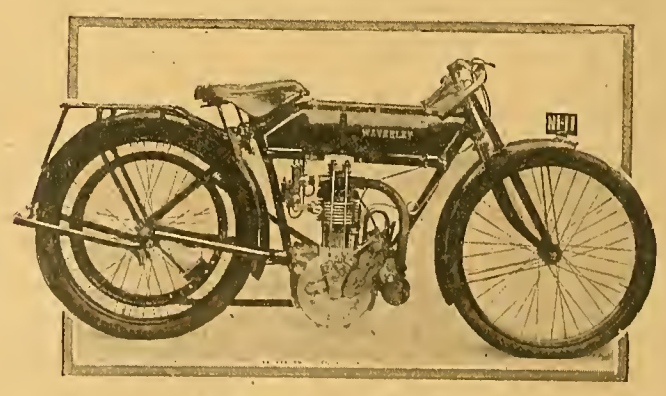
The Tourist Trophy in America.

I hope our expert riders, leading designers, and manufacturers will not forget that the Tourist Trophy graced the Indian stand at the New York Show in Madison Square Garden, that it will also be again seen at the Chicago Show, and that they will spare no effort to bring the cup back in time for next Olympia.

With the exception of one or two leading makes the American industry still lags behind. Only four or five makes are equipped with variable gears, and most exhibits make a big talking point of the free engines which have long since been commonplaces on this side, while the samples shown do not compare favourably with our best clutches.

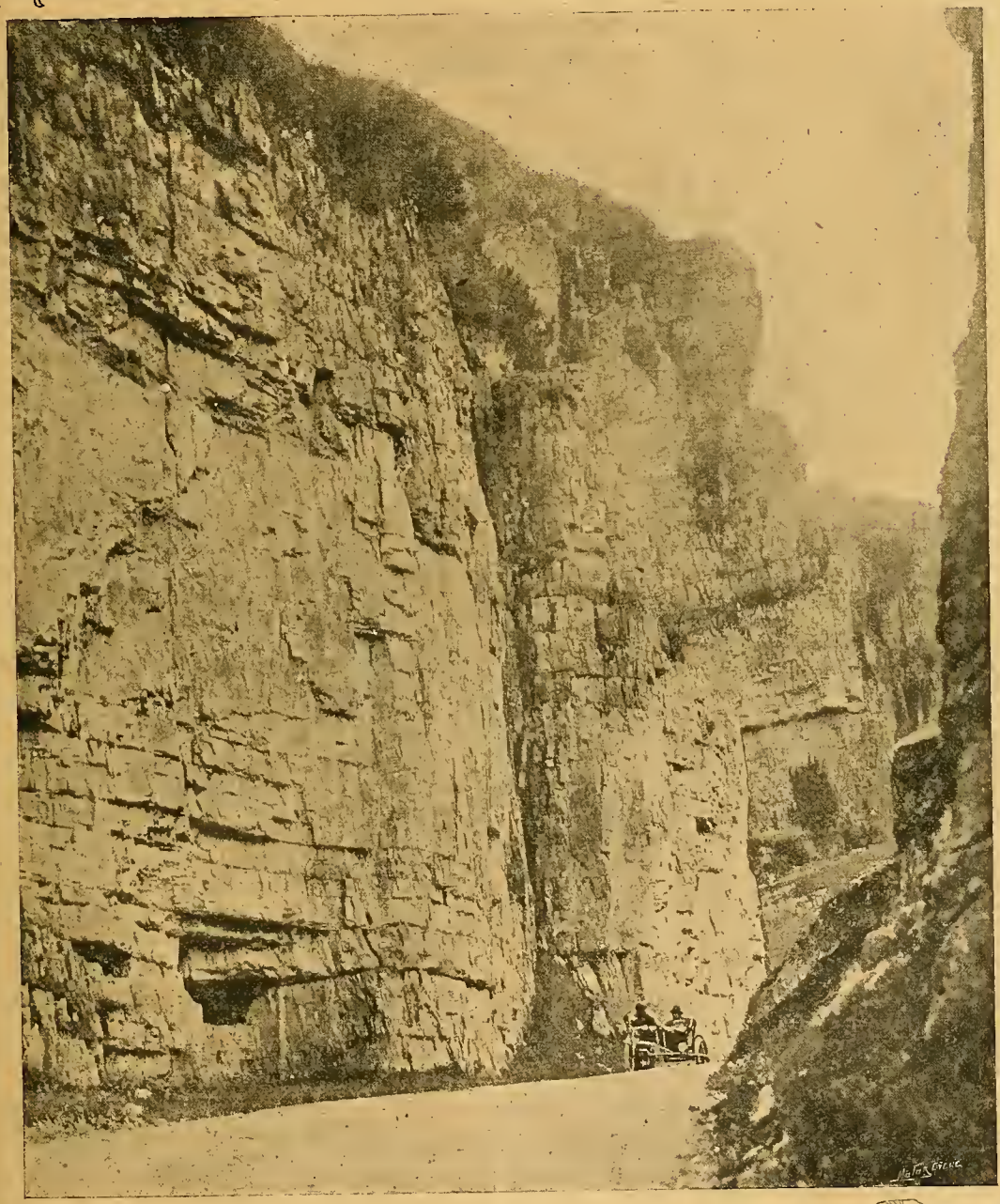
Surely the rough surfaces and badly engineered roads in the States must render variable gears a far more urgent necessity than they can ever be in Britain.

Judging from outline illustrations, some of the Yankee machines are not improving in beauty; many samples remind me of a rheumatic camel, laden with a travelling gipsy's impedimenta. The outlines are often crude, and many of the fittings are glued on with a sad lack of artistic perception.



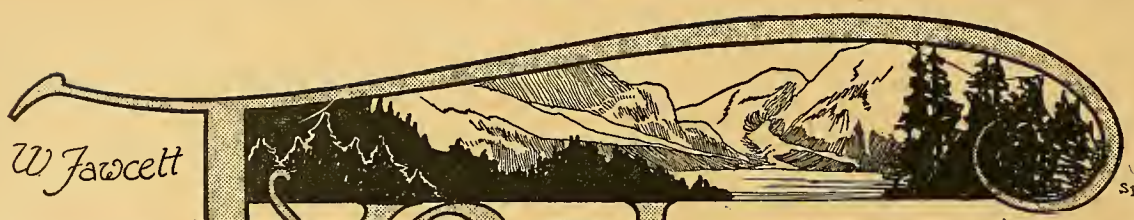
The above machine, ridden by T. Green, won the Rudge cup in the Dublin and District M.C.C. 100 miles open handicap race on Portmarnock strand. The engine is a Waverley, an American production, measuring 3⅜in. bore and stroke, and having overhead valves, auxiliary exhaust ports, and ball bearing crankshaft. The frame and fittings are by Chater-Lea.

Summer Memories



In Cheddar Gorge, Somersetshire.

SRJ



By W. Fawcett

TO THE TYROL AND BACK ON MOTOR CYCLES

(*Continued from page* 71.)

Next morning was beautifully clear and fine, so we set off in high spirits for the eagerly looked forward to Stelvio Pass, but we had not gone far before Grange had to stop to retime not only his ignition, but his valves as well, before he was satisfied.

On mounting a steep hill in a village, my Matchless pulled half a fastener to little bits, but we were soon on again, over dusty and bumpy roads, through Meran, the ancient capital of the Tyrol, and then Neu Sponding, after a run of about fifty miles. Being now at the foot of the Stelvio, we stopped to consult the map, etc.; also I lowered my gear to the very lowest possible (5¼ to 1), whilst Grange put his at 6 to 1.

The Famous Stelvio Pass.

A few remarks on the Stelvio Pass will perhaps give the reader a better idea of what was in front of us. It is the highest Alpine highway, and there is not even one in the Himalayas to rival it. The Austrian side is more difficult, as the gradient is steeper and there are more hairpin corners, whilst the altitude at the bottom is 2,940 feet above sea level, and I think I am right in saying that no British high road goes as high as this, not to mention *starts* there, whilst the top is just over 9,000 feet above sea level. There are therefore over 6,000 feet to climb in a distance of fifteen and a half miles, this giving an average gradient for the fifteen and a half miles of 1 in 13. This you may think is not steep, but with forty-six hairpin corners to negotiate it is rather difficult, and I may add that motor cyclists who have seen very little worse than the Sutton Bank corner, and the so-called "hairpin" from the foreshore to the town at Saltburn, simply do not know what a hairpin corner is. The road is not cleared of snow till the middle of June, and before then it is, of course, impassable for traffic.

But, to return to how we fared, I found the gradient easy at first, and had done about three and a half miles when I spotted the Bradbury propped up, but I saw no Billy, so I kept going, passing over the Trafoi-Bach three or four times by bridges that span this turbulent river. The gradient seemed to be getting steeper, so I opened the throttle a little more. I remember very little of the road till Trafoi was reached, which is about halfway up, and is a magnificently situated village with a palatial hotel. I was ambling along, gazing about me, when—"Great Scott!" too late, I found a hairpin to the right, and, as I was going about ten miles an hour, and almost every one of the forty-six hairpins cannot be ridden up at over six miles an hour, I soon came to a standstill; but, with a heave, I ran a few yards and was again climbing. Oh! those hairpins! The narrow shaves I had as I sneaked round one after another, till once more I came to one that again proved my undoing, so I put the bicycle on the stand and waited for the Bradbury. I could see very little of the road, as it was much hidden by pine trees, but I soon heard Billy coming, first slowly, then a roar, then "Bang! Bang!" several times repeated, as he gingerly took corner after corner; then he came to the one approaching the spot where I was resting. I could hear him shut off as he caught sight of it, then he appeared round the hairpin and opened out, but he was going too slowly, so finally stopped and placed his machine alongside mine, while we exchanged experiences about the corners. Again we set off. This time I was first, and round hairpins galore I wriggled till I was nearly dizzy. I espied a spring splashing merrily into a small wooden tub, and, although the bicycle was pulling well, I could not miss the chance, and dismounted to have a refreshing drink of the icy cold water. Grange soon came up, and did likewise, but, in addition, emptied the whole tub of water on to his engine—a proceeding I thought very silly, but, as luck would have it, the cylinder was not cracked.

With a now cold engine, the Bradbury set off again, whilst I soon followed, to be pulled up a mile or two on at a large hotel at Franzenshöhe, where, almost in the shade of the loftiest peak of the Tyrol, the magnificent Ortler (12,800 feet), and in sight of the Madatsch glacier, we went in for something wet and cold. This hotel makes a good resting place for the enormous numbers of walkers, etc., not forgetting a quantity of diligences with anything from two to six horses.

Grange again set off, and I followed. More hairpins and many breathless moments, in one of which I again ran into a gutter, and could not get under way again. There were only about four more corners to the top, so, with a cheery hail from my companion, I set off and soon reached the summit.

Winter and Summer in One Day.

We arranged to spend the night at the summit, and got rooms at the Hotel Ferdinandshöhe, the day's run being sixty-eight miles. The road up was in very good condition, and whilst at the bottom we were sweltering in the heat, we found there were huge banks of snow within a few feet of the hotel door, and this was the end of July!

The frontiers of Austria and Italy join at the summit, and the proximity of forts in the neighbourhood forbids any photography, but I got permission

To the Tyrol and Back on Motor Cycles.—

from the customs officers to take a photograph of the hotel and the said officers outside enjoying a meal.

I cannot describe the pass better than by saying that the corners almost beggar description, and the road is like a jumping cracker gone mad. The view, as is to be expected, is magnificent with the snow-clad Alps all round, and as evening wore on the sunset was a sight never to be forgotten, whilst in the distance intermittent flashes of lightning lit up the glistening peaks.

We each had five stops during the ascent, but we took things easily, and did not fag ourselves once. We were quite satisfied, taking all things into account.

Next morning, Wednesday, the 26th, after an early breakfast, I went into the custom officer's room, and was paid back without any trouble the £9 duty we had paid on our machines on July 21st. The £9 consisted of about fifteen notes that looked more like dirty red blotting paper than anything else.

We now began the descent, and soon came to St. Maria, where we presented our C.T.C. tickets at the Italian Customs House, and were given a permit, while seals were affixed to our machines without any trouble. I may here say that we had had our seals and huge number plates for Austria taken off at the summit as we left Austria.

The descent down the Italian side was great fun, for we now took the hairpins easily, and on one was a huge drift of snow, which Grange jumped on in exhilaration. We passed several score of carbineri with mules laden with what appeared to be Maxims, and went through a few tunnels, with the water dripping down our necks. At last we reached the bottom with our engines practically cold.

By a fairly straight but very dusty and hot road we had a fast run through Bormio, St. Antonio, Grosio, Tirano, Trescendo, and Sondrio, till I was pulled up with a nail in the back tyre.

Shortly afterwards, through Morbegno, we caught sight of beautiful Lake Como glistening in the sun. At Colico we were at the lake side and we had a glorious run of about twenty-five miles along Como, through Dervio, Bellano, to Lecco, where, on consulting our handbooks, we decided to put up at the Hotel di Croce Malto, at which we found the charges moderate. The day's run was 106 miles.

Lecco proved very disappointing, and we decided to spend the next day at Como. A frightfully dusty road, very bumpy through Erba, and then a few long climbs brought us to Como, where we put up at the excellent Hotel Volta.

A pleasant day was spent at Como in having a welcome dip in the lake, etc. In the evening we were crossing the Place Volta when we heard a motor bicycle knocking horribly, and, strolling across, we recognised a well-known British make, which shall be nameless. The owner, an Italian, was quite pleased at the interest we took in him and his machine, but my offer to bet him 100 lire to one centisimi that he could not do the 120 kilometres *à l'heure*, which he said he could do, brought only a smile.

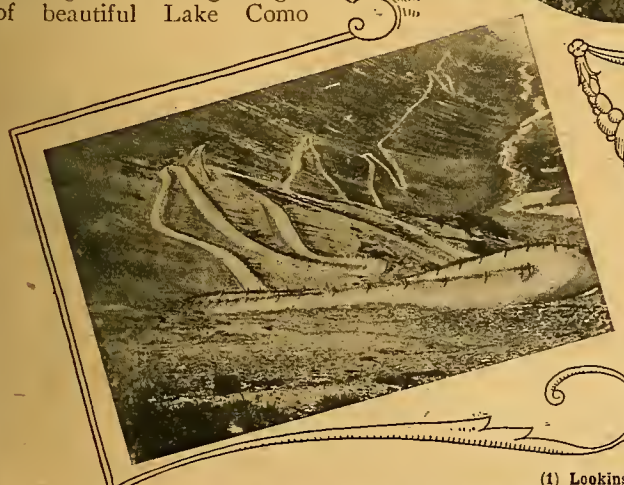
Next morning we set off, again on atrocious and dusty roads, through Varese, Gaviratè, to Laveno, where we decided to cross Lake Maggiore by boat to Pallanza, whence we continued our way. Near Gravellona are huge granite quarries, and the road was so awful we marvelled that we had broken nothing. Following the river Toce through Ornavasso, the mountains on each side gradually got nearer as if to hem us in, till we came to Domodossola, where we spent the night at the Hotel Terminus e Spagne, after a dusty and hot run of fifty-eight miles.

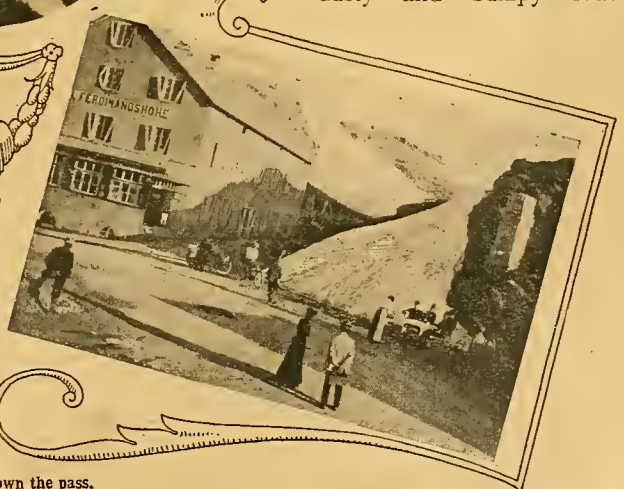
It was here that poor Chavez was killed after flying over the Alps, and there were grim mementos—picture postcards of the accident, etc.—that brought home to us the stupendous feat of that plucky aviator.

The following morning, Saturday, 29th, we left Domodossola and made our way by a frightfully dusty and bumpy road

THE STELVIO PASS, AUSTRIA.







(1) Looking down the pass.

(2) Something like hairpin corners! Nearing the top of the Stelvio, which is about 9,000 feet above the sea.

(3) At the summit. The customs officers may be seen to the right of the photograph. The snow in the background will be noted, also the hotel.

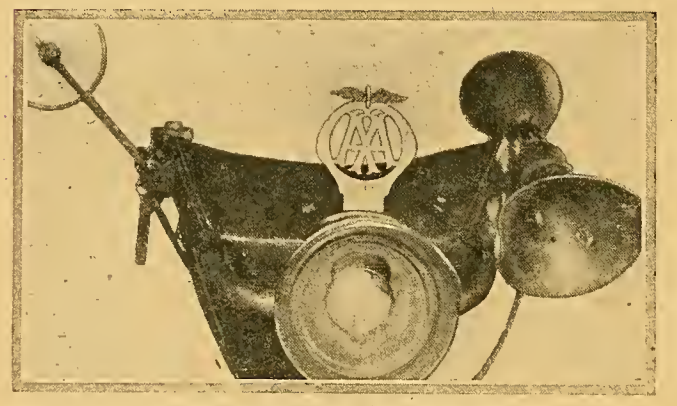
To the Tyrol and Back on Motor Cycles.—

towards the Simplon Pass. We had done about ten miles of undulating road with some very steep pitches, on lowered gears, when we came to Iselle, where the new Simplon railway tunnel ends with its yawning mouth close to the road. We could see a huge bank of snow now and again just off the road, and at Iselle we were stopped by the Italian Customs, where our seals were removed and our permit given up, as we were now leaving Italy. About six miles further on we again had to stop, this time at Gondo, where the production of our C.T.C. tickets gave us free entry into Switzerland again. This was not all, however, as we had to get an authorisation to cross the pass, which costs two francs each motor cycle. The Swiss customs officer would not take Italian money, but he was careful to give me three huge Italian five-lire pieces in change.

We also had to conform to the obnoxious regulations which say that you cannot cross the pass on a Thursday, the time for the twenty-four miles must not be faster than six miles an hour, and the time you can be let out at the other end is written on the permit and must be given up at the other end; corners must not be taken at over *two* miles an hour, you are not allowed to start before 9 a.m. and not after 5 p.m., and a lot more silly regulations; whilst for infringing any of them you are liable to a fine not exceeding £24.

(To be concluded next week.)

WHICH IS THE BEST METHOD OF EXHIBITING A BADGE?



An A.A. badge attached to the rear of the lamp.

WHICH is the best method of attaching a badge to the handle-bar of a motor cycle? Some A.A. motor cyclists complain that there is not sufficient unoccupied space for the badge to be attached directly to the bar, and often when there is room there are too many other impedimenta such as mirrors, horns, watches, speedometers, and the like to render the badge clearly visible to the patrols. Obviously the best place is in the centre of the machine, and the badge in some cases is attached to the rear of the lamp (as in the case of the machine illustrated), which is an excellent position with the sole objection that the lamp is seldom sufficiently strong to carry it, but lamps vary so much in design. Some motor cyclists carry the badge on the number-plate. On the whole a support from the top tube would seem to be as suitable a place as any.

A TRIAL OF THE LUKIN CARBURETTER.

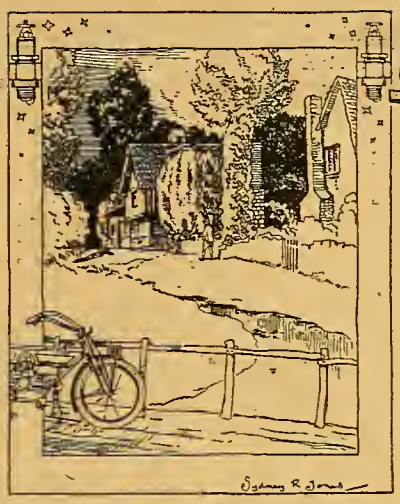
NOT long ago we described in these columns the new Lukin automatic carburetter. Since then we have had the opportunity of giving it a thorough road test on one of our machines. The Lukin has given great satisfaction under all conditions; it enables the engine to run extremely slowly (slower, in fact, than any standard carburetter we have tried), and at the same time the engine will pick up at once on suddenly opening the throttle without any of the hesitation which is a feature on only too many present-day carburetters. We found that we could get just about the same power and speed as with the ordinary two-lever carburetter, while the steady slow running and quick pick up with the single-lever control renders it particularly pleasant for use in traffic. It will be remembered that after closing the throttle a further movement of the control lever permits the ports to be opened again, and allows cold air only to be drawn into the engine. This is very convenient on a long hill, as it has a good cooling and scavenging effect on the engine, but the makers' instructions should be carefully carried out, and the ports should remain closed for a perceptible time before using the air brake, otherwise any loose petrol in the chamber is carburetted, and has the effect of opening the throttle for several revolutions. Adjustments are very simple, and can be carried out by the merest novice. The use of the single-lever control combined with the air brake permits one to drive on the throttle only, and it is hardly ever necessary to use the exhaust lifter.



The Lukin single lever carburetter fitted to a 3½ h.p. Centaur.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply.



Taking a Sidecar to India.

Will you be so good as to inform me on the following points, for which I shall be greatly obliged: (1.) Is a solid crate of wood, as opposed to an open lattice wood crate, required by the shipping companies for the transport of a motor cycle and sidecar? (2.) Which would be more economical, having one crate made for both in combination, or a separate crate for each? (3.) Can you give me the names of any companies who undertake this kind of work? My machine is an 8 h.p. Bat and sidecar.—C.E.S.

(1.) It is best to pack in a closed case. You can get rates from Messrs. Turner Bros., 134, Upper Thames Street, London, which include cost of packing. Of course, there is an extra charge for the sidecar. (2.) Messrs. Turner always pack the machines so as to take up as little room as possible. Generally speaking, they find it more economical to have two separate cases. They recommend a closed case, as a crate renders the contents liable to damage and pilfering.

Lamps and Lenses.

I wish to buy a lamp for my motor cycle—the cheapest I can get—bar, of course, rubbish. (1.) Is there any objection to self-contained ones? I have seen a very neat one at 11s. 6d. Gamage advertises in *The Motor Cycle* a lamp at 12s. 9d., and generator for same at 8s. 6d. Is this reliable? (2.) What is the Mangin lens, and is it much superior? (3.) Why are the lamp glasses sometimes divided into several pieces? (4.) I am getting a second-hand 3½ h.p. Humber, and attaching sidecar. Would you alter the variable pulley so as to put same permanently on lowest gear? I intend to use sidecar continuously, riding chiefly in Cheshire.—F.J.A.

(1.) The only objection to the self-contained lamp is that it requires a stronger bracket than one with a separate generator. The lamp sold by Messrs. Gamage should be quite satisfactory. (2.) The Mangin lens is the name given to a certain type of mirror lens now fitted to most high-class lamps. (3.) The front glass of a lamp is divided so as to prevent cracking. Very often if a glass gets hot in one place it will crack, as glass expands excessively. When, however, a glass is divided into sections, if one section becomes hotter than the other it has more room to expand. (4.) Yes, unless you have a change-speed gear on your machine you will have to set the variable pulley probably at its lowest gear.

Four-cylinder Machines.

Is there anything against shaft transmission on a motor bicycle with a multi-cylinder engine that it is so rarely adopted? What is your opinion of the four-cylinder F.N. as a machine for a light sidecar in a hilly country? Does the number of cylinders introduce any complication which a person with some experience of a four-cylinder car cannot easily get over?—H.P.N.

The only thing against shaft transmission is that it is necessary to have a good clutch or some slipping device between the engine and the rear wheel, otherwise the drive is more harsh than a belt. Fitted with a two-speed gear, the machine would take a sidecar in average hilly country. The machine in question should present no difficulty to anyone who has had any experience with a motor cycle or car.

Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Charging Accumulators off Mains.

Could you kindly explain how I could rig up an apparatus off 240 volt mains to charge accumulators (four volt), and what I should need to get to do so?—RN 1375.

It is possible to charge accumulators off 240 volt mains, but very expensive unless you connect them up only when the light is required. If the current is continuous it can be easily done by removing the cover of a switch controlling one or more lights and attaching wires to the two terminals. The + terminal must then be attached to plug on the accumulator. To find the positive and negative terminals, dip the ends of the wires in a cup of water to which a little vinegar has been added. Bubbles will at once appear on the negative wire. Have two or three 16 c.p. lamps in circuit, but do not switch on in the ordinary way or you will short circuit the accumulator. If the current be alternating, it will be necessary to purchase a transformer. (See page 52 of our issue for the 11th inst.) For more detailed instructions see "Motor Cycles and How to Manage Them," pages 152-155, 1s. 2d. post free from 20, Tudor Street.



MOTOR CYCLING IN MID-WINTER.
Almost the whole of the country was covered in a mantle of snow last week. Our illustration shows a 6 h.p. Royal Enfield sidecar forging its way along under difficulties.

Belts and Sidecars.

I should be obliged if you could advise me on one or two points. I ride a 7 h.p. Rex with sidecar, and find the machine very satisfactory except with regard to belts—rubber ones wear out very soon, and leather ones get a lot of grit embedded in them; in fact, I find that I have to get the grit out with a shoemaker's rasp every 100 miles. I have fitted an extra guard between the back wheel and belt rim, but that seems to make little difference. Is there any other position I can place a guard in to keep the grit away? (2.) Would it make the machine more silent if I removed the silencer and fitted exhaust pipes as used in the T.T. race. (3.) Although my sidecar is a castor wheel and steers with no apparent side drag, I find the tyres on the bicycle wear very rapidly, even the front one, which seems to wear more on the sidecar side than the other. In all other respects I find the combination most excellent. —BL 1840.

(1.) It is only to be expected that a 7 h.p. with sidecar will wear out belts very rapidly indeed. See "Winter Mudguarding" in our issue of December 7th, 1911, and "Dodges on the Exeter Run," January 1st, 1912. (2.) Possibly if you fit an expansion chamber with, say, one baffle plate in it, and use a long exhaust pipe leading from this you will reduce the noise of your machine. (3.) Probably your front wheel is not quite in track. There should not be very much wear on the front tyre, though certainly a little more than if a sidecar were not used.

6 h.p. Twin for Sidecar Work.

(1.) Can you thoroughly recommend the 6 h.p. Zenith-Gradua motor cycle for sidecar work with a heavy passenger in a hilly country? (2.) Is it easy to control in traffic? (3.) Is the belt drive really as black as it is so often painted for sidecar work? I see in your answers to "B.P.B." and "DL 75" in the issue of December 28th, 1911, you advise chain drive for heavy passenger work. (4.) What is the petrol consumption with this machine and a sidecar? (5.) Is it easy to manage as a solo mount? (6.) What are the alleged advantages of the castor or spring wheel sidecar over the rigid type? (7.) Is a 2½in. Hutchinson rubber non-skid tyre strong enough for the back wheel of the sidecar combination in question?—LA 1877.

(1.) We can thoroughly recommend the machine mentioned in your letter. (2.) It is simple to control in traffic. (3.) There is no doubt whatever that when two people have to be propelled, chain drive is to be preferred to a belt; it should be economical, and also possesses the advantage of being unable to slip whatever the weather conditions may be. (4.) The petrol consumption would be about sixty miles to the gallon with sidecar. (5.) It should be easy to manage as a solo mount. (6.) The castor wheel sidecar is claimed to strain the frame of the machine less than the spring wheel or rigid types. It does not, however, prevent sideslip so effectually. The spring wheel sidecar, on the other hand, has another advantage over the other two, as it renders riding more comfortable for the passenger. (7.) We should recommend a 2½in. steel studded tyre of the same make.

Throttle and Air Valves.

I had noticed, like Mr. B. Sparks Field, the letter saying that too weak a mixture would overheat as well as a too strong one, and had reasoned it out similarly, consequently I was pleased to read explanatory letters in your paper. I have had a 5-6 h.p. cycle and sidecar about three months, but had been studying your books, "Motor Cycles and How to Manage Them," "Hints and Tips," and the questions and replies, etc., in your paper for months beforehand. From reading and talking with riders I understood that opening the throttle lever gave the engine more petrol, and the air lever, of course, more air. After taking my Amac to pieces I began to alter my ideas, and reading the letters seemed to confirm them. Now it seems to me that the air lever alters the mixture, and the throttle alters the amount admitted to the cylinders. Consequently, I came to think that by opening the throttle only a little the pistons would only be able to suck a half charge of a correct mixture, provided the air lever was in the right position. Am I right. If not, a full and lucid explanation of the action of the carburetter valves would enlighten not only me, but many others. As my machine travels too fast for my wife, I want to know how to travel slowly without overheating, and I want it explained to me how it acts. How are new platinum tips put on to the contact breaker screws? I cannot understand, if the separating of them causes a spark at the plug, why they can open too much. I can understand the necessity of the plug points being correctly set, as the spark has to jump them.—H.I.

You are quite right in the conclusions you have arrived at respecting your carburetter. The throttle controls the quantity and the air valve the quality of the mixture. To drive slowly you close both valves to some extent because less gas will be required, and at slow speeds the suction of the engine has less effect on the petrol in the jet, and, consequently, if the air were not cut off at all you would get too weak a mixture. Regarding your magneto queries. It is better to get new screws from the maker of the magneto than to attempt to re-tip them yourself. There are three reasons for the instructions that magneto points should separate only the correct distance of 0.4 mm. (1.) If the points separated too far there would be hammering between them. (2.) It would upset the timing. (3.) A flame passes between the points when they separate, and if the distance this flame had to travel was too great it would detract from the intensity of the spark at the plug.

Hiring on a Sunday.

I hired a motor cycle one Sunday morning, to be returned first thing on the following Tuesday morning. I rode over a hundred miles on the Sunday, and when taking the machine out on the following morning I found the wheel was rocking a little. I took it to a garage, and as it was Bank Holiday the people were unable to repair, but they took the wheel out the next day and did what they could, but informed me they thought one of the parts in the hub (free engine) fitted badly, and they tried all day, but did not seem to cure the fault completely, and thought the part ought to go back to the makers. I rode back on the Wednesday morning, arriving about eleven—a day and a few hours late, I take it. I informed the firm here what had happened, also what I had been told. They said they would soon put it right, however, and on enquiry a few days afterwards, they informed me the machine was running splendidly and had been a long journey. I broke three spokes through getting the brake caught; apart from this and the other trouble the machine was quite satisfactory. Two months have elapsed, and they have now sent me a bill for a lot of other repairs, and also charged me with double hire. The charge is nearly £3 10s., and I think it very unfair. I should be pleased to know if I have a right to dispute the bill, or am I liable to the charges? —H.C.G. (Oxford).

Our legal adviser writes as follows: "As the contract of hiring was made on a Sunday, the agreement was illegal, and therefore not binding on the parties. The question of paying for the hire of the machine beyond the period arranged for does not therefore arise. If it can be shown that your correspondent did any damage to the machine while he had it, through his negligent use of it, he will be liable for this. Should a summons be issued against him, it is necessary for notice to be given at least five days beforehand of your correspondent's intention to plead the statutory defence that the contract is illegal, under the Sunday Observations Act, 1677. It will also be necessary for him to have the repairer he employed there, to support him as to the reason of the damage done to the machine. It would probably be best to deny all liability in connection with the hiring and the damage, but to offer a small sum in settlement of the damage."

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"M.J." (Glasgow). B.H.K. free engine hub.

"Oxter" (Oxford).—3½ h.p. Brooklands.

"H.S." (Newcastle).—Albion and Mabon free engine clutches.

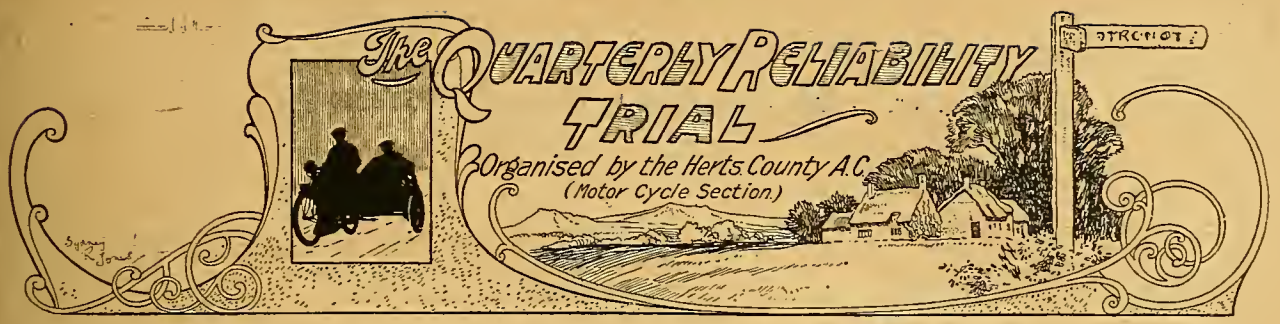
"A.J.L.M." (Greenwich). — 3½ h.p. Zenith-Gradua with sidecar.

"K.D.Y." (Kent).—Fitting Albion clutch hub, what structural alterations are necessary to a 1911 Douglas?

"W.J.M." (Preston). — 2¼ h.p. Levis lightweight.

"C.T." (Newark).—5-6 h.p. four-cylinder F.N. with sidecar.

"F.J.F." (Cumberland).—5-6 h.p. Clyno and 5-6 h.p. four-cylinder F.N. (two-speed) with sidecars.



THIS trial, held on Saturday last, was to all intents and purposes a quarterly trial under new management. It will be remembered that the Motor Cycle Manufacturers' Union was the means of the Auto Cycle Union annual series of quarterly trials being abandoned at the end of last year; the Herts County A.C. filled the breach, arranged the start and finish of the first trial at Uxbridge, and yet the trade supported the event, including some firms, members of the Manufacturers' Union, which were said to be entirely against the Quarterly Trials.

Midland and North-country readers will read with surprise that the trial could have been held, as almost the whole country fifty miles north of London was covered in a deep mantle of snow. Wires to Mr. Cooke, the organising secretary, elicited the surprising information that there was no snow in London and the trial would be held. Entrants from the Birmingham, Wolverhampton, and Coventry districts were, therefore, obliged to train up to the starting point, and we heard of several who had been absolutely unable to test their machines on the road, and were considerably concerned as to how they would behave on the hills.

It was drizzling with rain as the undermentioned competitors were despatched by Mr. G. Smith, from the Chequers Hotel, Uxbridge, at half-minute intervals, fifty-nine starting out of an entry of seventy-one.

C. C. Cooke (3½ Triumph)
W. Cooper (3½ Bradbury)
V. Wilberforce (2¾ Douglas)
W. F. Newsome (3½ Triumph)
E. C. Jarvis (3½ Triumph)
E. A. Colliver (6 Zenith)
A. J. Dixon (3½ Rudge)
J. Holroyd (2½ Motosacoche)
T. E. Seear (2½ Motosacoche)
B. Alan Hill (3½ Rudge)
G. T. Gray (3½ Rudge)
S. Witham (6 Matchless)
W. Wilson (4¼ Howard-Precision)
E. A. Marshall (2¼ S.I.A.M.T.)
Rex Mundy (3½ Singer)
J. Oliphant (3½ Premier)
F. W. Applebee (2 Centaur)
H. Beal (3 N.S.U.)
G. L. Fletcher (2¾ Douglas)
L. Cass (3½ Quadrant)
M. Drew (3½ Zenith)
C. Aslin (2½ Grandex)
R. Fletcher (3½ Premier)
P. H. Bentley (3½ Triumph)
H. C. Mills (3½ Premier)
C. M. Down (2¾ Enfield)
H. A. Cooper (3½ Bradbury)
W. P. Tippett (3½ Brooklands-Jap)
H. A. Matthews (3½ Zenith)
A. G. Fenn (2¾ Humber)
H. Berwick (2¾ Humber)
G. Griffith (3½ Rover)
G. Baxter (2¾ Saxon)
R. G. Charlesworth (3½ Zenith)
H. Haddock (2½ A.J.S.)
C. W. Meredith (3½ Bradbury)
A. R. Abbott (3½ Bradbury)
Vernon Taylor (3½ Rudge)
J. Woodhouse (3½ Precision)
W. H. Elce (3½ Rudge)
A. J. Sproston (3½ Rudge)
W. O. Oldman (5-6 Bat sc.)
B. T. Rice-Pyle (8 Bat sc.)
Edward Tee (6 Zenith sc.)
F. W. Barnes (6 Zenith sc.)
W. H. T. Rhys (8 Zenith sc.)
G. S. Drew (6 Zenith sc.)
C. R. Taylor (7-8 Chater-Lea sc.)
E. G. Attenborough (7-9 Indian sc.)
C. E. Holmes (8 Chater-Lea sc.)
D. J. Blackburn (6 Zenith sc.)
F. Smith (5-6 Clyno sc.)
C. F. Halsall (5-6 Clyno sc.)
R. E. Guest (6 Matchless sc.)
J. Chater-Lea (8 Chater-Lea sc.)
Averies Ponette Co. (7 Ponette)

The roads from the start were very muddy, rather too wet to be treacherous, but the amount of surface water told its tale on the belt-driven machines.

Through Watford to St. Albans was a non-stop section, but competitors were early in trouble, E. A. Marshall (S.I.A.M.T.) and A. J. Sproston (Rudge) being passed by the roadside, whilst on Rickmansworth Hill G. S. Drew and D. J. Blackburn (6 h.p. Zenith sc.) came to a standstill. C. Aslin (2½ h.p. Grandex) had evidently forgotten to fill his petrol tank at the start, for he, too, stopped and had to push to the next village. At the foot of Holywell Hill, St. Albans, competitors were timed in by Mr. D. K. Hall, and then despatched singly up the 1 in 9 gradient at 10 m.p.h.

Groups of spectators had gathered to see the fun. How far competitors were successful will be seen by the summary of hill-climb results, but the best performance was by J. Oliphant (3½ h.p. Premier), whose machine with Armstrong gear toyed with the ascent. The next nearest to the set speed was W. Cooper (3½ h.p. Bradbury). The slowest ascent of all was made by E. A. Colliver (6 h.p. Zenith-Gradua), and though this rider gained nothing extra thereby, we mention the fact, as it is significant to note that he was successful in making the fastest time in his class on both the other test hills—a fine advertisement for the infinitely variable gear. The change-speed machines, of course, had little difficulty in keeping to 10 m.p.h. on Holywell, especially after being allowed to cool their engines at the hill foot. Of the others, W. F. Newsome (1912 free engine Triumph) and J. S. Holroyd (2½ h.p. Motosacoche) made slow but sure climbs, W. P. Tippett (3½ h.p. Brooklands) broke his belt, and G. L. Fletcher (2¾ h.p. Douglas) nearly came off as his engine stopped firing, due to the petrol tap having been turned off at the hill foot. He immediately grasped the reason, swung his machine half round, and the engine just picked up in time. In Luton crowds turned out to see the riders file through.

The Second Non-stop Section.

Again a non-stop section was arranged to Barton-in-the-Clay (which village did not belie its name). Here competitors were marshalled for the ascent of Sharpenhoe. There was no timing at this point, but observers were stationed. Several failed. Between Sharpenhoe and Dunstable competitors could dismount and do what they liked, and many took advantage of

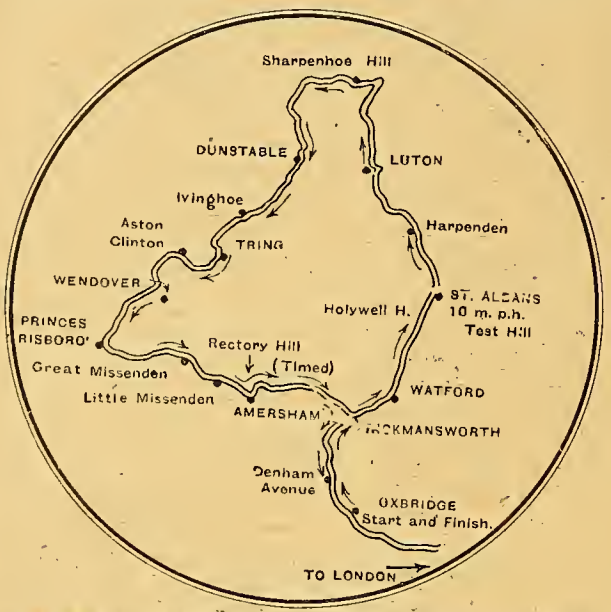


W. F. Newsome (Triumph) and A. J. Dixon (Rudge) being started from Uxbridge. The first named won the cup in the trade section and gained most marks.

Herts. County A.C. Open Trial—

the opportunity, so that the results from a reliability point of view must not be taken too seriously.

The Dunstable control was missed by many, and as the Herts County A.C. makes its awards on the vexatious system of riding to a split second schedule, many of the competitors



The 100 miles' route followed by the Quarterly Trials Competitors last Saturday

had to dismount and ride back to find the official in charge. There was an abundance of unrolled stones scattered over the roads, and the single-trackers scored here, as they could pick their way. Not so the passenger machines, and several were hung up with tyre cuts and bursts. A stone cut clean through the sidecar tyre of Frank Smith's Clyno, of Porlock fame, and though it seems hard that a good machine should suffer on account of tyre trouble, Smith has had a good run of luck, and must not be too disappointed. Still, the burst might have happened a few miles further back, and then no marks would have been lost, although this is hardly as it should be. Through Aston Clinton to Tring brought the first stage of the run to a close. A capital lunch was served at the Rose and Crown Hotel, and in an hour competitors were on their way again.

Aston Hill-climb.

The first incident after lunch was a timed ascent of Aston Hill, where Messrs. F. Straight and F. T. Bidlake were stationed. The surface was drier here than anywhere. A. G. Fenn, whose twin Humber was running magnificently, made a fine climb. W. F. Newsome (Triumph) was fastest, beating Colliver by one-fifth of a second. F. W. Barnes (Zenith), with Weatherilt in his "cobweb" sidecar, opened the spectators' eyes as he sped up faster than some of the bicycles. D. J. Blackburn's machine could not have been running well, as he again failed.

The actual times of the class leaders on Aston Hill, near Tring, are given below for comparison:

	m.	s.
Class A.		
A. G. Fenn (2¾ Humber)	1	21⅖
H. Berwick (2¾ Humber)	1	25⅕
E. A. Marshall (S.I.A.M.T.)	1	39⅗
Class B.		
W. F. Newsome (3½ Triumph)	1	3⅕
C. C. Cooke (3½ Triumph)	1	5⅖
V. Taylor (3½ Rudge)	1	16⅘
Classes C and E.		
E. A. Colliver (6 Zenith)	1	3⅖
S. Witham (6 Matchless)	1	6⅕
Class D.		
F. W. Barnes (6 Zenith sidecar)	1	16⅗
R. E. Guest (6 Matchless sidecar)	1	23⅖
E. G. Attenborough (7-9 Indian sidecar) ...	1	47

Through Wendover, Ellesborough, and Kimble the going was particularly bad, narrow tortuous lanes providing the competitors with no end of exciting incidents. Troubles were plentiful. We passed C. C. Cooke (Triumph), R. Fletcher (Premier), and W. P. Tippett (Brooklands) effecting adjustments by the road side, whilst in Princes Risborough Oldman (Bat) suffered a puncture in the back tyre.

A comparatively unknown hill was encountered after passing the foot of Kop Hill, Princes Risborough, viz., Pink Hill. This ascent is not exceptionally steep, but there is a hairpin bend to the left which caused considerable trouble. Fortunately, the surface was comparatively dry.



Two meets of different kinds clash at the foot of Holywell Hill, St. Albans. It is a pity that competitors were allowed to cool their engines and alter gears for the hill-tests.

Herts. County A.C. Open Trial—

The competitors' performances on Pink Hill were really disappointing. There was quite a crop of failures on this ascent, which is somewhat similar to Harlow Bank, but not nearly so steep. W. Cooper and Newsome went up well; Holroyd pedalled slightly; G. L. Fletcher, Fenn, and Berwick, on lightweight twins, made as good ascents as the bigger machines; Barnes, in the passenger class, went up in his usual style. Among the failures were A. J. Dixon, T. E. Secar, H. Beal, E. J. Bailey, M. Drew, H. C. Matthews, W. Wilson, W. P. Tippett, G. S. Drew, E. Tee, C. F. Halsall, C. E. Holmes, D. J. Blackburn, and Averies' Ponette.

The route now lay through Missenden to Amersham, where the riders were once more marshalled for the ascent of Rectory Hill, but, owing to the fact that the timekeepers had not had time to catch up, a delay of fifteen minutes occurred. This, of course, allowed opportunities for engine cooling, which should not be permitted.

Too Complicated.

Before going further, we should explain that the general feeling was that the competition was far too complicated. There were too many controls and non-stop sections, and too much split second timing; few really understood where they could get off and make adjustments and where they could not. Why the unobserved sections were included at all it is difficult to understand. A reliability trial should be a non-stop run, or it is no useful guide to purchasers. Even of the score who have been credited with non-stops, we observed several fiddling with their machines, shortening belts, and altering gears, by the roadside.

On Rectory Hill, Messrs. F. T. Bidlake and D. K. Hall took the times. Again those who had done well in the previous hill tests shone conspicuously, Colliver on this occasion displacing Newsome for fastest time. The times of the class leaders on this hill were :

CLASS A.

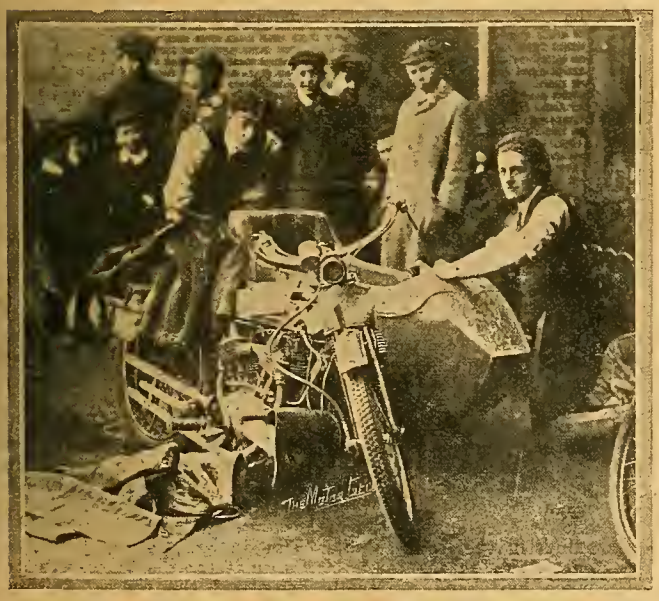
	m.	s.	Marks.
A. G. Fenn (2¾ Humber)	1	8⅘	... 25
G. L. Fletcher (2¾ Douglas) ...	1	25⅘	... 8
H. Beal (3 N.S.U.)	1	29⅖	... 5

CLASS B.

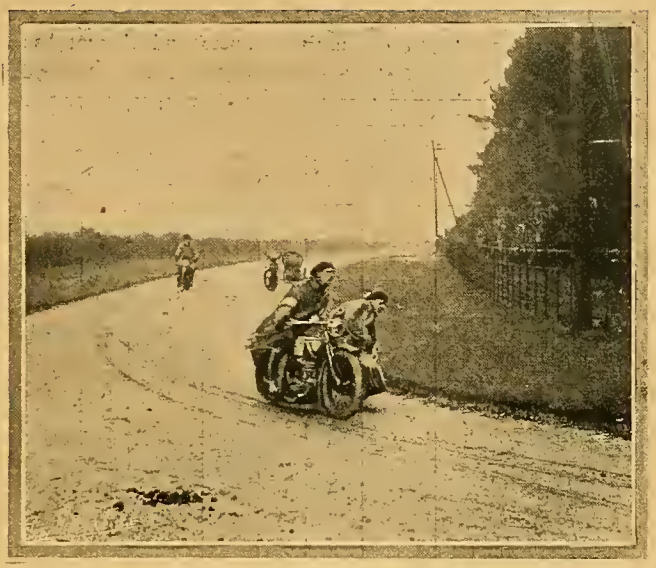
W. F. Newsome (3½ Triumph) ...	0	52	... 25
V. Taylor (3½ Rudge)	0	54⅕	... 23
A. J. Dixon (3½ Rudge)	0	55	... 22

CLASSES C AND E.

E. A. Colliver (6 Zenith)	0	48	... 14
S. Witham (6 Matchless)	0	59⅕	... 0



W. L. T. Rhys (Zenith) endeavouring to make a repair to his sidecar frame



F. W. Barnes (6 h.p. Zenith sidecar) rounding the bend at the foot of Aston Hill, followed closely by W. H. Elce (3½ h.p. Rudge).

	m.	s.	Marks.
F. W. Barnes (6 Zenith sc.)	0	54	... 25
E. G. Attenborough (7-9 Indian sc.)	1	16⅕	... 3
C. R. Taylor (7-8 Chater-Lea sc.) ...	1	22	... 0

Vernon Taylor was baulked by a boy, and was allowed another ascent; this time he overtook another competitor in the middle of the road and lost valuable seconds in cutting in.

H. Berwick (twin Humber) suffered bad luck. He was travelling well, but something temporarily went wrong with his three-speed gear, for the engine roared round and gradually came to a standstill. H. A. Matthews (Zenith) started with his compression tap open, so that his time was slow.

Though the marking of the route was good on the whole, one or two doubtful places were unmarked and several went wrong in Amersham, missing Rickmansworth altogether.

Fifty of the fifty-nine starters were timed into Uxbridge, mostly in daylight, and in the evening the following were given as the non-stops :

A. R. Abbott (3½ Bradbury)
W. H. Elce (3½ Rudge)
J. Chater-Lea (Chater-Lea sc.)
E. G. Attenborough (7 Indian sc.)
C. W. Meredith (3½ Bradbury)
C. R. Taylor (Chater-Lea sc.)
H. Haddock (2½ A.J.S.)
S.A.M. Witham (6 Matchless)
Alan Hill (3½ Rudge)
G. T. Gray (3½ Rudge)
H. A. Cooper (3½ Bradbury)
G. L. Fletcher (2¾ Douglas)
M. Drew (3½ Zenith)
W. F. Newsome (3½ Triumph)
J. Oliphant (3½ Premier)
H. C. Mills (3½ Premier)
E. A. Colliver (6 Zenith)
J. S. Holroyd (Motosacoche)
A. G. Fenn (2¾ Humber)
F. W. Barnes (6 Zenith sc.)

Summary of results on Holywell, Aston, and Rectory Hills :

CLASS A.—Machines up to 343 c.c.

	Marks.
A. G. Fenn (2¾ Hnmber)	68
H. Berwick (2¾ Humber)	57
E. H. Marshall (2½ S.I.A.M.T.)	56

CLASS B.—Single-cylinders up to 600 c.c.

W. F. Newsome (3½ Triumph)	95
C. C. Cooke (3½ Triumph)	73
V. Taylor (3½ Rudge)	—

CLASS C.—Multi-cylinders up to 670 c.c.

E. A. Colliver (6 Zenith)	88
S. A. M. Witham (6 Matchless)	0

CLASS D.—Passenger machines.

F. W. Barnes (6 Zenith sc.)	97
R. E. Guest (6 Matchless sc.)	57
W. Oldman (5-6 Bat sc.)	50
F. Smith (5-6 Clyno sc.)	50

Herts. County A.C. Open Trial—

Results and Awards.

The performances of the medal winners and the marks awarded are given below:

Name and Machine.	On Hills. Holywell Hill. 10 m.p.h. 50	Aston 25	Rectory. 25	Aggregate. 100	Running to Schedule 50	Non-stop Section. 50	Total 200
CLASS A.							
GOLD MEDAL—							
A. G. Fenn (2¾ Humber)	18	25	25	68	49	50	167
SILVER MEDALS—							
G. L. Fletcher (2¾ Douglas)	47	—	8	55	47	50	152
H. Berwick (2¾ Humber)	45	12	—	57	50	45	152
CLASS B.							
GOLD MEDAL AND CUP—							
W. F. Newsome (3½ Triumph)	45	25	25	95	46	50	191
SILVER MEDAL—							
B. A. Hill (3½ Rudge)	50	1	16	67	49	50	166
BRONZE MEDALS—							
H. A. Cooper (3½ Bradbury)	38	1	14	53	49	50	152
R. G. Charlesworth (3½ Zenith)	50	—	8	58	49	45	152
CLASSES C AND E.							
GOLD MEDAL AND CUP—							
E. A. Colliver (6 Zenith)	50	23	25	98	41	45	184
CLASS D.							
GOLD MEDAL—							
F. W. Barnes (6 Zenith-s.c.)	47	25	25	97	43	50	190
SILVER MEDAL—							
C. R. Taylor (7 Chater-Lea-s.c.)	47	20	—	47	43	50	140
BRONZE MEDAL—							
E. G. Attenborough (7-9 Indian-s.c.)	36	—	3	39	46	50	135

The Judge's Report.

The trial may be said to have been made up of four distinct divisions as follows, in each of which a certain maximum number of marks were allotted, and penalties specified for any departure from the standard:

1. Running to schedule time, 50 marks maximum. There were three controls—at St. Albans, just before the slow hill-climb; at Tring, luncheon stop; and at Uxbridge, finish. A deduction of one mark per minute or part of a minute greater than ½ was made for any deviation from schedule time.

2. Certain portions of the route were set to be traversed non-stop. Any stops on these portions had to be reported, and were penalised. Maximum marks, 50 for non-stop run.

3. Slow hill-climb test. Holywell Hill, St. Albans, is said to have an average gradient of 1 in 11, maximum of 1 in 8. A 10 m.p.h. speed limit was imposed. The competitors were required to climb the hill at this or a lower speed, being timed over a measured length of 2,500 ft. A deduction was made of one mark for every three seconds or part of three seconds faster than schedule time. No marks were gained by going slower than 10 m.p.h. Maximum marks, 50.

4. There were two timed hill-climbs. The fastest rider in each class scored full marks; a deduction of one mark was made for every second in excess of the fastest time in the class. Maximum for each hill, 25 marks.

In the slow hill-climb at Holywell five riders failed to make clean ascents in their attempts to drive slowly. Twenty-five marks have been deducted for such failure, in addition to any marks that may have been lost for too fast speed. But no other deduction has been made in awarding the marks for non-stop.

In running to schedule, there being three distinct sections, the full marks—50—were equally divided over the three sections, so that a rider could not lose more than 17 marks for being late at any one control.

The regulations did not specify the penalty for a stop; I had taken it at five marks per stop. Fortunately, this penalty does not in any way affect the placing of the awards, as the recipients have all 50 marks for the non-stop sections.

The gold medals in Classes A, B, C or E, and D are won by A. G. Fenn, W. F. Newsome, E. A. Colliver, and F. W. Barnes respectively. These awards, together with those of the silver and bronze medals in the various classes, are set out in the table. In Class A, G. L. Fletcher and H. Berwick tie for second and third places; I would recommend that each be awarded a silver medal. In Class B, H. A. Cooper and R. G. Charlesworth tie for third and fourth places; I would recommend that each be awarded a bronze medal. The silver cup for the best performance by a trade rider is, on the scheme of marks set out in the regulations, won by W. F. Newsome, on a 3½ h.p. Triumph, with 191 marks out of a possible 200. The performance of F. W. Barnes, on a 6 h.p. Zenith and sidecar, with 190 marks, was practically as good; a very slight variation in the running or in the scheme of marks might have put him in first place. The silver cup for the best performance by a private owner is won by E. A. Colliver.

ARCHIBALD SHARP.

Petrol at Tring was supplied at 2s. a gallon or 3s. a can.

Many of the sidecarists had trouble, W. L. T. Rhys broke the saddle stay of his Canoelet but managed to reach Tring. At times we noticed his Zenith bicycle leaning inwards at a considerable angle, and we were truly alarmed when he rode anywhere near us, for he did not modify his pace to any extent.

B. Alan Hill had the exhaust pipe of his Rudge come adrift at St. Albans, and had to secure it by means of string.

Rather an extraordinary trouble befell G. Griffiths, the magneto of his Rover coming adrift; he afterwards secured it with copper wire.

At Amersham we met W. Pratt on a P. and M. sidecar. He had come out to see the fun on Rectory Hill, and was quite useful as a marshal.

The New Hudson Cycle Co. have generously offered a twenty guinea challenge cup to the Herts County A.C. to be awarded for the best aggregate performance in the four quarterly trials.

One of the competitors, A. J. Dixon, rode the last fifteen miles on his Rudge with a flat back tyre. Notwithstanding this, the Hutchinson cover seemed none the worse, although the tube was ruined.

S. A. M. Witham had a tight engine bearing which continually slowed him up and emitted a horrible screech. However, with plenty of oil he managed to finish.

V. Wilberforce stopped on Rectory because someone had turned off the petrol tap at the hill foot. Curiously enough, G. L. Fletcher, also on a Douglas, nearly stopped on Holywell for the same reason. Both riders are convinced that the taps were turned off by malicious persons.

Although making good performances on the timed hills, C. C. Cooke spoilt his day's performance owing to his carburetter piston slides sticking up with mud. Many of the competitors in the Exeter run fitted shields round their extra air intakes to guard against this trouble. With the same object, Fenn tied his pocket handkerchief on the petrol pipe, which happens to be arranged immediately in front of the extra air opening.

Great credit is due to the lightweights, many of whom managed to finish this arduous trial within schedule time. F. W. Applebee, sen., with his little 2 h.p. Centaur, and E. A. Marshall (2¼ h.p. S.I.A.M.T.) were amongst those to finish. The latter had tyre and belt troubles. J. Holroyd, that well-known competition rider got his 2¾ h.p. Motosacoche through without a stop—truly a marvellous performance considering the percentage of failures.

Before reaching Dunstable, G. Baxter noticed that his machine seemed to wag its tail in a most alarming manner. Dismounting, he found nothing wrong and the tyres hard, so he continued. He had got up to a speed of over 70 m.p.h., when he noticed the front wheel rocking from side to side, and at once applied the brakes. Before he could come to a standstill the front spindle broke in half, letting the wheel out of its patent catches. Fortunately, the rider was not much hurt, and eventually completed the course, finishing two hours late. The machine was an old one.

A SLIDE VALVE ENGINE WITHOUT GEAR WHEELS

THE Empire Foundry Co., 453, Holloway Road, N., have been experimenting with a novel type of slide valve engine, and have decided to put two models on the market for motor cycles—a 2¼ h.p. lightweight and a 3½ h.p.

No gear wheels are employed in this engine, but the single slide valve is operated by a slipper which slides in grooves cut in the face of the crank cheek.

This method is by no means new, as it was employed by Gottlieb Daimler in 1889, and by the Motosacoche Co., but by modifying the shape of the grooves a quick lift and drop have now been obtained, which is said to greatly improve the efficiency.

The shape of the grooves can be plainly seen from the illustrations herewith. Full lift is obtained in one-fifth of a revolution. It will also be seen that for almost one revolution of the engine the slipper remains practically stationary, as the groove is concentric with the crank, but on the completion of this revolution the slipper is automatically moved across to the eccentric groove by the modification of the curve at this point. In this manner the 2 to 1 action is obtained.

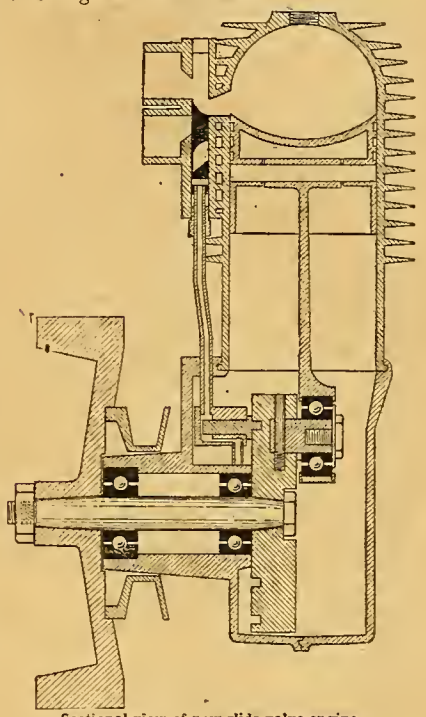
A reference to the drawing will show that, when the valve is connecting the cylinder with the lower or exhaust passage, the only valve surfaces that are exposed to the rush of the hot exhaust gases are those which are not subjected to rubbing contact, and therefore do not matter. In such a slide valve as is employed in this engine, it is of importance to have good bearing surface all round toward the outer edges of the valve. The centre part, which is less important in this respect, is that part which is closing the cylinder opening when explosion takes place, and therefore is the only part exposed to the hot gases.

The drawing of the 3½ h.p. model also indicates a small plunger pump worked off the valve mechanism, and supplying oil through the hollow rod to the valve, and, if necessary, the cylinder surfaces. There is no reason why the same pump should not be ntilised for the main engine bearings.

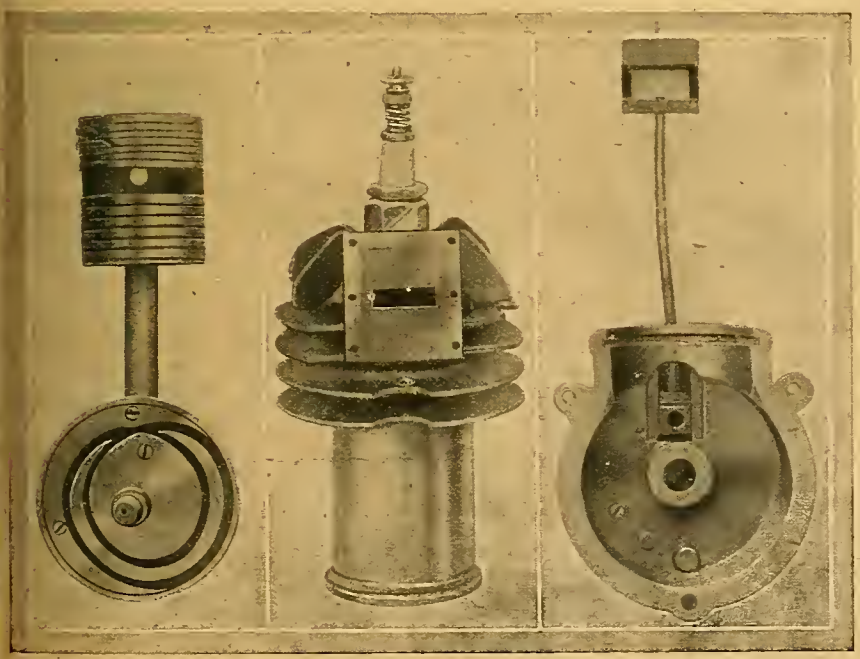
A 1 h.p. Model and some Results.

This idea is not merely on paper, for the Empire Foundry Co. at their works have a small model, as illustrated, of a 1 h.p. running on the bench. Although it is dependent on air cooling, and no fan is used, this model engine appears able to run for hours at a time; and, even admitting that the proportion of cooling surfaces in such a small engine is large relative to the volume of burning gases, it certainly looks as if overheating would not trouble it in the least, and this may largely be explained by the quick cut-off, which enables the exhaust valve to be held fully open till a very late point in the exhaust stroke.

Obviously the design is one that lends itself to great lightness; in fact, the makers say they can produce the 2¼ h.p. engine for lightweights at a weight of about 15 lbs. Besides its positive action, the simplicity of construction in this engine is also a great recommendation, for it permits of an exceptionally accessible and easily dismountable design, while valve setting is not necessary when put together again. In fact, in this respect the veriest tyro cannot make a mistake. The reciprocating weight of the valve, too, is comparatively small, and this should conduce to a comparatively well balanced engine at high speeds. It may be added that the Empire Foundry Co. are open to negotiate with makers to manufacture this engine under licence.



Sectional view of new slide valve engine.



A NEW SLIDE VALVE ENGINE.

1.—Tramways actuating valve. in crank cheek
2.—Cylinder and valve port of 1 h.p. motor.
3.—Valve and push rod.

NEW MOTOR CYCLE COMPANY.

We understand that the late directors and managers of the Sabella Motor Car Co. are forming a company to manufacture quadcars with tandem and sociable seats. Although the bulk of the capital will be subscribed by the directors and their friends, the public will be given an opportunity to participate.

WAR OFFICE TEST at BROOKLANDS

The War Department of the War Office is holding a test of motor bicycles at Brooklands on Monday next, the 29th inst., at 11 a.m., presumably with a view either to purchase machines for the British Army or to gain data concerning the use of motor bicycles for military purposes. In the circular to manufacturers inviting them to send their riders with a motor cycle to the track, mention is made that "the War Department is now considering the question of the purchase of types of motor bicycles which might be suitable for use in the army."

Motor cycles which are submitted for this test will be required to climb the test hill from a standing start, in full touring trim, and with a rider weighing at least 12 st. Machines with engines up to 500 c.c. will also be required to average 45 m.p.h. on the track, and those with engines up to 350 c.c. 40 m.p.h. This will be a fairly stiff test for the average single-geared motor bicycle to accomplish It would therefore appear to be an opportunity for the variably geared machines to shine conspicuously.

Club News

Sussex M.C.C.

A meeting will be held this evening at eight o'clock at the Fountain Hotel, Worthing, to discuss the formation of the club and the amalgamation of smaller clubs and other matters.

Purley and District M.C.C.

The annual dinner and prize distribution on the 17th inst. was well attended. The evening concluded with a musical programme. The annual general meeting will take place on the 31st inst.

The Motor Cycling Club.

The gold and silver medals won in the recent London-Exeter and back trial will be presented at the opening run dinner, Old Ship Hotel, Brighton, on Saturday, March 23rd.

The following are the principal events for 1912:

March 23rd.—Opening run to Brighton, returning following day. Headquarters, Old Ship Hotel.
April 5th to 8th.—Easter tour and Jarrott Cup competition to Land's End and back.
April 27th.—Silencer trials.
May 11th.—Members' hill-climb.
May 24th to 27th.—London-Edinburgh trial.
June 15th.—Inter-team trial for *The Motor Cycle* Cup.
June 29th-30th.—All-night run and picnic.
July 6th.—Brooklands.
July 13th.—Speed-judging trials.
August 5th to 7th.—Devonshire tour, hill-climbs, and brake tests.
August 10th to 18th.—Continental tour.
September 7th.—Hill-climb.
September 28th.—Special club trial.
December 26th-27th.—London-Exeter and back.

In connection with the above events, there are nine valuable silver cups, one gold cup, and medals to be awarded.

Candidates for membership should apply to the hon. sec., Mr. W. E. S. May, 34, Gower Place, W.C. There are now over four hundred members in the club, and no more can be admitted after five hundred are registered.

SATURDAY'S QUARTERLY TRIAL.



C. E. Holmes (Chater-Lea sidecar) leaving the Rose and Crown Hotel, Tring, after the luncheon interval.

Nottingham and District M.C.C.

The annual general meeting will be held at the Welbeck Hotel, Nottingham, on Thursday, February 1st, at 8 p.m.

Birmingham M.C.C.

The ninth annual general meeting will be held at headquarters on February 17th. Ten new members were elected at the last committee meeting.

Grosvenor M.C.

A meeting will be held at headquarters, The Gorse Hill Hotel, Stratford, Manchester, to-day, 25th, at 8 p.m. Suggestions for 1912 season will be welcomed.

Sutton Coldfield A.C.

In a report recently issued by the Sutton Coldfield Automobile Club mention is made of the fact that no less than nine members have taken advantage of the free legal defence scheme in connection with summonses for alleged exceeding the speed limit. Out of the nine cases taken in hand, five were dismissed entirely and one dismissed on payment of costs.

Bedford and District M.C.C.

At a meeting held on Friday the 19th inst., it was decided to form a motor cycle club. The following officers were elected: Captain, Mr. A. F. Crump; vice-captain, Mr. C. F. M. Chambers; treasurer, Mr. W. H. Edwards; joint hon. secs., Mr. H. A. Lock, 9, Grafton Road, Bedford, and Mr. D. R. O'Donovan, Thornton Street, Kempston, Bedford, who will be glad to hear from intending members.

Essex M.C.

The club will hold its annual dinner and prize giving at the Great Eastern Hotel, on Saturday, February 10th. Mr. Stenson Cooke has kindly consented to occupy the chair, and a good musical programme has been arranged. The annual general meeting will be on Thursday, February 1st, at the Eagle Hotel, Snaresbrook, Essex, and it is hoped that all members will make every endeavour to be present.

Bristol M.C.C.

At a meeting held recently twelve new members were elected. On February 21st a lecture will be given by Mr. A. Bennett, of the Bosch Magneto Co.; all those interested are invited. The spring competition will be held on March 30th, and the summer competition on May 18th, while an open hill-climb has been arranged for April 20th. In addition to these, inter-club runs are being arranged with the Yeovil, Taunton, and Exeter clubs, and a continental tour in Holland will be held some time in August.

Surrey M.C.C.

The fifth annual general meeting was held at the headquarters on the 18th inst. The annual report was adopted unanimously, the number of members showing a large increase and the financial position being very satisfactory.

It was resolved to request Mr. Stanley Christopherson to continue as president. The following officers were elected for 1912: Chairman, Mr. E. Cox; vice-chairman, Mr. J. Sparks; captain, Mr. F. A. McNab; vice-captain, Mr. P. Mitchell; hon. treasurer, Mr. W. P. Trench; hon. secretary, Mr. C. J. Feeny.

A proposition by Mr. G. S. Williams, "That a section of the club be formed to study and develop scouting, despatch riding, and map reading, with a view to assistance in military operations," was discussed and approved, the new committee being instructed to bring the scheme into operation in good time for the coming season.

After the conclusion of the business of the meeting, a paper was read on the subject of the single speed *versus* the variable gear for motor cycles for solo use, by Mr. C. J. Feeny. A reply on behalf of the variable gear was made by Mr. E. Cox, and a very interesting discussion ensued.

Club News—

Manchester Amateur M.C.C.

A motor cycle club has been formed in the Manchester district, to be confined entirely to amateur riders. It is proposed to hold a hill-climb once a month during the riding season, and one or two reliability trials. Those desirous of becoming members of the club must be proposed and seconded by existing members of the club. All particulars may be obtained from Mr. R. B. Yeld, 30, Rathen Road, Withington, hon. secretary.

Hamilton and District M.C.C.

On Wednesday, the 10th inst., a large and enthusiastic meeting took place in Gibson's Café, Cadzow Bridge, Hamilton, when it was unanimously agreed to form a motor cycling club, upon a proposal put forward by Mr. Robert Cassells, Hamilton. The club commences with a membership approaching forty. The following officials were appointed: President, Mr. Robert Cassells, Hamilton; vice-president, Dr. Fotheringham, Motherwell; hon. treasurer, Mr. Wm. Rodger, Hamilton; hon. secretary, Mr. J. Low, Carmaben, Hamilton.

Blackpool and Fylde M.C.C.

Mr. Bennett's recent lecture was most instructive. About 110 slides were shown.

A reliability trial will be held next Saturday. The competitors will start at minute intervals from the Technical Schools, and are expected to ride at the rate of 20 m.p.h. The total distance is 116 miles.

Route and Condition of Road.—Main road Blackpool to Garstang; turn left, then right, road good, to Lancaster; turn right when through town, good; turn left at Hornby, good; turn right when one mile through Melling, be careful at corner, good; bad road from Melling to Ingleton; good from Ingleton to Long Preston; keep to right to Gisburn, road bad; be careful down Sawley Brow (gradient 1 in 4), road good; turn left at Clitheroe; turn right two miles past Whalley, road fair; turn right at Nellor; turn right at Five Barred Gate Hotel; be cautious; road fair to Preston; leave Preston by North Road, road good; turn left from main road when one and a half miles from Garstang, road good; when entering Blackpool, *via* Cemetery, turn left at Sanatorium; turn right Devonshire Square to last control. If possible, arrows showing road will be fixed.



G. W. Orr (3½ h.p. Ariel), who has been awarded the silver cup as the "aggregate" prize in the Glasgow Motor Cycle Club's 1911 competitions. Mr. Orr gained a gold medal in each of the following events: Hill climb, reliability trial, consumption trial, and flexibility trial.

1912 ANTICIPATIONS. THE DUTCH TRIAL AND THE SAUCER TRACK.



A design by Miss E. E. Sewell which appeared on the programme of the North-West London M.C.C. smoking concert.

Purley and District M.C.C.

The annual general meeting will be held at the Greyhound Hotel, Croydon, at 8 p.m., on the 31st inst.

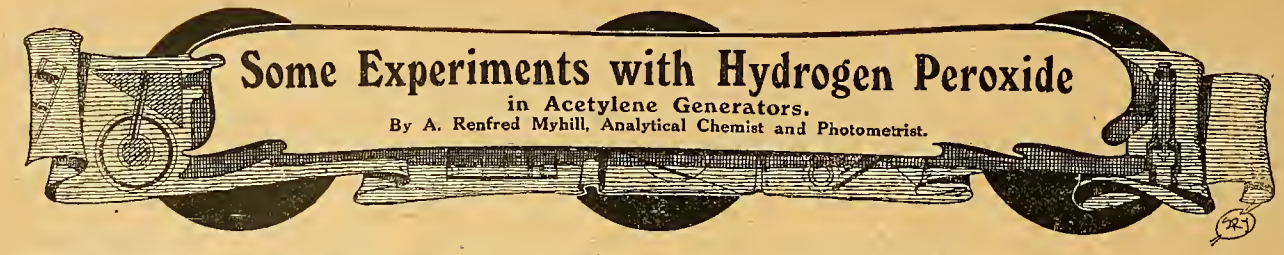
British Motor Cycle Racing Club.

At a committee meeting held last week it was reported that five members had resigned at the end of last year, and five new members had made application for election. The membership at present stands at over 120, which makes the B.M.C.R.C. one of the largest motor cycle clubs in the country. It is the only purely racing club in that branch of motoring. The annual report and balance sheet were passed, and nominations for the new committee were received; both these are in anticipation of the annual general meeting, which will be held at the offices of the Brooklands Automobile Racing Club, Carlton House, Regent Street, S.W., on Wednesday, January 31st, at 7 p.m. At the same meeting it was decided to recommend that the club's gold medal be presented to Mr. Alec S. Ross for his services as honorary auditor.

Inter-club Contest.

The joint winter reliability trial held for the Marians Challenge Cup between the Streatham and District M.C.C. and the Surrey M.C.C. will take place on Saturday, February 3rd, starting from the Swan Hotel, Leatherhead, at 8.30 a.m. Silver medals will be awarded to every competitor who completes the course in the prescribed time, and whose performance on the observed section is satisfactory. The teams will consist of six competitors, one of whom must drive a passenger machine. The winning team will be the one the members of which gain the highest number of awards, a silver medal counting as the equivalent of two bronze medals. In the case of a tie, the winning team will be the one the members of which, considered individually, have kept most nearly within the average riding speed over the observed section of eighteen miles an hour for motor cyclists and seventeen miles an hour for passenger machine drivers. The observed section will be between Newbury and Andover, which must be covered without a stop.

The route will be as follows: Leatherhead, Dorking, Coast Hill, Gomshall, Newlands Corner, Guildford, Hog's Back, Farnham, Warren Corner, Odiham, Warnborough, Hook, Basingstoke, Kingsclere, Newbury (check), Wash, Highclere, Dyley, Andover (check), Windwhistle Cottage, Wherwell, Crawley Down, Winchester (check and halt), Bramdean, East Tisted, Alton, Farnham, Hog's Back, Guildford, Gomshall, Dorking, Leatherhead—151 miles. Check at finish.



Some Experiments with Hydrogen Peroxide

in Acetylene Generators.

By A. Renfred Myhill, Analytical Chemist and Photometrist.

THE following experiments were conducted with a view to investigating the truth or otherwise of the statements recently made in this journal that hydrogen peroxide, added in small quantities to the water used in acetylene generators, was beneficial to the light produced. The idea is, I believe, more prevalent in America than in this country, but no one seems to have made a thorough or conclusive test of it. The writer, therefore, was led to conduct a few experiments with the object of ascertaining—

(1.) The amount of increased light, if any, produced by the use of peroxide of hydrogen in the water.

(2.) The best strength solution to use.

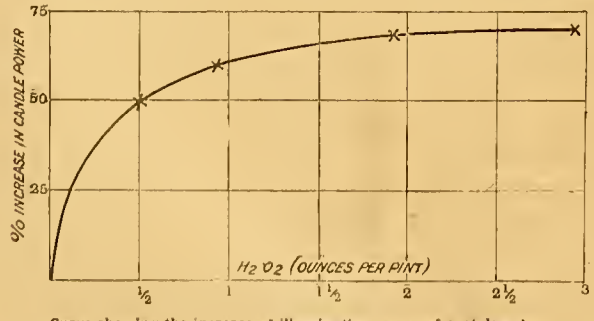
(3.) The deleterious effect of its use on the metal parts of the lamp, or generator.

This last was suggested by a letter also appearing in *The Motor Cycle*, in which a correspondent suggested that hydrogen peroxide, being almost invariably acid, would exert a corrosive action upon the containing metal vessel.

The Presence of Acid.

Now the acid which exists in hydrogen peroxide is purposely put in in order to preserve it, and as the liquid is often used for analytical and medical purposes, it is evident that only a very small amount ought to be present. The writer obtained two samples, bought at random from two different shops, one sample being sold as "20 volumes strength," and the other as "10 volumes" strength. On analysis the first was found to contain about .1% of acid, while the latter contained .05% only.

When we consider that it is necessary to dilute the solution with about twenty times its volume of water before it is put into the lamp or generator, these figures become .005% and .0025% respectively, *i.e.*, the stronger contains only one part in twenty thousand of acid. Again, the acid which is used is nearly always phosphoric acid, or hydrofluosilicic acid, both of which exert practically no action on ordinary metals, even when strong. It is, therefore, evident that the action of the acid on the generator parts is so slight as to become absolutely negligible. In any case, it may be safely said that the carbide itself does more harm to the generator than any acid (which may or may not be present) in the hydrogen peroxide.



Curve showing the increase of illuminating power of acetylene by using H_2O_2.

The next experiment was to see if the light were increased by the use of this chemical, and, if so, what were the best proportions of it to use.

The statement, as we read it, of "putting two ounces of peroxide of hydrogen into a quart of water" is not definite enough for a practical guide, because the term peroxide of hydrogen may mean anything. Pure hydrogen peroxide is almost a chemical curiosity; what is sold as such in chemists' shops is always a solution of the substance in water, so that it is necessary to know exactly what strength we are buying in order to give any figures as to the proportions to use for making acetylene.

What to Buy.

There are two strengths commonly sold, known as "10 volumes" strength and "20 volumes" strength. A third is sometimes met with, but is rather expensive, and is rarely bought unless for delicate analytical work. This is Merck's 100 volume "Perhydrol," which contains about 30% of the pure substance. As the "20 volumes" is the strength usually sold, all the figures given below are based upon the use of the chemical of this strength.

A lamp in which acetylene was burned was tested photometrically, and its candle-power noted.

The same lamp was cleaned out, and hydrogen peroxide solution put into it in place of the water (the carbide being part of the same sample). Again the candle power was determined, and compared with the previous one.

This was done several times, each time using a solution of a different strength, so that the mixture giving the best result could be found.

The following figures were obtained:

Ounces of "20 volumes" hydrogen peroxide per pint of water.	Percentage increase on original candle-power of lamp.
½	50.0
1	62.5
2	68.8
3	71.0

It will thus be seen that the addition of even a small quantity of hydrogen peroxide to the water effects a very marked increase in the candle-power of the lamp, while adding more of the chemical does not have anything like such a great effect as would be expected. This is best seen from the curve (reproduced), which shows the per cent. increase in candle-power, plotted against ounces per pint. This curve rises abruptly from zero to one ounce per pint, and then continues nearly horizontally, showing that the rate of increase of illuminating power becomes much less as more hydrogen peroxide is added. It may be here stated that the lamp was adjusted so that the best light was obtained in each case.

Some Experiments with Hydrogen Peroxide in Acetylene Generators

Possibly the explanation is as follows: The increase in candle-power is probably due to the oxygen which is evolved from the H_2O_2, together with the acetylene, causing more complete combustion than would otherwise be the case. It is well known that acetylene burns with a smoky flame unless supplied freely with oxygen, and that the more air (*i.e.*, oxygen) we give it, the greater the luminosity of the flame, up to a certain point. Beyond this point any excess of oxygen only tends to cool the flame and so decrease its brilliancy, so that with a great excess of hydrogen peroxide (and therefore of oxygen) this state of things is in operation.

It may, therefore, be taken as a rule that two ounces of "20 volumes" hydrogen peroxide per pint of pure (soft) water is the best for all-round work. I do *not* recommend the proceeding adopted by one amateur who filled his generator with H_2O_2 of full strength and then wondered why it exploded when he applied a light. A solution too strong would do far more harm than good, besides being risky, as acetylene and oxygen form a very explosive mixture.

With the strength given, however, there is absolutely no danger.

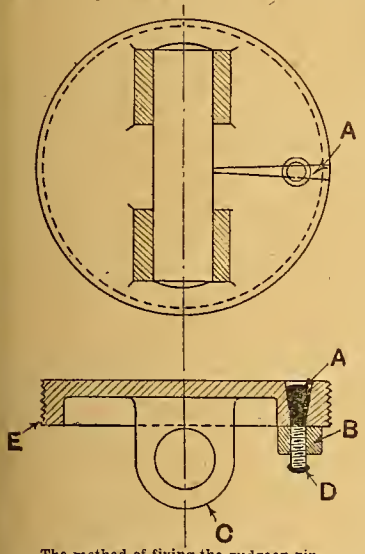
Just a word may not be out of place here as to keeping peroxide of hydrogen. The substance is not particularly stable, and should, therefore, be bought as required, as it readily gives off oxygen and loses its strength if kept for any time.

The bottle should be perfectly clean inside, as the least trace of dirt will often cause the substance to be quite useless in a few hours.

As accidents might take place if a mixture of incorrect strength were used readers who contemplate experimenting are advised to obtain the mixture only from fully qualified chemists.

THE EAGLE MOTOR CYCLE.

SEVERAL new models are being placed on the market by the Eagle Motor Co., 1, Shepherd's Bush Road, W. The accompanying illustration shows the first to be turned out—a 2 h.p. lightweight 60 × 70 mm. The engine possesses several new features. The inlet valve, which is mechanically operated, works on the overhead system, while two exhaust ports are fitted so as to allow free exit for the exhaust gases and to avoid distortion of the valve on one side. The combustion head on this model is detachable. The most interesting feature in this and the other types of engines made by this firm is the patent gudgeon pin fixing, which is illustrated herewith. A brass disc on which the gudgeon pin bearings are cast is screwed into the piston, tight up against the underside of the top of the piston. (A mica washer is placed on the top of the disc to act as an insulator. The disc is split, and near the outer end of the split a threaded taper pin is inserted. After the disc has been screwed home the pin is locked by means of a nut, the end being burred over to prevent the nut unscrewing. The taper pin expands the disc and renders it a rigid fixing in the piston. The gudgeon pin is a tight driving fit in the small end of the connecting rod, and the rod is, of course, threaded on the gudgeon pin before the disc is screwed into the piston. For this method it is claimed that the fixing is absolutely safe and the gudgeon pin has a larger bearing surface.



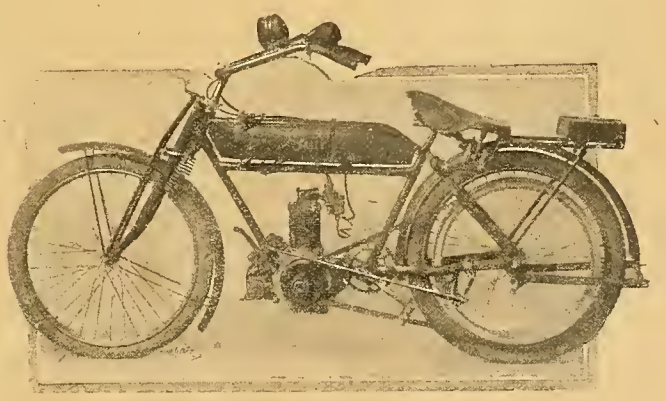
The method of fixing the gudgeon pin.
A. Taper pin fitting into split portion.
B. Nut.
C. Gudgeon pin bearing.
D. End of screw, burred over to prevent nut coming off.
E. Thread for screwing into piston.

Both sides of the crankshaft run on ball bearings. In the large models a special oil sump is provided in the bottom of the crank case, which allows the oil to be kept at a reasonably cool temperature. The magneto is carried in an aluminium case, and is driven by means of an enclosed chain. The frame has the top tube dropped at the rear, while Druid forks, front and belt rim brakes, and footrests are provided. The lubrication is by crank case suction through an adjustable drip feed and an auxiliary hand pump. Brown and Barlow carburetters are fitted to all models.

Other types which will shortly be ready are a 3½ h.p. tourist single-cylinder 85 × 88 mm., a T.T. model with an engine of similar dimensions, a 4 h.p. twin 60 × 60 mm., and an 8 h.p. twin 85 × 88 mm., which may be had with either belt or chain drive.

Other specialities are a ladies' 2 h.p. single with slightly inclined engine and a 4 h.p. ladies' twin. To these a stand will be fitted which will allow the rider to remain at rest in traffic without the need of putting the feet to the ground. Another item which will be supplied to fit these models is a special quickly detachable sidecar, the frame of which is suspended on semi-elliptical springs. All models may be had with change-speed gears and foot starting.

It is interesting to note that the Eagle Motor Co. specialise in all repairs to motor cycles.



Belt side of the 2 h.p. lightweight Eagle.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Tyre Repair Hints and Other Items.

Sir,—The following might be of interest to some of your readers :

After applying "no-cement" patches to inner tubes light the head lamp and hold the patch side down on top of the lamp until it becomes too hot for the hand, when, of course, it should be removed; this will quite effectually vulcanise.

If the size of the rent will permit, a patch should be placed on the inside of the tube as well as on the outside.

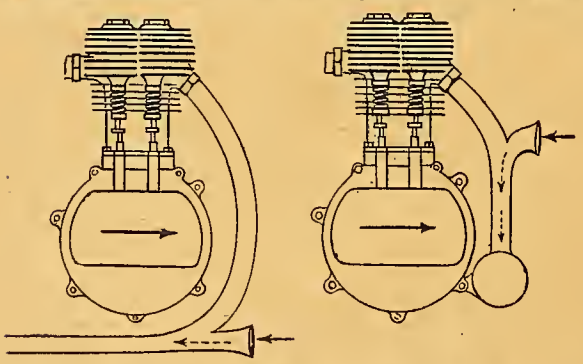
One half-ounce of sulphuric ether to each gallon of petrol will give a quick igniting fuel for winter use that will give more power than ordinary petrol.

I see that Mr. B. H. Davies in your issue of November 30th mentions the "'open muffler boob' (as the Yankees term him)." Now, as a matter of fact, the term is confined to the use of the paper which originated it and a few of its subscribers. The paper in question is the one you commented on in "Current Chat," of December 21st, which remarks I fully endorse. FRANCIS C. TURNER.

Virginia, U.S.A.

Cooling the Exhaust Gases.

Sir,—Perhaps your readers may find the enclosed idea interesting. Cooling the exhaust quietens it, I believe;



also in this case there would be no back pressure—in fact, just the reverse. It could be modified in appearance.

L. C. BAIN.

[The exhaust gas might be cooled in the manner suggested where the air enters at the base of a long pipe, but in the case of the orifice high up near the engine, any reduction of noise due to the cooling effect would be counteracted by the escape of the gases so close to the valve. The result would, we think, be the same with the longer pipe, but to a modified degree.—ED.]

The Motor Cycle and Theatricals.

Sir,—Thanks to an article in *The Motor Cycle* we had the pleasure of meeting the members of the George Edwardes M.C.C. during the visit of the Merry Widow Co. to Cork. Unfortunately, the visitors had not brought their machines to Ireland, as they had heard such a bad report of our roads, especially in winter.

Mr. C. G. Goode, the founder of the C. and D. M.C.C., had invited the members of the local club to a smoking concert on Wednesday, January 3rd, and he immediately extended a cordial welcome to all the members of the George Edwardes Club. Messrs. Warren, Foster, Sinclair, Cotter, and Ripley Evans were present, and a most enjoyable evening was spent.

Messrs. Dobbin and Pohlmann also took Messrs. Foster and Cotter for a run in their sidecars to Macroom, Messrs. Egan and Russell accompanying them on solo machines, and in spite of the bad state of some of the roads the run was thoroughly enjoyed by all.

We hope to have a return visit from this little band of genuine enthusiasts before long, when we intend organising an inter-club competition of some kind.

RONALD S. RUSSELL,
Hon. Sec. Cork and District M.C.C.

The Nominal Horse-power of Motor Cycles.

Sir,—Regarding horse-power rating, I often see in *The Motor Cycle* and other papers that the same-sized moter is called 3, 3½, and 4 h.p. Personally, I should prefer that all makers mention in their price list the exact cubical capacity of their engines. Now, I have found that by dividing the c.c. by 100 you have nearly exactly the actual horse-power of the motor. Examples :

F.N. four-cylinder motor, 494 c.c. = 4.9 h.p.
Matchless twin, 76 × 85 mm. = 776 c.c. = 7¾ h.p.
Triumph, 85 × 88 mm. = 499 cc. = 5 h.p.

Do you approve of my method? I hope to hear from you about the matter through the columns of *The Motor Cycle*.

Amsterdam. A. CITROEN.

[Mr. Citroen's suggestion is an excellent one. We should explain that his communication reached us before the article on the same subject (page 63) appeared in print, though not before it was written. "Auriga" pointed out in the article that motor cycle engines are capable of giving 1 h.p. per 100 cubic centimetres capacity, and Mr. Citroen's suggestion is to rate the horse-power of motor cycles in this manner. It is worthy of careful consideration by all motor cycle manufacturers, as the method in use at present is somewhat misleading.—ED.]

How to Prevent Side-slip.

Sir,—I notice on page 58 of last issue, that "Ixion" gives my letter, published under above heading on January 4th, a direct negative. I can only say that I wrote my letter immediately after a ride when I had actually proved the advantages I described. I should be very pleased to take "Ixion" out on the carrier and prove it to him or on him at any time when the roads are suitably slimy.

GUY WROWE.

Sir,—It is with some hesitation that I presume to criticise your contributor "Ixion," but I should like to explain my views on his suggested additions to the article on side-slip. On the subject of the advisability of wide handle-bars I quite agree with him. His advice as to not funking is good, but very much easier to give than to take, especially if one is traversing a nasty patch of grease which has been the cause of one's downfall on a previous occasion; but my experience in regard to weight on the carrier is the exact opposite to his. I find, for instance, that a passenger on my carrier (though I do not recommend this form of transport) distinctly minimises skidding, and does not seem to have the same effect as placing the saddle further back. I have always imagined that the reason for this was that the extra weight caused the rear tyre to go right through the mud and bite on the road surface proper. Of course, if more weight is carried over the rear wheel, the tyre must be pumped harder. UBIQUE.

This Year's Tourist Trophy Race.

Sir,—The Competitions Sub-committee of the Auto Cycle Union has instructed me to write to you regarding a letter which appeared in your last issue signed by a Mr. G. J. A. Brown. The correspondence with the Isle of Man authorities having been laid before this committee, it is satisfied that the statements of Mr. Brown are not in accordance with the facts. As the negotiations between the Isle of Man authorities and the A.C.U. are still in progress, I cannot make any further statement at the moment.

With regard to his statements as to the conduct of certain motor cyclists, Mr. Brown must have forgotten that the A.C.U., both in the Isle of Man and since, took drastic action with the offenders.

F. STRAIGHT,
Secretary A.C.U.

Sir,—I have noted with surprise that you suggest France as a favourable place for holding the T.T. Races.

On account of the hilarity on the part of certain competitors you are flying from the Isle of Man, where the authorities, to put it vulgarly, have already had enough of them, although the temptations for the young and loose could never have been very great.

You have chosen France! France, sir, was never a country calculated to reduce the feelings of the hilarious; and the Frenchman is the very last person in the world to forgive that vice on the part of a foreigner. He resents it to a very marked degree, and, to put it mildly, he will not stand it.

It has long been the belief of the misguided many that the Frenchman loves the Englishman, that he esteems him, and that his one wish is to be seen with him. I have spent a considerable time in France, and have studied the Frenchman's character with the utmost care, and can assure you, sir, that the above assertion is entirely without foundation, and that no statement could be more entirely false.

The average tourist, who spends a few weeks in every country in Europe, has read that the above was the case—he believes it, and troubles his head no more about it, for the Frenchman is too well-bred to show him in any way whatever that he is mistaken. I only wish the Englishman was equally well-bred!

No! You can rest assured, Mr. Editor, that unless we can rid ourselves of the hilarious few (which, I fear, is impossible), the projected step will be a dangerous one, and will weaken the *entente cordiale* (which, by the way, is already tottering to its fall) rather than strengthen it.

H. A. BUSK.



THE CLYNO AS A THREE-SEATER.

A. Brintman, of Paddington, W., who uses a two-seated sidecar of his own design with his 5-6 h.p. two-speed Clyno. In a letter to us, the owner remarks upon the comfort of the machine.

Winter Runs.

Sir,—To us Northerners the various picturesque accounts of the big winter trials held "down South" are most interesting, but how every writer enlarges on the "oceans of mud" that were everywhere, especially on the riders!

In view of the various articles and letters that have appeared recommending the ordinary two-wheeled motor cycle for professional and business uses *in all weathers*, it rather looks as if the writers have not had the experience of riding under such conditions as these trials were held.

Being an ardent advocate of three or more wheels for all-weather business travelling, it would greatly interest me, and no doubt many others, to hear from observers how the A.C. and the Morgan runabouts fared in the Exeter run. Were the riders of these machines able to keep clean and comfortable without the addition of the weird and wonderful, and, in most cases, useless, mudguarding devices that disfigured the motor bicycles? With regard to the Morgans, were these the two-seater models driven without passenger? If so, what was their behaviour when taking a sharp turn to the left?

Wishing *The Motor Cycle* in 1912 the same well-merited success it has enjoyed in past years,

CECIL KIMBER.

[The remarks in this journal with regard to the way most of the riders were bespattered with mud, apply more particularly to the bicyclists. The Morgan runabouts, with one exception, carried passengers.—ED.]

Clean Counties and Local Taxation Licences.

Sir,—In your issue of the 11th inst., page 49, "Rutlandshire" notifies an endorsement printed in red at the top of his 1912 motor licence form. My own form (Middlesex) is similarly endorsed, but I should like to point out another alteration. Formerly, under the heading "Exemptions," the form stated that no tax need be paid "for carriages or *motors* kept but not used at any time within the year." Now the word "motors" is omitted, and the clause reads, "for carriages laid by but not used at any time within the year." This looks as if the tax gatherers wish to try and squeeze more money from the motorist by charging for motor bicycles kept but not used. Is this legal? The unwary may take it to be so and pay extra.

NON-DOCILE.

[Motor cycles and cars kept but not used at any time within the year are exempt. The term "carriage" means any carriage drawn by a horse, etc., or propelled upon a road.—ED.]

Sir,—Enclosed is some correspondence regarding an application to Ayrshire for registration of a motor cycle. I trust it will be of interest.

MOTOSACOCHE.

County Buildings, Ayr.
January 16th, 1912.

MOTOR CAR ACTS.

Dear Sir,—I am in receipt of your application for the registration of a motor cycle and postal order for 5s. in payment of the fee.

However, since you are residing at Streatham, application should be made to the County Clerk, Spring Gardens, S.W. I return the postal order and form which you sent.

Yours faithfully,
(Signed) ———.
Streatham, S.W.,
January 18th, 1912.

The County Clerk,
County Buildings, Ayr.

Dear Sir,—I am again sending you herewith the form for registration of motor cycle and P.O. for 5s. which you have returned to me with the erroneous remark that these "should be sent to the County Clerk, London, S.W."

Please note that I do *not* intend giving any of my licences to London.

To enlighten you I would mention that London alone had no less than twenty-three police traps in 1910, which number increased to 175 during 1911.

For your future guidance please note that the law allows all licences, whether for dog, guns, game, men servants, motors etc., (with but *one* exception, "driving licence"), to be paid into *any county or county borough in the kingdom.*

Please therefore send me a registration number for my motor cycle with as little delay as possible.

(Signed) ———.

The Stream-line Body on Racing Motor Cycles.

Sir,—The illustrations on pages 56-57 of last week's issue of *The Motor Cycle* greatly interest me, as I think there is more in the idea than one would think from casual observance. I can remember having great talks with W. E. Cook when he was at the height of his racing fame, on the subject of wind cutting bodies and *disc wheels*, which, I think, are very important. He said he thought they would certainly increase speed, but that side gusts so peculiar to Brooklands, especially just after going under the members' bridge, would have a tendency to blow one out of one's track or course. I shall certainly try the idea myself this year. I am certain that it will increase existing speed records.

HARRY BASHALL.

Multi-pole Sparking Plugs.

Sir,—Perhaps my experience will prove interesting to those of your readers who hesitate to fit the Lodge double-pole plug in conjunction with magneto ignition. I have used this excellent fitting with both Bosch and Simms magnetos and neither has suffered in the least. To overcome the difficulty which some appear to have experienced in regard to ease of starting, it is a very simple matter to fit an arrangement for shorting the ordinary plug for starting purposes, to be out of action when the rider is comfortably seated. This arrangement has the advantage of showing the difference in running, *whilst running*, between the two-spark and single-spark systems. I have not experienced any difficulty in regard to starting, provided the points of *both plugs* are set as closely as possible without actually touching. The best positions for the plugs are, one over the inlet valve and the other in the combustion chamber, not both in the valve chamber. As complete combustion takes place in approximately half the time with the two sparks, the ignition must not be quite so much advanced as when only a single pole plug is used. W. J. LANCASTER.

A High Speed Passenger Trial.

Sir,—"Ixion" in his note on a high-speed passenger reliability trial appears to suggest as his impression that the future of designs in the "sociable" line is not bright. I cannot agree with this sentiment. After an experience of motor cycling which must be nearly as long as his own, I am slowly being forced to the conclusion that motor cycles of the two-wheeled pattern must always be handicapped by a drawback that it seems impossible to eliminate. They do not give the rider sufficient protection from dust or dirt. The serious all-weather rider must be prepared to find himself not infrequently at the end of a long journey in a state of filth more or less abhorrent to most. To the great and increasing army of motor cyclists who are doctors, commercial travellers, or other men of business, this is a matter of vital importance. To the better class of motor cyclists who can afford an increase in first cost of £20-£30 a vehicle which will give extra comfort and protection must always be interesting and acceptable if it is as speedy as the present motor cycle.

"Ixion" raises the objection to a T.T. race that designs are not sufficiently stereotyped. Unless he belongs to that school who believe only in stock-type races, he should be with me when I say that races are intended to lead to a standardisation in design. I cannot remember that in the early days of Continental racing the organisers waited for any stereotyping process. Steam cars, petrol cars, bicycle, tricycle, all raced together. Why a handicap? We ask designers to produce a vehicle to replace the average high-power sidecar outfit. The cardinal points are, therefore, well-known and agreed upon:

1. Price must not be more than £90.
2. Weight must not be more than 3 cwt.
3. Vehicle must carry passengers side by side. Let us throw these at the designers to worry out in the way each thinks best. The race will decide.

His suggested Brooklands trial would undoubtedly be a very fine thing as a preliminary blending, but nothing could equal the T.T. race as a test of questions in stability and other details which are as yet undecided. If the sociables were allowed to race with the junior machines no one would be inconvenienced, for the first year or two at any rate, as presumably the number of entrants who could go to the expense would be small. It would, no doubt, be increased if a preliminary Brooklands trial were held. H.M.

Sir,—In view of the forthcoming T.T. races, I should like to back up the suggestion which has already appeared in your paper, namely, the inclusion of a sidecar race in the T.T. programme.

Sidecars are now so popular that a race of this description would be extremely useful, as it would tend to produce strong yet light sidecar axles and connections. It would also afford a thorough test for variable gears.

I should like to hear the opinions of others on this matter.

JUNIUS.

Hill-climbing.

Sir,—Apparently "Fair Play" has more confidence in his judgment of what is possible for a motor to climb than he has of your last week's correspondent's veracity.

I hope that in the near future this confidence may be shaken and that the Clyno may be the cause.

In reply to Mr. F. Smith I do not live in the Lake District, but am often there, and should be writing this letter from there but for the heavy snowfalls.

The early spring is the best time to climb Honister, as later it is much cut up by traffic.

I should be delighted to occupy the Clyno's sidecar and be able to verify its success. H. NEWMAN.

Are Provincial Shows Wanted?

Sir,—At the present time manufacturers would be doing service to themselves and the trade generally by waiving, for one year at any rate, any rigid rule they may have as to restricting their exhibiting to one show per annum.

The present time is one of unusual interest and enthusiasm on the part of the general public towards motor cycling. The trade will miss valuable advertising and commercial advantages by not holding a special show in the North of England in addition to the one already held in London.

The rule restricting exhibitions to one per anoum may be a useful one, so long as its operation works only towards preventing reckless expenditure, but the rule becomes a mischievous one when it prevents expenditure that will be profitable for all—profitable for the manufacturers, for the retailers, and for the public.

There are thousands of motor cyclists in the North to whom the inconvenience of a journey to London has been a bar, furthermore, beyond these existing enthusiasts, there is an even larger number of the non-riding public with sufficient interest in the pastime to tempt them to look round an exhibition if sufficiently near to them, but who would not journey specially from the North to Olympia.

The effect of a local exhibition upon the minds of these waverers would bring sufficient reward to the trade for any expense and trouble.

THE COLMORE MOTOR CYCLE DEPOT.

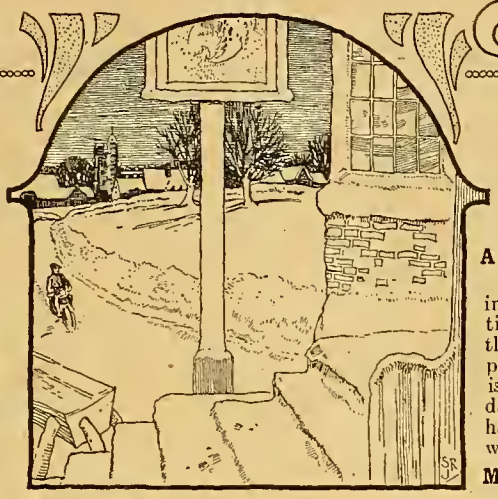
Silence and Silencers.

Sir,—As the initials used by your correspondent on the above subject in the last issue are the same as my own, I feel compelled to enter into the discussion to prevent misapprehension amongst my numerous motor cycling friends.

It can be admitted that a very small number of motor cyclists do ride with open exhausts, but to condemn the whole from this is very unfair; then again to state there is no improvement in silencers since 1907 is too sweeping. There are so many motor cycles that are efficiently silenced and without undue back pressure, it would need a large amount of space to detail them, but I will mention my 1912 Rex de Luxe, which with its long exhaust pipe is reasonably silent, but to show that manufacturers are dealing with this problem seriously, I may say that the manager of the Rex Co. informs me that they are experimenting with an exhaust box to fit on the end of the long pipe, and this will, in my opinion, eliminate all noise from the exhaust.

The suggested new law on cut-outs will probably mean another way in which the police can show their "regard" for the motorist, or should I say the motorist's pocket—one more addition to the many burdens of the motorists, if it is to be dealt with by the police in a like manner to such technical offences as exceeding the speed limit, non-production of licence, etc. A. H. PRIESTLEY.

CURRENT CHAT



TIME TO LIGHT LAMPS.

Jannary 25	...	...	5.32 p.m.
,, 27	...	...	5.36 ,,
,, 29	...	...	5.39 ,,
,, 31	...	...	5.43 ,,

"The Motor Cycle" Spring Number.

Although the weather at the time of writing is not of a spring-like nature, we hope for improved riding conditions by March 21st, when the Spring Number of this journal will be published. Particulars of the contents will be announced at a later date.

Lecture at Leeds.

Mr. V. A. Holroyd gave a lecture on motor cycles before the members of the Leeds M.C.C. on Friday last. The lecturer, who was well received, illustrated his remarks by lantern slides, some of which were reproductions of photographs which have appeared in these pages.

Winter Trial in Derbyshire.

The Derby and District M.C.C. winter trial for the Russell Challenge Cup was run on Saturday last. Seventeen entries were received, but, in face of the appalling road conditions caused by the blizzard, none except the boldest spirits came to the start. The course was a circular one of twenty-five and a half miles, to be covered three times, and the speed fixed was eighteen miles per hour. G. Brough (6 Brough) proved an easy winner, E. Russell (3½ Russell) being second.

A Hill-climb in Ceylon.

A most interesting event took place on Saturday, December 23rd, 1911, when the Ceylon M.C.C. held a hill-climbing competition on the Kadugannawa Pass. Steep gradients of any length are difficult to find in Ceylon, and this hill was chosen on account of its curves. A feature of the competition was the splendid riding of T. F. Lucas (T.T. Triumph). Both he and R. Forrest (Triumph) took the corners particularly well. Results:

Class A (lightweights).—T. B. Stewart (w.o.)

Class B (under 520 c.c.)—1, T. F. Lucas (T.T. Triumph); 2, R. Forrest (Triumph); 3, E. Brown (Triumph).

Class C (single-geared machines only).—1, Lucas (T.T. Triumph); 2, Brown (Triumph); 3, Forrest (Triumph).

Class D (under 800 c.c.)—1, Lucas (T.T. Triumph); 2, Joliffe (6 Bat); 3, Gardner (Triumph).

Class E (under 1,000 c.c.)—1, Lucas (T.T. Triumph) and Northway (6 Bat); 3, Joliffe (6 Bat); 4, Forrest and Gardner (Triumph).

Only two entered for the race open to all comers, D. J. Maitland (twin Bat) and Lucas (T.T. Triumph). This was a close race, until Lucas got into a rut and fell.

The last race, for slowest time, was won by A. T. G. Gardner (5 F.N.), Traves (P. and M.) being second, and Joliffe (6 Bat) third.

French Easter Trial.

The A.C.C.F. two days' trial, April 7th and 8th, at Easter comprises a circular course near Paris, and is called the Circuit de Paris. The stopping place for the night is Compiègne. The total distance of the two days' runs is 337 miles.

Gradient of Stoney Brow.

It has been pointed out to us that Stoney Brow, Manchester, recently climbed by H. Reed on a Dot sidecar with three passengers, is steeper than 1 in 7, and is really 1 in 4. Our local correspondent interviewed the city surveyor of Manchester on the subject, and he confirms our statement, but the authorities will now have the hill surveyed again.

French Riders and Variable Gears.

Inspired by the performances of British machines in last year's Circuit du Rhone, the Lyons M.C.C. will, we believe, for the first time in France, award special prizes and organise separate classes for motor bicycles with change speed gears and clutches in its International Touring Trial on April 28th.

SPECIAL FEATURES.

QUARTERLY RELIABILITY TRIAL (Illustrated).

ENGINE POSITION.

EXPERIMENTS WITH HYDROGEN PEROXIDE.

A Warning.

We understand that the "Test Hill" in Richmond Park will be under observation in future on Sundays, and that as the hill is not long enough for trapping purposes, summonses will probably be issued for "riding to the common danger." Motor cyclists who are in the habit of trying machines on the hill are warned not to travel too fast.

Military Motor Cyclists.

There are three vacancies in the East Lancashire Royal Engineer Telegraph Company, whose headquarters are at Seymour Grove, Old Trafford, Manchester. An allowance of £6 10s. per annum is made for the maintenance of a motor cycle during camp. Further particulars may be obtained from headquarters or from Mr. G. A. Moore, M.I.H., 10, Crofton Street, Whitworth Park, Manchester.

Exeter to Penzance and Back.

Members of the Exeter and District M.C.C. took part in a winter reliability trial to Penzance and back—a distance of 230 odd miles—on Saturday last. The Okehampton road was in a very bad state, but the surface improved as Cornwall was approached. There were many retirements owing to various causes. Finally, Exeter was reached to the schedule of 20 m.p.h. by two competitors, J. A. Neumann and S. J. Saunders, who both rode 3½ T.T. Rudges, and, subject to confirmation, tied for first place. Mr. Neumann, who also won a gold medal in the London-Exeter run, considers the trial was much more severe than the M.C.C. event, owing to the state of the roads and the higher schedule speed.

DERBY AND DISTRICT M.C.C. WINTER RUN.



Competitors near Cross o' th' Hands, Wirksworth, where the banks of snow were seven or eight feet high. Geo. Brough, the winner, is the third rider from the left.

The Tourist Trophy Fund.

We have received a cheque for £5 from Mr. C. H. Hitchen, of Morecambe, as a contribution towards the Tourist Trophy Fund The amount has been forwarded to the Secretary of the Auto Cycle Union.

Irish Riders and the T.T. Race.

Irish riders will be disappointed if the T.T. race be held in France this year The Isle of Man is so conveniently accessible from Ireland that, so far as the Emerald Isle is concerned, Manxland is the better venue.

Yorkshire Road Improvements.

The Stockton Rural Council, who have in recent years done a very great deal in the direction of improving sharp turns and dangerous corners in their area, are still proceeding with this work, and have just completed a splendid improvement at Hartburn, where there were two exceedingly dangerous turns. A new road has been constructed round the back of the village, making an almost straight road past the village on the road from Stockton to Darlington. Two other corners are to be rounded off, Mr. R. T. Hett, on behalf of the owners of the Norton Estate, having given a piece of land on the road between Norton Hardwick and Carlton Junction Railway bridge, and the Stockton Grange Estate Co. having made a similar gift of a piece of land at the first pay gate on the Durham road for this purpose. The latter is a very important and much needed improvement, as a motor cyclist was killed there about a year ago through a collision with a car at the corner, which prevented the drivers from seeing each other till too late.

Circuit du Rhone, 1912.

The Lyons Motor Cycle Club has formulated an ambitious programme for this year. Among the events of interest to British riders are April 28th International Touring Trial, July or August Circuit du Rhone. The latter was won last year by a British rider on a British machine when the North-West London M.C.C. members went touring to the South of France.

FUTURE EVENTS

Feb. 17.—Sutton Coldfield A.C. Open One Day Trial.
Mar. 2.—A.C.U. Open One Day Trial.
" 23.—B.M.C.R.C. Race Meeting.
" 23—Herts. County A.C. Open Quarterly Trial.
" 30.—Derby and District M.C.C. Open Hill-climb.
Apl. 5-8.—N.W. London and Herts. County M.C.C. Joint Trial and Open Hill-climb (Yorks.) and Ladies' Competition.
" 8.—Westmorland M.C.C. Open Hill-climb on Brigsteer Brow
" 13.—Oxford M.C.C. Open Hill-climb

The Motor Cycle in India.

From an authoritative source we learn that the motor cycle was very much in evidence at the Delhi Durbar. The use of motor cycles in India has been fairly popular, dating from the early days of the pastime, a sufficient proof of this being provided by the descriptions and illustrations of tours and rides undertaken in that country which have appeared in these pages.

FIRST QUARTERLY TRIAL OF 1912, ORGANISED BY THE HERTS. COUNTY A.C. (MOTOR CYCLE SECTION).



Competitors passing through Rickmansworth. Note the rain-soddened road surface.

Auto Cycle Union Notes.

THE SIX DAYS' TRIALS.—Mr. Potter, secretary of the Taunton M.C.C., and Mr. Goldsworthy Crump, the Taunton district surveyor, recently attended a meeting of the A.C.U. Competitions Committee, and offered some valuable suggestions regarding the route and the general arrangements of the trial. Mr. Goldsworthy Crump's knowledge of the roads is of the greatest value. He is a keen motor cyclist of many years' standing. Mr. Potter offered to procure a cup to be awarded for the slowest clean ascent of Porlock on a motor bicycle.

STARTING AT RACES AND HILL-CLIMBS.—An affiliated club recently asked the Competitions Committee of the Auto Cycle Union for its ruling as to whether or not motor bicycles fitted with free engine clutches or two-speed gears might be brought to the starting line at a hill-climb with the engines running. The A.C.U. desires it to be known that it is wholly in agreement with this procedure.

THE QUADCAR QUESTION.—A letter was sent recently by the Auto Cycle Union to the R.A.C., pointing out to that body that the new type of vehicle recently evolved, which is generally known as a quadcar, legally came under the motor car category, and that, presuming it were desirable that the development of this vehicle should be encouraged, whether the R.A.C. would consider the running of trials and competitions with this object. A reply has been received to the effect that the R.A.C. was of the opinion that its Technical Committee and the A.C.U. Competitions Committee should discuss the matter at a joint conference.

SILENCER TRIAL.—A special sub-committee, consisting of Messrs. J. W. C. Brooker, E. M. P. Boileau, A. Sharp, V. Hart, H. P. E. Harding, Col. H. C. L. Holden, R.A., F.R.S., and Dr. Watson, F.R.S., has been elected to draw up details and fix a date.

SIX DAYS' TRIAL AND BROOKLANDS.—The A.C.U., after further consideration, has definitely decided to abandon the idea of finishing the Six Days' Trial at Brooklands, feeling that it would be undesirable to leave Taunton before the full six days had been completed, since so cordial an invitation had been received from the inhabitants of the Somerset capital, from the Mayor downwards. Consequently the kind offer of the Stewart-Precision Carburetter Co. to defray the cost, mentioned in our last issue, cannot be accepted. However, in 1913 we understand the Brooklands proposal will receive further careful consideration before any centre is decided upon.

INTERNATIONAL COMPETITIONS.—The Auto Cycle Union has decided to send a team of riders to compete in the A.C.C.F. Easter reliability trial. Every endeavour will be made to organise the visit on economical lines, and with a view to making the competitors as comfortable as possible. Entries, by the request of the Auto Cycle Club of France, will be confined to members of the Union and of clubs affiliated to it. Intending competitors should send in their names to the Secretary of the Auto Cycle Union, 89, Pall Mall, S.W. The event is the outcome of W. Cooper's suggestion.

The Auto Cycle Union Ninth Annual Dinner.

ON Saturday evening last the ninth annual dinner of the Auto Cycle Union was held at the Waldorf Hotel. The event was one of the most successful of its kind ever held. The arrangements were excellent. as separate tables were placed in front of the high table, the speeches were good and to the point, and the musical entertainment was of the highest order. For the latter Mr. W. Rouse was responsible.

After the loyal toasts, Mr. G. D. Dean, legal representative of the R.A.C. and A.C.U., rose to propose "The Auto Cycle Union." He began his remarks by mentioning how in his early motoring days he had had the greatest contempt for the motor cycle, and how, when it had at last occurred to him that a motor bicycle would be handy for getting quickly from one place to another, he had tried one which had been procured by Mr. Straight, and in the use of which he had received instructions from Mr. Beasley. He had ridden it to Grantham and other places. Then, and only then, did he realise how much the A.C.U. had done to perfect the modern motor cycle. The A.C.U.'s work was not, however, finished. Thinking of the Holywell Hill test at St. Albans, which took place that very morning, why, Mr. Dean asked, could not single-geared motor bicycles be made to climb steep hills slowly, and why could not further improvements be made in silencers? Touching on the benefits members received from the governing body, the speaker mentioned the case of a member whose subscription was but 5s. per annum costing the A.C.U. £25 in legal expenses. Not only did it cost him nothing to win his case, but he saved the cost of his defence, and had he lost his opponent's solicitor's fees would also have been saved to him.

Definition of a Motor Cycle.

Mr. Robert Todd (chairman), in reply, mentioned in the course of his speech the difficulty of defining what a motor cycle was. The matter had come before the R.A.C. committee, a member of which said the definition was an easy one. He was asked to define a motor cycle, but broke down hopelessly in the attempt, and the committee gave it up. There was a new type of light motor vehicle (quadcars). If it were decided to be a motor cycle, the A.C.U. would look after its interests; if it were decided to be a car, the R.A.C. would further its development. At present no one knew. Mr. Dean had grumbled because a motor bicycle did not like going up a hill at ten miles an hour. In his (the speaker's) very early days, they thought it lucky if the machine would go uphill at *any* miles an hour. Speaking of the growth of the A.C.U., at the end of 1910 the total membership was 2,700, and now it was 5,000, and still growing. As regards the Tourist Trophy Race, the trophy itself was now in America. That was rather a good thing, emphasising the international aspect of the race. He referred to O. C. Godfrey, the plucky winner, who was present at the dinner. The I.O.M. Highway Board agreed that the race should take place in the island, and recommended the Tynwald Court to grant the necessary permission. Whether that permission were granted or not, the race would be held all the same.

The R.A.C. and its Affiliated Clubs.

Mr. Otto Thomas (*The Motor Cycle*) then proposed the toast of "The Royal Automobile Club and its Affiliated Clubs." Since he had been a member of the A.C.U. he had realised more and more how much that body had been indebted to the R.A.C., and how closely the affiliated clubs and the individual members of the Union were bound to the parent body.

Speaking of the R.A.C. members who had given valuable assistance to the A.C.U., there was Mr. Robert Todd, the chairman, whom the speaker regretted he did not see often enough at committee meetings; Colonel Holden, whose technical knowledge had been of such great value, and who had made a study of the motor bicycle from early times; Mr. J. R. Nisbet, whose level-headed views were so heartily welcomed on the committee; Mr. Beevor, whose weighty remarks were often heard on these occasions; Mr. J. W. Orde, who was always ready and anxious to help the A.C.U.; and Mr. G. D. Dean, who had helped so many members out of legal scrapes. Referring to the growth of the Auto Cycle Union, he mentioned how its increasing prosperity had been largely due to the work of its secretary, Mr. F. Straight.

Mr. J. W. Orde, in reply, speaking of Mr. Dean's early motor cycle experiences, said that he himself had not been so lucky; he had had to teach himself how to use his machine, and he had done even better—he had taught someone else. This was in 1903, before the Gordon-Bennett race in Ireland. The secretary of the Kildare County Council had borrowed his 2¼ h.p. motor bicycle, and had received instructions in all points except as regards stopping. He had therefore had to travel miles beyond his destination, as he did not know how to pull up, and had pedalled the machine back against compression, and had arrived more dead than alive.

The Chairman.

In rising to propose the toast of "The Chairman," Colonel Holden, C.B., R.A., F.R.S., said that Mr. Dean had mentioned how the work of the A.C.U. had perfected the modern motor bicycle. Mr. Todd, on the other hand, had worked towards the perfection of the Auto Cycle Union. Referring to the able speech of Mr. Otto Thomas, that gentleman, he said, had adopted the principle of the "Otto" cycle, and had exhausted his subject. He thought that ten-mile speed limits up hill should be abolished, as an excess of that speed up hill was always safe.

Mr. Todd suitably replied, and the proceedings finished with the singing of Auld Lang Syne.



SATURDAY'S QUARTERLY TRIAL (NEW SERIES). Three of the sidecar machines leaving Tring.

ENGLISH-DUTCH RELIABILITY TRIAL.

NOW that sufficient entries have been received from English motor cyclists to compose three teams in the above International contest, to be held in Holland on August 5th, we may subdivide the entries into the different classes in order to gain some idea of the possible formation of the English amateur and trade sections. The actual teams will be chosen from the following:

PRIVATE OWNERS.

Class A. Machines up to 340 c.c.	Class B. Machines from 340 c.c. to 500 c.c.	Class C. Machines from 500 to 1,000 c.c.
J. C. Bennett (2¾ Douglas)	Geoffrey Smith (3½ Rudge)	W. Cooper (3½ Bradbury)
Mitchell (2¾ Douglas)	Vernon Taylor (3½ Rudge)	L. A. Paddeley (7 Indian)
H. M. Carter (2¾ Douglas)	Seymour Smith (3½ Norton)	W. O. Oldman (Bat)
	Fred Dover (3½ Premier)	C. W. Wilson (Morgan runabout)
	A. E. Uffleman (3½ Humber)	Gordon B. McKechnie (8 Dot-Jap)
	C. C. Cooke (3½ Triumph)	André Marheim (T.A.C. sidecar)
	Horatio Wallis (1912 Triumph)	E. B. Ware (Chater-Lea sc.)
	Richard Cussons (3½ New Hudson)	

F. C. Wasley and F. A. Hardy, machines not stated.

TRADE TEAM.

Class A. Machines up to 340 c.c.	Class B. Machines from 340 c.c. to 500 c.c.	Class C. Machines from 500 to 1,000 c.c.
W. W. Douglas (2¾ Douglas)	W. Pratt (3½ P. and M.)	F. W. Barnes (6 Zerith)
R. Holloway (2½ Premier)	J. Woodhouse (3½ Precision)	Hugh Gibson (3½ Bradbury)
Sam Wright (2¾ Humber)	W. F. Newsome (3½ Triumph)	W. H. Wells (7 Indian)
H. V. Colver (2¾ Enfield)	Roy W. Walker (3½ New Hudson)	Frank Smith (5-6 Clyno)
R. G. Mundy (2½ Singer)	F. C. North (3½ Ariel)	R. Lord (6 Rex sidette)
H. Graham Dixon (2¾ New Hudson)	Geo. Brough (3½ Brough)	
J. S. Holroyd (Motosacoche)		

LADIES' SECTION.

Mrs. A. Wade (3¾ Scott) | Mrs. C. C. Cooke (3½ Triumph)

Entrants are requested to state the h.p. and capacity of their machines.

It has been suggested to the organising body—the Dutch Motor Cycle Club—that the teams be increased to nine or twelve, seeing that the event is proving so popular. In any case it is possible that some form of competition will be evolved by the Dutch Club for those entrants who are anxious to cross over to Holland with the English party, whether chosen as one of the team or not.

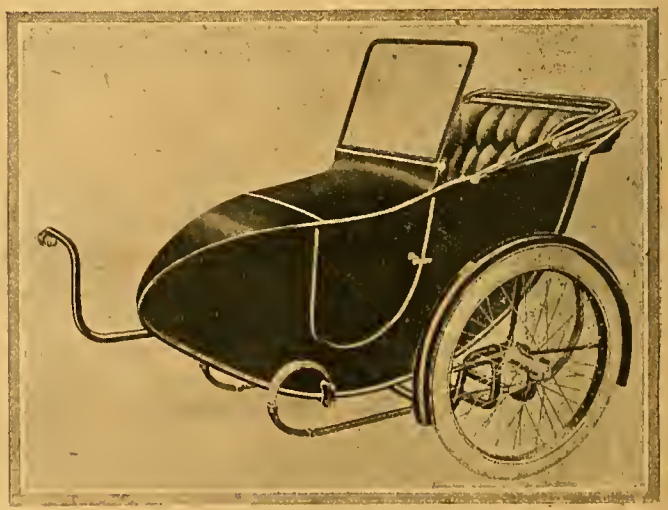
North-countrymen will especially be interested in the brochures which the Hull and Netherlands Steamship Co., Ltd., are circulating among the entrants. They contain much information of value to motorists intending to visit Holland. The Hull-Rotterdam route is certainly a good alternative, as there is a daily service, and the first-class return saloon fare is only 20s., whilst the cost of a motor bicycle in the possession of a passenger is 5s. each way. By this route intending competitors and their friends could leave Hull (Riverside Quay) on the Friday night, August 2nd, spend Saturday at their leisure, and stay the night in The Hague at the hotel, where they would meet the Harwich contingent at breakfast on the Sunday morning.

An alternative scheme would be to cross to Rotterdam on the Saturday night, and ride from Rotterdam to The Hague or Scheveningen, and pick up the other party there.

THE LATEST "MILLFORD" SIDECAR.

THERE is an indication that the sidecarist who intends to go in for serious touring will not be satisfied this year with the ordinary protection provided by an apron. Where cost is no consideration, lady passengers usually have a preference for a well-upholstered body with side doors and torpedo front. Popular demand also asks, so we are informed by Mills-Fulford, for a chassis and body with as low a position as possible. This firm has, therefore, applied for the registration of a frame design which we illustrate. This frame enables the body to be slung as close to the ground as is consistent with safety, the actual clearance being 5½in. The body is coach built of three-ply wood and luxuriously upholstered, the front portion being entirely covered in, so that when the hood and screen are up the passenger is protected from the very worst weather. When out of use the screen lies on the top of the torpedo front. The body is carried on the usual type of "Millford" springs at the rear, but in front leaf springs of the "C" type are connected by shackles to the body, which should ensure the utmost comfort for the passenger. The new model is called the "Millford Cabrio," and can also be supplied with other types of bodies than the one illustrated, made of cane or wicker.

Messrs. Mills-Fulford, whose address is Crown Works, Coventry, have just issued a new catalogue.

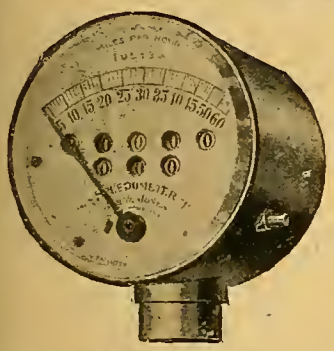


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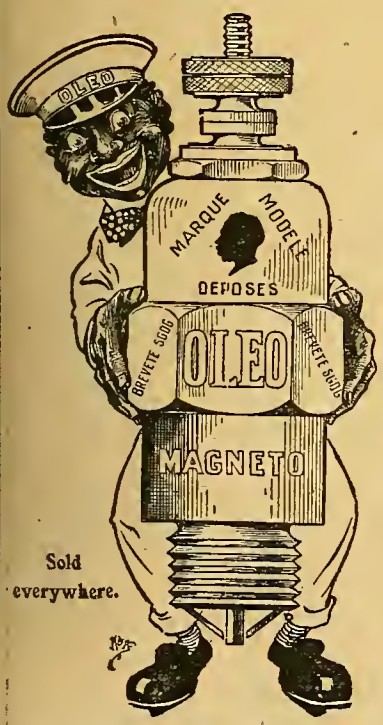
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Thanking you for your KIND HELP.

I am dear Sirs,
Yours faithfully,
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LIVERPOOL Official Agents for Humber and Dot Henry Whitlock and Co., 40, Hope St.

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1908 Triumph Motor, 3½h.p., perfect condition, numerous spares; £26/10.—10, Nunmill St., York.

1910 Triumph Motor Cycle, in splendid condition, with spares, lamp, and horn; price £32/10.

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CARRS, Ltd., Knowsley St., Bury.—1911 Zenith-Gradua, 3½h.p., Whittle belt; £43; nearly new.

CARRS.—Rudge, free engine, 1912; B.S.A., free engine; delivery from stock.

CARRS.—1911 T.A.C., 4-cyl., £43; 1910 Triumph, excellent order.

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SOLE Agents, Triumph, Zenith, Rover, Enfield, Motosacoche, James; immediate delivery. — W. L. Thompson, Ltd., 83, Anlaby Rd., Hull.

EARLY Delivery of 1912 Scotts and Bradburys; in stock 1912 T.T. Bat.—J. H. Dewhirst, Campbell St., Keighley.

4-CYL. F.N., magneto, spring forks, £13/10; 6h.p magneto Zedel, spring forks, £18/10. — Collier, Westgate, Halifax.

IMMEDIATE Delivery of multi-speed frea engine Rudge; splendid sidecar machine.—Ewbank, Castleford.

1911 4-cyl. 3-speed T.A.C., hand starting, foot clutch, bucket seat; £40.—327, Skircoat Green Rd., Halifax.

1911 Lincoln Elk, May; £18/18; any trial here; stamp, reply; first postal order.—Burrowe, clothier, Cudworth.

CORONET SIDE CARS

3½ h.p. ONLY REQUIRED

to take a Coronet Sidecar. We do not build freak models that require a traction engine to haul. Compare with some—ours are half weight but twice as strong. We know what is required.



MODEL C.—£7 2s. 6d.



MODEL A.—£5 5s.



MODEL E.—£7.



MODEL D.—£7 12s. 6d.

Instructive Catalogue post free, giving illustrations and full particulars of all models of Coronel Sidecars. Every model certain to satisfy and save money for buyers. Full of improvements. Quick detachable joints. Latest car pattern mudguards. Wicker, cane, or coach-built bodies. Child's reversible seat. Excellent upholstery.

NOTE front arm which grips main tube of sidecar, which is the only correct mechanical method—nothing lopsided about this attachment.

Delivery from stock to suit TRIUMPHS N.S.U.'s, REXES, P. & M.'s, BRADBURYS, etc.

Discounts to Agents.



TEE BEE LOW SEAT-PILLAR, 5/- each.

GREAT CLEARANCE LINE.

New Dunlops, 28 x 2 and 2¼, wired edges .. 10/6
Dunlops, 28 x 2, beaded, heavy treads 14/9
24 x 2 and 2¼ Beaded Clipper Covers, new .. 8/6
Best Quality Butt-caded Tubes 7/9
150 New Tubes 26 x 2¼..... 5/11
Rubber-studded Covers, best make 25/-

ENGINES:

4 h.p. Twin N.S.U., with Bosch gear-driven magneto, brand new from makers £11 10
4 h.p. Twin N.S.U., with magneto £9 0
3½ h.p. N.S.U., M.O.V. £3 10
3 h.p. FAFNIR, silencer, etc. £3 10
4½ h.p. BUCHET, water-cooled £6 15
9 h.p. DARRACQ, water cooled £9 10
10 h.p. CLEMENT, two cylinder..... £9 10
3½ h.p. REX, M.O.V. £3 10
4½ h.p. PRECISION, new 1912 Model £13 10
1¾ h.p. MINERVA £1 8 | 2½ h.p. DE DION £1 15
3 h.p. QUADRANT £3 0 | 2¾ h.p. MINERVA £3 5

Exchanges entertained.

MAGNETOS. MAGNETOS. MAGNETOS.

We have a large stock of the best makes from 59/6. Your old coil and acc. taken in exchange.

NEW CARBURETTERS FOR OLD.

22/- and your carb. secures a new B. and B. with h.b. control.

20/- and your carburetter secures a new Amac with variable jet and h.b. control.

Delivery per return.

BOOTH'S MOTORIES,
KEIGHLEY MILLS, BEDFORD ST. NORTH
(off Pellon Lane), **HALIFAX.** Tel.: 1062.

MAUDES BARGAINS

THE PORTLAND SIDECAR



Model less apron. £6 6s. model with apron.



£7 7s. model. £8 8s. model.

26 x 2¼ Michelin tyres. Double Cee Springs. Wide mudguard. Three-point suspension. Dropped hearer bar if desired. Double stove enamelled.

Guaranteed twelve months. Need we say more ? ? ?

NOTE ! ! ! Our £8 8s. Model weighs 78 lbs. only, not between 1 and 2 cwts., as suggested.

We have the under-mentioned dates open for delivery for various **1912 Models.**

ALL FULLY GUARANTEED.

RUDGE, 3½ h.p., standard	Ex-stock
RUDGE, 3½ h.p., clutch	Ex-stock
RUDGE, 3½ h.p., multi-speed	March
ZENITH, 3½ h.p., Gradua gear	Ex-stock
ZENITH, 6 h.p., Gradua gear	Jan. 25
DOUGLAS, 2¾ h.p., Model K	Ex-stock
DOUGLAS, 2¾ h.p., Model G	March 9
HUMBER, 2 h.p., 3-speed	Feb.
ROVER, 3½ h.p., clutch model	Feb.
NEW HUDSON, 3½ h.p., 3-speed	Feb.
BRADBURY, 3½ h.p., standard	Ex-stock
BRADBURY, N.S.U. 2-speed	Feb.
BRADBURY, chain drive. 2-speed	March
ENFIELD, sidecar combination	Feb. 14
INDIAN, 7 h.p., 2-speed	Feb. 19
MORGAN Runabout	Feb. 20
BAT, 4 h.p., 2-speed	March 25
BAT, 6 and 8 h.p., two speeds	April 1
SCOTT, 3½ h.p., two-stroke	April 25
A.J.S., 5 h.p., chain drive, 2-speed	May 20
HUMBER, 3½ h.p., two speeds	June 1
REX, 6 h.p., sidette	From stock
REX, 4 h.p., De Luxe	Ex-stock
REX, all other models	10 days
CLYNOS (Halifax stocks only)	Feb.
A.C. Sociables	March 14

List of Second-hand Machines for disposal, continued from other columns.

TRIUMPH, 1908 model, 3½ h.p., frame cut down at rear, XL'All saddle, very low built **£30**

REX Litette, 1911 model, water-cooled, two-seater, chain drive, two speeds, handle starting. This has only been used for fifty miles, and is admirably suited for a tradesman's carrier **£50**

MOTOSACOCHE, 2½ h.p., M.O.V., 1911 model, free engine, Whittle belt, Druid forks, adjustable pulley, as new **£28**

REX, 5 h.p., 1910½, de Luxe, two speeds, Bosch magneto, tyres like new, complete with P.M.C. sidecar **£45**

REX, 1906 model, 5 h.p., just been re-enamelled and plated, handle-bar control, a bargain.. **£14**

J.A.P., 1910, 4 h.p., Chater-Lea frame, Bosch magneto, low built, very fast **£25**

ANTOINE, 5 h.p., twin, very low, fontrests, long handle-bars, coil and accumulator ignition **£14**

We have numerous other machines for disposal. Send us your requirements. Cash or exchange.

CASH OR EXCHANGE

MAUDES' MOTOR MART

136 GT. PORTLAND ST. LONDON W.

MOTOR BICYCLES FOR SALE.

ONE Triumph, 2½h.p., long handle-bars, low, re-bushed, good order; £8.—Baron, 386, Blackburn Rd., Accrington.

HUMBER, 3½h.p., 2-speed, new August, 1911, excellent condition; what offers?—Thos. Bentley, Bolton St., Chorley.

1911 Bradbury, 3½h.p., guaranteed as new, ridden 500 miles, unscratched; £36.—359, Oxford Rd., Manchester.

MINERVA, 2¾h.p., magneto, spring forks, not done 3,000 miles; £15. — Jones. Hurst Nook, St. Annes-on-Sea.

BRAND New 1911 Latest 6h.p. Rex Engine; £12, complete with pulley and inlet pipe.—17, Peel St., Accrington.

3¼h.p. Complexe Rex, less carburetter and oil pump; first cheque £4.—17, Peel St., Accrington.

TRIUMPH, late 1910 clutch model, perfect, tyres as new, spare belt. tools, etc.; £37.—Sykes, Shakespeare St., Southport.

B.S.A., 1911, perfect, £38; torpedo 1911 2½h.p. Precision, B B, Dunlops (2in.), 100 miles only, £28.—Sykes, Southport.

1911 Lincoln Elk, 3½h.p., Bosch magneto, Palmer tyres Druid forks. never been used £30.—Evans, 50, Market St., Wigan.

TRIUMPH (April, 1907), 3½h.p., magneto, excellent throughout, and had little usage; £20.—15, Bradford St. West, Bolton.

ROYAL Enfield, 1910; £26, or near offer; spares, grand order, only run 2,000; got car.—Stevens, Fairfield Rd., Morecambe.

REX, 3½h.p., magneto, Tourist, as new throughout, guaranteed perfect, 26×2¼ non-skid tyres.—Motorist, 22, Belvoir Gardens, Halifax.

MOTO-REVE 2h.p Twin late 1909 Continental front, Clincher back, running order; £18.—R. S. Lucy, Abbey House, Stourport.

7h.p. Peugeot, 2 speeds and free, good condition; sell to highest bidder, or exchange for sidecar and cash.—155. Woodbine St., Salford.

3½h.p. Bradbury, 1911, P. and H. lamp, horn, new Whittle belt, spares, condition like new; £38/10 —Lamb, Queen's Terrace, Quiseley.

HALIFAX.—64 new machines at second-hand prices; accessories free, and expenses paid to cash buyers. —Motors, 16, Westgate, Halifax.

1911 Standard Triumph, new rear cover and Dunlop belt, spare valve, etc., in splendid condition; £38. —Clay, 17, Little Stonegate, York.

FOR Sale, motor cycle, 2½h.p., h.b.c., plated rims, low position, in good running order; £11. — F. Windross, Prospect, Rawdon, nr. Leeds.

NEW 1912 8h.p. Matchless-Jap T.T. Roadster, just delivered in crate; cost £57/16, accept £55; cash wanted.—5. Whittam Av., Marton, Blackpool.

1910 Triumph, thoroughly overhauled, enamelled, like new, with new sidecar; £34/10.—Allen Bros., sidecar specialists, Wellington Rd., Stockport.

1910 Royal Enfield. 2¼h.p., lightweight, just overhauled, like new.—Allen Bros., sidecar specialists, Wellington Rd., Stockport.

BAT, 3½h.p., new July, 1911, absolutely perfect, £33; Indian, 6h.p., free engine model, new 1911, all spares, £45.—Hodgson, 10, Horton Rd., Bradford.

LIVERPOOL Official Agents for Bradbury, Zenith, Singer, Rex, Clyno, Moto-Reve; delivery from stock.—F. C. Jones and Co., 3, Redcross St., Liverpool.

P. and M. and Sidecar, 1910, condition equal to new, £45; B.S.A., new May, 1911, £40; Welbrown sidecar, one month old, £7/10.—Hodgson, 10, Horton Rd., Bradford.

BRADBURY, 3½h.p., new Easter, 1910, perfect condition, needs nothing; trial willingly; 2 belts, handle-bar mirror, lamp, horn, etc.; £28.—Ratcliffe, 20, Princes Rd., Sale.

1911 Premier, £34; 1911 Bradbury, £35; 1910 Triumph, £35; 1910 P and M., £38; 1912 Triumphs, P. and M.'s, Bradburys, Ivy motor cycles.—T. Reed, Nettlesworth.

SEE, Write, or Wire, Geo. Merrick; he's the man for Bradburys; in stock, Rudge, B.S.A., A.J.S., N.S.U., and runabouts.—Merrick's Stores, Listerhills, Bradford. Tel.: 2439.

TRIUMPH, 3½h.p., 1911 clutch model, tyres perfect condition, only used 2,000 miles, condition as new, with complete set of spares; price £43.—Baxter, Waratah, Lower Walton, Warrington.

CLYNOS.—Don't you want one? Take a gentle hint and order one now. They are all wanting them. I can supply promptly; good exchanges.—Potter, Clyno specialist, Leicester Grove, Leeds.

SINCE

A number of motor agents, etc., talk about genuine guaranteed and overhauled second-hand machines, we respectfully suggest that a buyer asks "what facilities they have for *thoroughly* overhauling a motor cycle." Give us a call, see how *we* overhaul a second-hand machine, and *be* satisfied.

WE GUARANTEE EVERY SECOND-HAND MACHINE WE SELL.

A selection from our list of good reliable second hand machines:

DOUGLAS, 1911 model, Model E, two speeds, spring forks, Bosch magneto, good tyres, like new **£38**

PREMIER, 1910 model, 3¾ h.p., twin, Dunlop tyres, Bosch magneto, very fast, and suit sidecar **£32**

N.S.U., 1910 model, 3½ h.p., magneto, good tyres, handle-bar control, spring forks, condition as new **£28**

CALTHORPE, 1911 model, 3½ h.p., Precision engine, Hutchinson tyres, not done 1,000 miles, magneto, handle-bar control **£38**

REX, 1911 model, 5 h.p., tourist, condition equal to new, M.O.V., spring forks, B. & B. carburetter, handle-bar control, Bosch magneto, Rey whistle, trials machine, and gold medal winner **£35**

REX, 3½ h.p., 1911 model, like new, cone clutch model, only used 100 miles for trials, perfect **£38**

V.S., 1910 model, 7-9 h.p., two speeds, Nala gear, Truffault spring forks, finished cream, Bosch magneto, very fine sidecar mount, just been thoroughly overhauled **£39**

SCOTT, two-stroke, two speeds, free engine, spring forks, Palmer tyres, water-cooled head, spring footboards **£25**

MATCHLESS, 1910 model, 8 h.p., side valves, J.A.P. engine, car tyre rear wheel, cream finish, very fast, admirable sidecar mount, special price **£35**

REX, 1907 model, 5 h.p., twin-cylinder, free engine, spring forks, enamel and plating as new, a bargain **£16**

N.S.U., 1908 model, 5½ h.p., twin, very low built, magneto, two speeds, free engine, admirable sidecar machine **£28**

HUMBER, 1911 model, 3½ h.p., two speeds, free engine, handle starting, had very little and very careful usage **£37**

F.N., 1909 model, four-cylinder, spring forks, Bosch magneto, shaft drive, complete with rigid sidecar, fine turnout **£30**

REX, 1908 model, 3½ h.p., two speeds, handle starting, Bosch magneto, spring forks, fine sidecar mount **£22**

N.S.U., 1908 model, 3½ h.p., very low built, spring forks, magneto **£20**

PHOENIX, quad car, 8 h.p., Fafnir engine two speeds, wheel steering, reverse, Bosch magneto **£30**

V.S., 1908 model, 5 h.p., twin, just been overhauled, Truffault forks, Bosch magneto, for spot cash **£25**

PEUGEOT, 7-9 h.p., very low built, Bosch magneto, pan seat, 2½in. tyres, very powerful .. **£26**

ARIEL, 1910 model, 3½ h.p., free engine, M.O.V., Bosch magneto, very fine solo mount **£30**

REX, sidette, 1911 model, 7 h.p., two speeds, Bosch magneto, handle starting, coach-built, sidecar **£52**

HUMBER, 1909½ model, 3½ h.p., two speeds, handle starting, very fine si lecar mount .. **£31**

REX, 1911 model, 7 h.p., two speeds, handle starting, spring forks, Bosch magneto, very fine sidecar mount **£49**

MINERVA, 4½ h.p. twin, M.O.V., steel-studded rear tyre, spring forks, just been overhauled, plated and re-enamelled **£21**

TRIUMPH, 1909 model, magneto, spring forks, very fine solo mount **£30**

REX, 1908, 5 h.p., 2-speed, De Luxe, magneto, spring forks, complete with sidecar **£31**

T.A.C., 1911 model, 7 h.p., four-cylinder, three speeds, handle starting, worm drive, magneto **£45**

TRIUMPH, 1909 model, 3½ h.p., two speeds, free engine, Bosch magneto, complete with Lucas lamp, Millford sidecar **£43**

REX, 1910 model, 5 h.p., two speeds, magneto, spring forks, very fast and good sidecar machine **£40**

We have numerous other machines for disposal. Send us your requirements. Cash or exchange.

MAUDES MOTOR MART,

136 GREAT PORTLAND STREET,

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Telephone 552 Mayfair

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(LISTS POST FREE)

WHY

do our Sidecar Springs resemble a woman?

BECAUSE

They WILL NOT "SHUT-UP."

For STRENGTH and RELIABILITY

TRY ONE OF OUR SIDECARS.

GUARANTEED TWELVE MONTHS.

From **5 Guineas**, and we fit our Patent Spring Detachable Couplings, which were acknowledged at the Olympia Show to be the finest yet on the market. Write for particulars.

FOR IMMEDIATE DELIVERY.

RUDGE 1912 Standard, from stock £48 15

ALL MACHINES GUARANTEED.

RUDGE, free engine, 1911, in splendid condition throughout, as new, Palmer Cord tyres	£45 0
RADBURY standard 1911 model, unscratched, beautiful condition	£39 0
UDGE racing model, 1911, all improvements, very speedy, first-class condition	£40 0
.S.U., 4½ h.p., twin, 2-speed gear, Bosch magneto, very fast	£24 0
.S.U., 3½ h.p., 1908, magneto, h.b.c., good and sound throughout	£21 0
UMBER, 3½ h.p., 2 speeds, Bosch magneto, handle starting, free engine, etc.	£29 0
.S.U., 3 h.p., magneto, N.S.U. patent carburetter, very good tyres	£18 0
EX, 1911, brand new, twin, all improvements, standard	£38 0
EX, 5 h.p., 1909, spring forks, adjustable pulley	£26 0
EX DE LUXE, 1909, 5-6 h.p., 2-speed gear, variable pulley, springs	£33 0
EX Speed King, 3½ h.p., especially built for the Isle of Man Races, chain drive	£25 0
EX DE LUXE, 5 h.p., Bosch, twin-cylinder, handle starting	£28 0
IP, Peugeot engine, low built, racy	£12 0
LOYD'S, 2 h.p., smartly finished	£8 0
OVANCE, 6 h.p., magneto, twin-cylioder, B. and B. carburetter	£18 0
ORTLAND, Peugeot engine, 3½ h.p., 1911 model, Bosch magneto, rubber non-skid tyres, little and carefully used	£32 0
EX, 5-6 h.p., 1911, M.O. valves, 2 speeds, free engine, special built sidecar, very luxurious	£42 10
UMBER, 3½ h.p., Roc 2 speeds, handle starting, and free engine	£34 0
EX DE LUXE, 5-6 h.p., 1909, 2 speeds, variable pulley	£38 0
INERVA, 8 h.p., Roc 2 speeds, handle starting, torpedo tank, grey finish, all improvements, Mills-Fulford sidecar	£47 10
h.p. **CENTAUR**, P. and M. two-speed gear, complete with sidecar, splendid running order	£25 0
UADRANT, 3½ h.p., good sidecar	£15 0

MISCELLANEOUS.

911 Brown and Barlow Carburetter	25/-
ills-Fulford Sidecar, in splendid condition	£5 0
ost Horns, Lucas pattern, very loud and musical	12/6
enerators, burn five hours	5/6
ew Fuller Midget Coil	7/3
'ide Mudguards, 3½in., with stays	2/3
" " 4½in. "	2/11
ong Handle-bars, dropped ends	8/-
iller Sidecar, quick-detachable lugs	£4 5
ortland Sidecar, as new	£4 10
ew Goggles, usually sold at 2/6	1/6
ew Bosch Plugs	3.6

SCOTT'S,

Victoria Motor House,

OWELL STREET, HALIFAX.

elephone—432 National.

elegrams—"SCOTT, Powell Street, Halifax."

MOTOR BICYCLES FOR SALE.

MINERVA, 2¾h.p., 26×2 rubber-studded back tyre, in good running order; sell, haragain, £8.—Brown's, 12, Bull Ring, Birmingnam.

1911 Rex de Luxe, 6h.p. twin, m.o.v., free engine, 2 speeds, Bosch, spring forks, excellent condition; £40.—12, Bull Ring, Birmingham.

MOTOR Cycle, 3½h.p., m.o.v., Bosch, magneto, h.b.c. carburetter, spring forks; £12/10, bargain.—12, Bull Ring, Birmingham.

F.N., 4-cyl., Bosch magneto, spring forks, gear driven, B. and B. h.b.c. carburetter, Continental tyres; sell, bargain, £16/10.—Brown's, 12, Bull Ring, Birmingham.

REX Twin, 5-6h.p., spring forks, Cantilever seat pillar, free engine, 2 speeds, 26×2½ Continental tyres; sacrifice, £10/10.—12, Bull Ring, Birmingham.

ANTOINE, 3½h.p., m.o.v., magneto, sloping back frame, h.b.c. carburetter; bargain, £15/10. — 12, Bull Ring, Birmingham.

TRIUMPH, 1909, real good order, lamp, horn, large valise, spares, Cowey, new belt; £29. — 12, St Peter's Rd., Leicester.

SPEED King, 1911 model, 7h.p., m.o.v., Bosch magneto, very fast; sell bargain, £27.—36, Third Av., Selly Park, Birmingham.

PREMIER, 1911, 3½h.p., free engine, accessories, spares, etc., perfect condition throughout, tyres good; £40.—71, Aylestone Rd., Leicester.

3½h.p. Rover, new Rom tyre and new cyl., guaranteed excellent order; £12/10; exchanges considered.—Tomlinson, Uppingham, Rutland.

REX, 1910, twin-cyl., 6h.p., free engine, Palmer cord tyres, spring forks and seat pillar, condition as new; £31.—103, Heeley Rd., Selly Oak.

TRIUMPH, late 1909, carefully used, spare footrests, backrest, exhaust whistle, horn, 1911 fitments; £30, offers.—5, Edgbaston St., Birmingham.

TRIUMPH, 1910, just thoroughly overhauled, perfect condition, large number spares and accessories; expert examination invited; £32.—L.P., Turner Arms, Wragby.

ENFIELD, 2¾h.p., lightweight motor cycle, 1911, in perfect condition, Dunlop tyres, complete, horn, tools, etc.; £25.—C. Bailey, dairyman, 56, Dryden St., Kettering.

REX de Luxe, 1910 twin, Bosch magneto, free engine, 2-speed gear, spring forks, equal to new; sacrifice £37.—Edwards, 66, Walford Rd., Sparkbrook, Birmingham.

TRIUMPH, 1911 clutch model, T.T. engine, many 1912 improvements, as new, with 50/- lamp, horn, and spares; £48.—Box No. 9,405, *The Motor Cycle* Offices, Coventry.

1911 Tourist Trophy Twin Humber, won Private Owners' Cup, not been 500 miles, 3-speed, free engine, very fast, guaranteed; offers.—Percy Johnson, Hounds Gate, Nottingham.

1911 Free Engine Triumph, several 1912 improvements, and 1912 Millford cane torpedo front sidecar, lamp, horn, and accessories; cost £70, accept £56.—Box No. 9,406, *The Motor Cycle* Offices, Coventry.

BRADBURY, 1911, N.S.U. 2-speed, Whittle, complete, lamp, Jones, tools, perfect condition, given no trouble in year's business use in all weathers; buying 1912 Bradbury; £40, or nearest.—Gibbins, Barnt Green Birmingham.

PLASTOW, Grimsby, has for sale 1911 F.E. Rudge, new, offers; 1910 F.E. Triumph, speedometer, lamp, etc., excellent order, £42; 1911 3½h.p. Humber, 2 speeds, speedometer, lamp, sidecar, etc., as new, £45; 1906 3h.p. Triumph, £12.

1911 Premier, 3½h.p., free engine, 2-speed Millennium, Whittle, drip feed lubrication, Garner whistle, horn, tools, etc., perfect condition, only done 1,700 miles; cost £58, sell £45; buying twin.—Box No. 9,408, *The Motor Cycle* Offices, Coventry.

SACRIFICE.—5h.p. T.T. 1910 Rex, engine specially rebuilt by Coventry Ordnance Works, 1912 B. and B., Bosch, racing and touring handle-bars, exceedingly low, 12 months' engine guarantee given; any trial or examination; £27; money urgently wanted.—6, Kensington Rd., Coventry.

SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

KERRY, 2¾h.p., good condition; £7, or offer.—Apply, J. Starling, North Walsham, Norfolk.

3½h.p. Brown, good condition, B. and B. carburetter, 2 h.b.c.; offers.—Skipper, Gt. Shelford, Cambs.

LAMBERT, Thetford, for early deliveries of 1912 Triumphs, Bradburys, Matchless, Humbers, Rudges, B.S.A., etc.

B.S.A., standard, 1912, brand new in crate; giving up riding; £46/10.—Box L5,679, *The Motor Cycle* Offices, 20, Tudor St., E.C.

TRIUMPH, 1911, not done 500 miles, with Garner exhaust whistle, horn, and lamp; £43.—Turner, 29c, Victoria Rd., Wisbech.

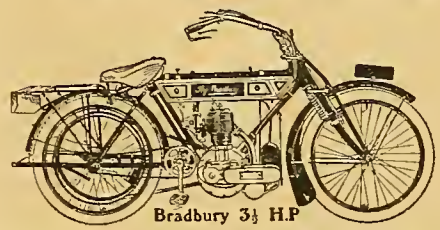
2¾h.p. Minerva, Eadie, grey, fast, low, Watawata, stand, brake, etc., perfect; bargain, £5/10.—Bookwood, Acton, Sudbury, Suffolk.

Collier's Motories,

Westgate, Halifax,

ENGLAND.

Early deliveries of 1912 Bradbury machines.



Bradbury 3½ H.P

Exchanges Quoted. Distance no objection.

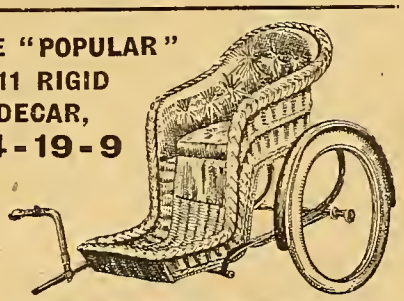
SECOND-HAND MACHINES.

CASH, EXCHANGE, OR EASY PAYMENTS.

1911 Twin Two-speed **REX DE LUXE**	£47 10
6 h.p. Twin **ZEDEL**, Bosch, B. & B., spring forks	£29 10
1910 7 h.p. Twin **REX**, M.O.V.	£37 10
FAFNIR, Bosch, h.b.c., Indian red, Druids	£19 10
Magneto **TRIUMPH**, spring forks, very smart	£25 10
Twin **REX DE LUXE** and Montgomery sidecar	£35 0
REX, 1910, 3½ h.p., "hot stuff"	£29 10
5½ h.p. Two-speed Twin **REX DE LUXE**	£29 10
5 h.p. 1910 Twin **REX**, special machine	£29 10
4½ h.p. Four-cylinder **F.N.**, magneto	£19 19
2¾ h.p. **KERRY**, runs well, spring forks	£10 10
1910 3½ h.p. T.T. **REX**, very fast	£27 10
TRIUMPH, 1908, very good	£28 10
3 h.p. **HUMBER**, chain drive	£7 10
1909 3½ h.p. **REX DE LUXE**, two speeds	£32 10
1908 3½ h.p. Magneto **REX**, spring forks	£22 10
1907 3½ h.p. Magneto **REX**, spring forks	£19 19
3½ h.p. Tourist **REX**, brand new	£29 10
1910 Twin **REX DE LUXE**, two speeds	£42 10
New Twin **REX**, Cantilever seat	36 Gns
Twin **REX DE LUXE** and sidecar	£27 10
MOTO-REVE, magneto, Druids	£19 19
MOTOSACOCHE Lightweight	£14 10
3½ h.p. **MINERVA**, M.O.V.	£14 10
F.N. Lightweight, magneto, spring forks	£19 19
REX, 3½ h.p., spring forks	£15 10
1911 3½ h.p. Tourist **REX**	£32 10
1911 Twin **REX DE LUXE**	£46 10
1911 Single-cylinder Two-speed **REX**, 300 miles	£32 10

A CALL WILL REPAY YOU.

THE "POPULAR" 1911 RIGID SIDECAR, £4-19-9



Backed by 10 years' experience. Every car guaranteed 12 months.

"Popular," Clipper or Continental tyre	£4 19 9
"Superbe" type, with best tyre, apron, etc.	£6 6 0
Ditto, with reversible child's seat	£7 0 0
Ditto, with best coach-built body	£7 12 6

Improved Quick Detachable Joints are fitted to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

Discount to Trade. Exchanges entertained.

50 Brand New Machines at nearly second-hand prices. Accessories free, and expenses paid to cash buyers. Come at once and get first choice.

MOTOR BICYCLES FOR SALE

1912 Bradburys, standard and free engine models; delivery January; cash, easy payments, or exchange.—Willmott Bros., Norwich.

1912 Centaurs, 2¾h.p. twin, in stock, £42; torpedo Precision, 2¾h.p., £37; sidecars, £6/6.—Willmott Bros., Norwich.

3½h.p. Premier, 1912 model, delivery about two weeks' time; owner buying lightweight; £45 for quick sale.—Cross Bros., Fruiterers, Ipswich.

1911 3½h.p. Premier, new last March, perfect condition, has been very carefully used, not done 2,000 miles; will accept £35.—Cross Bros., Fruiterers, Ipswich.

1912 L.M.C. Motor Cycles; immediate delivery; trial runs and interviews by appointment.—W. E. Sneezum, 14, Fore St., Ipswich. Sole agent Ipswich and district.

TWO New Triumphs, in crates; offers wanted for a new F.E. Rudge, F.E. Rover, Enfield 3½h.p. Minerva frame and wheels, suit inclined engine.—Ewen, King's Lynn.

B.S.A.! B.S.A.! B.S.A.! — Early deliveries of all models of these celebrated machines; second-hand machines part payment.—A. F. Garnham and Co., sole agents, Ipswich.

1911 Scott, 1912 lubrication, absolutely perfect, expert examination, trial, bargain, quick sale £46; F.R.S. riddling set, butted tube, £49; ordered 1912.—Walker, 31, Cambridge St., Norwich.

4h.p. Isle of Man T.T. 1910 Rex, thoroughly overhauled, splendid condition, very fast, tyres, belt tubes, saddle, etc., new, many spares, re-bushed; £30, or near offer.—John Torr, Trinity, Cambridge.

TRIUMPH, 3h.p., 1906, splendid condition, magneto, Lycett belt, tank re-panelled, fine P.well and Hammer lamp complete, good tyres and saddle, accessories £19/10.—No. 9,402, *The Motor Cycle* Offices, Coventry.

SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen Cardigan, and Pembroke.

B.S.A., June, 1911, perfect order, all accessories; £40.—Deeley, Bromsgrove.

DOUGLAS, August, 1911, perfect, and equal to new, all spares; £34.—Deeley Bromsgrove.

3½h.p. Triumph and Sidecar, late 1908, Whittle, all spares; lowest quick sale £22.—Davies, Manchester House, Gorseinon.

1911 Humber Lightweight, excellent condition, with tools and lamp; £26.—9,429, *The Motor Cycle* Offices, Coventry.

5-6h.p. F.N., 2-speed gear, 4-cyl., Rom back tyre, new August last, not done 1,000 miles; £38.—Birks, Sketty Rd., Swansea.

FOR Earliest Deliveries of Triumph, Humber, Enfields, Singer, Premier, apply at once, Griffiths Cycle Emporium, Llanelly.

2½h.p. Hobart, new February, everything complete spares; what offers?—Box No. L5,712, *The Motor Cycle* Offices, 20, Tudor St., E.C.

1911 F.N., 2¼h.p., 2-speed, perfect, done 2,000 miles, no breakdowns, new Dunlop on back, spare tyre, many other spares, lamp; £35, or offer.—Whitfield, Bilton Rd., Neath.

1909 Triumph, little used lamp, horn, etc., £29; 1911 T.T. Triumph, £39; T.T. Humber, 2¾h.p. twin, 3 speeds, clutch, £45; the actual machine on which Evans won the Junior Tourist Trophy race; as new, all in perfect condition; any trials.—Wharton and Hartill, Motor Cycle Depot, Dudley.

SECTION VII.

Gloucester, Oxford, Buckingham, Berks Wilts, and Hants, and Channel Islands.

TRIUMPH, 1909, excellent condition throughout, tyres practically new; £29, or offer.—R. N. Cole, Fareham.

TWIN Premier, 15 months old, 3½h.p., Bosch magneto, speedometer, lamp, spares; £29.—5, Bury Rd., Gosport.

P. AND M., 1911, 3½h.p., new Kempshall tyre, perfect order.—Davenport Vernon and Co., High Wycombe.

1911 Clutch Triumph, condition as new, spare Palmer cord, usual tools, etc.; £43.—Little, Clovelly, Fleet, Hants.

DOUGLAS, 1911, Model E, new condition, all accessories, spares; £39.—"Auchencairn," Worcester St., Gloucester.

IMMEDIATE Deliveries.—Write, Gibb, Gough and Son, Gloucester. Sole agents for Douglas, Bradbury, Premier, Rover.

BRADBURY, 1911, 2-speed, free engine, good condition, new Palmer cord back; £42. — Phillips, chemist, Tunbridge Wells.

MOTOSACOCHE, £12, Druids, footrests, Whittle, new saddle and tyres, accessories.—K. Stewart, Clarence Barracks, Portsmouth.



THE ONLY MOTOR CYCLE THAT COMBINES ALL THE QUALITIES ESSENTIAL FOR SIDECAR WORK. :: :: :: :: ::

Satisfaction has never overwhelmed the users of Sidecar Machines—those owners have always felt that there was something to be desired. May be they wanted a stronger frame, a more powerful and flexible engine, better brakes. Probably they wanted less noise, easier starting, efficient front and rear springing, and more substantial tyres and rims. It seems at any rate that there was always something lacking.

BUT NOW *comes the* 1912 *REX-J.A.P., profiting by the mistakes of the past, with a motor cycle that has eliminated these weaknesses—fitted with the world-famous J.A.P. Engine—especially strengthened frame with brazed on lugs, ensuring perfect alignment of sidecar—powerful brakes—spring cantilever seat and spring forks—exceptionally large tyres—automatic lubricator, with auxiliary hand operated pump—and many other exclusive features which place the REX-J.A.P. far and away above all other Motor Cycles in regard to Reliability, Comfort, Ease of Handling, Flexibility, and Economy.*

Write now for Catalogue, it will interest you.

TO DEALERS—The REX-J.A.P. Agency proposition is worth consideration—we invite your correspondence.

COLONIAL AGENTS—The REX-J.A.P. Colonial Models, with *Special Frame, Wheels, and increased ground clearance*, will interest you. We are now appointing Sole Agents, and shall be pleased to post you terms.

The Premier Motor Co, Ltd.,

Aston Road, Birmingham

Telegrams: "Primus, Birmingham." Telephone: Central 4310.

MOTOR BICYCLES FOR SALE

1912 Triumphs; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Bradburys; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Rudges; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Humbers; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Enfields; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Triumphs; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Bradburys; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Rudges; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Humbers; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Enfields; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Triumphs; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

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1912 Rudges; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Humbers; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

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1912 Humbers; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Enfields; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Triumphs; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Bradburys; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Rudges; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Humbers; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Enfields; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Triumphs; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Bradburys; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Rudges; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Humbers; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Enfields; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Triumphs; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Bradburys; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

1912 Rudges; any machine taken in part payment, easy terms.—Julian, Broad St., Reading.

MOTOR BICYCLES FOR SALE.

LES and Eyles, new Motor Garage, 113, St. Aldate's (opposite the Town Hall), Oxford.

LES and Eyles.—4h.p. Indian, free engine, perfect condition; £44.

LES and Eyles.—7-8h.p. Indian, free engine, with sidecar, perfect condition; £60.

LES and Eyles.—2¾h.p. Douglas, perfect condition; £34.

LES and Eyles.—3½h.p. Premier, perfect condition; £32.

LES and Eyles.—3½h.p. Rex, perfect condition; £25.

LES and Eyles.—3½h.p. B.S.A., free engine, new; £52/10.

LES and Eyles.—All the above are 1911 models.

LES and Eyles, Oxford, the University House.

h.p. Genuine De Dion, h.h.c., new sidecar; £14; separate £10.—Madan, Westbury Park, Bristol.

10 Lightweight F.N. for sale, variable pulley, magneto, tyres in good condition: special price £20.

09 Magneto Motosacoche, the most wonderful second-hand lightweight ever put up for sale, apparently its own with any 3½h.p., very fast; trial run any-; lowest £15; suit chauffeur, etc.

10 3½h.p. Kerry-Abingdon, Palmer cord tyres, as new, had very little wear; genuine bargain, price

E Condac Motor Depot, West Southbourne, Bournemouth, the firm who do not deal in doctored motor s.

09 Triumph, splendid condition, Lucas headlight, Palmer cords; £30, or exchange T.T. Triumph. , Church St., Chelsea.

DIAN, 7h.p., twin, 2-speed, free engine, as new; must sell; too powerful for owner; bargain, £40. below.

and M., 1910, 3½h.p., 2-speed, free engine, recently overhauled, Palmer cord front tyre, Rom hack, spares accessories; £40.—See below.

MBER, 3½h.p., 1911, 2 speeds, only wants seeing; £34.—See below.

X, 3½h.p., 1910, Tourist Trophy model, free engine: £27/10.

NCHESTER.—Dominy and Co., agents for Triumph, Singer, Ariel, New Hudson; early de- s arranged.

DGE and Bradbury Models, for prompt delivery; trial runs; exchanges entertained; send for lists.— t, Barnes, Colnbrook, Bucks.

UGLAS, 1911 Model D., absolutely unscratched lamp, horn, new belt, and all spares ;£33.—Rey-, The Lodge, Cosham, Hants.

R Sale, 3½h.p. Premier, fitted with genuine Rov 2-speed gear, sidecar, and accessories.—J.T., Ahing House, Victoria Rd., Swindon.

IUMPH, 1907, with 1911 improvements, Service belt, new Kempshall on hack, recently overhauled; -Avondale, Bective Rd., Putney.

YNO Passenger Machines; earliest delivery for cash or easy payments; trial runs arranged at any —Morris Motor Cycle Garage, Oxford.

12 Triumphs.—We can give very early delivery of all models for cash or easy payments.—Morris Motor Garage, Oxford.

12 Enfields.—Immediate delivery of lightweight model; cash or easy payments; earliest possible ery of Enfield passenger machine.—Morris Motor Garage, Oxford.

11 Latest Model 7h.p. T.A.C., 3-speed, run only 500 miles, condition as new; cost £80 few months £47 nett.—A. Ward, Home Farm, Ascot.

h.p. Douglas, 1908, thoroughly overhauled, splendid running order, good tyres, spring forks; £16. ntgomery, Victoria Rooms, Clifton, Bristol.

OTOSACOCHE, free engine, 2h.p., Druids, Dunlops, very little used, all accessories; sacrifice £17/10.— n, 60a, Gloucester Rd., Bishopston, Bristol.

ADBURY, 3½h.p., 1910, 2-speed, and sidecar (Premier), new tyres all wheels, new pulley, Whittle. e, condition perfect; £42.—Armstrong, Ardmore, bor. ugh.

1½ Triumph, Mabon free engine, Lucas 50/- lamp tools, and all spares, perfect condition, ridden 800 ; £40 no offers.—T. H. Bennett, Portsmouth rworks.

UGLAS, 1911, 2-speed, clutch, £36; 1911 single speed £30· 1910 £22· 1909, £18; guaranteed od order.—For further particulars, write Williams, las agent, Portland St., Cheltenham.

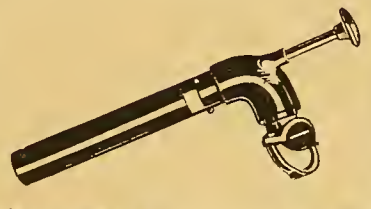
ARVEY'S Motor Cycle Mart, 58 and 60, Poole Rd., Westbourne, Bournemouth, have, amongst others, Lady's Humber, 2h.p. Centaur, 2¾h.p. Douglas, F.N., 3½h.p. Triumphs, and others.

IUMPH, 1909, excellent condition, lamp, horn, tools, mirror, all accessories, many spares, patent protector front wheel; trial; £30; no offers.— lwaine, Royal Artillery Mess, Deepcut, Farnboro', s

"IT WHISTLES LIKE A LARK, ONLY LOUDER,"

IS THE OPINION OF A SATISFIED USER OF THE

GARNER M.C. Alarm



The Best and only Perfect Exhaust Alarm on the market.

BEAUTIFULLY MUSICAL. NO HARSHNESS.

Nickel Plated - - 12/6

Black Plated - - 13/6

POSTAGE 5d. EXTRA.

Sole Makers and Patentees:

HENRY GARNER, Ltd.,

Moseley Motor Works,

Telegrams—"Dependable, Moselev." 'Phones—South 3 and 4.

BIRMINGHAM.

3½ h.p.

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2¾ h.p.

Two of the World's Best, at prices within your range.

THE MIDLAND DEPOT ALWAYS HAS THEM IN STOCK.

Call or write,

THE HUMBER DEPOT

(Henry Garner, Ltd.),

78, New St., BIRMINGHAM.

Telephone: Central 7298.

MOTOR BICYCLES FOR SALE.

2¼h.p. F.N., 1910 model, with 1911 piston, shaft drive, 2-speed, magneto, Glare lamp, 2 accumulators, Cowey speedometer, 2 spare butt-ended tubes, one outer cover, Rom back tyre: £25.—Major Westmorland, Depot, Hampshire Regiment, Winchester.

1912 Matchless Motors; early deliveries 6h.p. clutch model, 60 guineas; 1912 Hazlewood motors from stock, 3 speeds, free engine, 47 guineas; catalogues, particulars free; 1911 Rudge, July, 320 miles, as new, spare valves, tools, £40.—Balfours, Motor Works, Banbury.

BRADBURY, new Jan., 1910, fitted 1911 cylinder, piston, patent leather mudguard, Garner whistle, lamp, horn, mirror, tool-roll, new studded Dunlop, new Lyso, perfect, bargain £28; Motosacoche, 1¾h.p., 1909, magneto, tyres good, first-class order, accessories, £17; must sell, cash wanted.—64, High St., Marlow-on-Thames.

SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

WILTON Cycle Co., Victoria, S.W.

WILTON.—1911 Triumphs, as new, clutch models, with accessories, £45, £48; another, with sidecar, £48.

WILTON.—1911 Triumph Standard, as new, all accessories and spares; £40.

WILTON.—1911 Bradbury Standard, as new; £38.

WILTON.—1911 Bradbury, standard, with accessories, and Chater-Lea sidecar; £43.

WILTON.—1911 Singer, clutch model, with Jones speedometer, lamp, etc., and Millford sidecar; £50, as new.

WILTON.—1911 Clynos, 2 months old; £55.

WILTON.—1911 Rex T.T., 5h.p., as new.

WILTON.—1910 Rex, 5h.p., 2-speed and free engine, just overhauled; £35.

WILTON.—1911 Kerry-Abingdon, 2-speed gear, accessories, and Kerry sidecar, quick joints, and cane body, as new; £48.

WILTON.—1911 F.N., 5-6h.p., 4 cyls., with accessories; £40.

WILTON.—F.N.'s, 4½h.p., 4 cyls.; £20 and £22 each.

WILTON.—1911 F.N., 2¼h.p., single-cyl., 2-speed gear, with all accessories, in fine order; £36.

WILTON.—1910 Kerry-Abingdon, 3½h.p., standard, overhauled, in very good condition: £28.

WILTON.—1909 Humber, 2-speed, 3½h.p., in splendid condition, new tyres, accessories, etc.; £30.

WILTON.—1909 N.S.U., 2¾h.p., electric ignition; £9

WILTON.—1911 Humber 2h.p. lightweight, splendid order; £27/10.

WILTON.—1911 Moto-Reve, 2¾h.p., brand new; £39

WILTON.—6h.p. tricar, water-cooled, 2-speed gear, chain drive, magneto, etc.; £20.

WILTON.—Sole S.W. representatives for Clyno motors; deliveries February.

WILTON.—Sole S.W. representatives for Matchless motors; deliveries January and February.

WILTON.—Special agents for Bradburys, standard and 2-speed belt models in stock.

WILTON.—Early deliveries of Clyno, Matchless, and Wilton sidecars; lists free.

WILTON.—Exchanges and instalments arranged Please write for forms.

WILTON Cycle Co., 110, Wilton Rd., Victoria, London, S.W. Tel.: 5115 Victoria

QUADRANTS, Quadrants, Quadrants.

CASS'S Motor Mart, 5, Warren St., Euston Rd., W., sole London and district agents for the famous Quadrant motor cycles; book at once for early delivery; catalogue upon application.

DOUGLAS, 2¾h.p., 1911, 2-speed and clutch, in splendid condition, accessories; £40.—Below.

BRADBURY, 3½h.p., 1911, excellent condition throughout, has had very little use; £39.—Below.

TRIUMPH, 3½h.p., magneto ignition 2-speed and free engine, h.h.c.; £27, or near offer.—Below.

TORPEDO, 2¾h.p., 1911, brand new, Amac carburetter, magneto ignition; a bargain, £37.—Below.

MOTO-REVE, 2h.p., 1911, 36-guinea model, only slightly used; £22.—Below.

PREMIER, 3½h.p., 1911, new engine, machine in excellent condition; £38.—Below.

CASS'S Motor Mart, 5, Warren St., Euston Rd., W. (opposite Warren Street Tube Station) Tel.: 3624 Mayfair.

MOTOR BICYCLES FOR SALE.

B.S.A. 1912 2-speed Models in stock.—Rivett, Leytonstone.

B.S.A. 1912 Free Engine Models in stock.—Rivett, Leytonstone.

B.S.A. 1912 Fixed Engine Models in stock.—Rivett, Leytonstone.

MOTOR Supplies.—Up-to-date stock at Rivett's, 236, High Rd., Leytonstone.

BAT, 2¾h.p. De Dion engine, spring forks, very reliable; £9/10.—224, Wood St., Walthamstow.

2¾h.p. Excelsior, Chater frame, low, in splendid order, spring forks.—20, Milkwood Rd., Herne Hill.

3½h.p. Minerva, 1911 Amac, brand new tyres; any trial; £14/10.—36, Hurlingham Rd., Fulham.

3½h.p. Triumph, 1909, excellent condition, tyres ditto; £27, bargain.—5, Circus Rd., St. John's Wood.

CHURCHILL Park St., Croydon.—1912 free engine Rudge in stock; £55.

CHURCHILL, Croydon.—1912 free engine B.S.A. in stock: £56/10.

CHURCHILL, Croydon.—1912 Premier lightweight in stock; £36.

CHURCHILL, Croydon.—1911 Bradbury, standard, little used; £42.

CHURCHILL, Croydon.—1910 Enfield lightweight, Whittle; £22.

CHURCHILL, Park St., Croydon.—Sole agents for Bradburys: early delivery.

A.S.L., new in crate, engine J.A.P.; £47/10.—Davies, 162, Green Lanes, N.

5h.p. Twin Vindec; £16/10, magneto machine.—57, Park Rd., West Dulwich.

1912 Triumph, free engine, quite new; what offers?—West, Studio, Cobham, Surrey.

ZENITH. 1911. 3½h.p., October, as new; £45, or exchange.—Edmunds, Quadrant, Weybridge.

3½h.p. Rex, h.b.c., new condition, splendid order, lamp, horn, tools; £9.—137, High St., Putney.

ARNO, 3½h.p., 1912 Tourist Trophy model, in stock; £45, old machine part payment.

ARNO, 3½h.p., 1912 Tourist, in stock; £45; your old machine taken in part payment; gold medal 24 hours' M.C.C. trials.

ARNO, 2¾h.p., 1912, in stock, gold medal M.C.C. 24 hours' trials; the best 2¾h.p. on the market, equal to most 3½h.p. models.

ARNO 2¾h.p. Lightweight, in stock, splendid non-freak machine, nothing better for town use.

ARNO Agency, Wholesale and Retail Agents, 2, The Parade, Kilburn, Maida Vale, N.W.

1910 Triumph, free engine, new tyre, belt; 33 guineas.—3, Albert Mansions, Crouch Hill.

1911 Moto-Reve, 2¾h.p. twin, good condition; must sell; £24.—138, Brixton Hill, London.

IMMEDIATE Delivery Quadrants, Centaurs, Bradbury, Trump-Jap, Humbers, etc.—Below.

EARLY Delivery, Triumph, Indian, Rex, Zenith, Corah, Rudge, Bat, Rover, etc.—Below.

LARGE Stock of Second-hand Machines; cash, exchanges, gradual payments. — Applebee Bros., Church Hill, Walthamstow. 'Phone: 517 Walthamstow.

CROYDON.—1912 Enfields in stock; no waiting.—Call and see the agents, 86, South End, Croydon.

CROYDON.—1912 Hobarts, all models, immediate delivery.—Agents, 86, South End, Croydon.

CROYDON.—1912 Levis, 2-stroke; a trial run will convince; immediate delivery.—86, South End, Croydon

CROYDON.—Send for lists of second-hand machines; exchanges entertained.—The Croydon Motor Mart, 86, South End, Croydon. Tel.: P.O. 797.

BARKERS, Kensington.—3½h.p. Triumph (1912 improvements), free engine model; £55; in stock.

BARKERS, Kensington.—3½h.p. Singer, free engine model: £55; in stock.

BARKERS, Kensington.—3½h.p. Premier, free engine model; £54/17; in stock.

BARKERS, Kensington.—3½h.p. Humber, free engine, 2-speed gear; £52/10; in stock.

BARKERS, Kensington.—2h.p. Humber, lightweight; £37; in stock.

ANY of above by easy payments, 5% extra.—John Barker and Co., High St., Kensington.

ROVERS, 3-speed, clutch or fixed engine, in stock. —Chatwin and Hartley, King St., Richmond.

RIELS, variable gear, and T.T. models; immediate delivery.—Chatwin and Hartley, King St., Richmond.

ARTHUR MYLAM and Co., 42, High Rd., Streatham, S.W. The motor cycle depot of Streatham.

TRIUMPH, 1908, in good condition; trial; accessories; £26.—Page, 74, East Hill, Dartford, Kent.

3h.p. Quadrant, spring forks, spray, running order; £5/15, bargain.—Speechley, 45, Church Rd., Acton.

CORDINGLEY,

HASLINGDEN.

Special Clyno Week!

I have the following Clynos for sale. **To secure, write, wire, or 'phone:** Two for delivery January, two February, and others at weekly intervals to June 1st. If you want to make sure of getting the "sidecar machines" get in touch with me. No bounce; no swank. Actually yours when you have bought them. I can also give immediate delivery of all the following makes: Triumph, Rudge, Douglas, Enfield, B.S.A., Singer, Premier, Rover, Bradbury, and the Three-speed New Hudson. **Please don't forget,** I can take your present machine and allow you the **top price** for same. I have a few Scotts for delivery April. My second-hand machines are guaranteed to be in perfect order, and you can depend on the quality. Every machine a bargain. The following are actually in stock. I do not sell from picture books:

	List price.
RUDGE, 3½ h.p., free engine model, pedal engine starter	£58 0
RUDGE, T.T. model, special	£48 15
BRADBURY, 3½ h.p., 2-speed	£58 0
NEW HUDSON, 3½ h.p., 3-speed gear	£59 17
PREMIER, 3½ h.p., 3-speed gear	£58 0
CLYNO, 5-6 h.p., the sidecar machine	£68 0
ENFIELD, 6 h.p., 2-speed, with sidecar	£84 0
DOUGLAS 2¾ h.p., the perfect lightweight, free engine, 2-speed, kick starter	£50 0
NEW HUDSON, 2¾ h.p., 3-speed model	£49 7
PREMIER, 2¾ h.p.	£36 0
ROVER, 2¾ h.p., free-engine model	£55 5
B.S.A., 3½ h.p., free engine, model B	£56 10
SINGEF, 4 h.p., 2-speed bracket gear, fitted with sidecar; list price £65, sidecar extra.	
B.S.A., 3½ h.p., 2-speed and free engine	£60 0
BRADBURY, 3½ h.p., with free engine	£54 10
PREMIER Twin-cylinder, with 2-speed	£63 0
NEW HUDSON, 3½ h.p., model 11b, 3-speed	£63 0
ENFIELD, 2¾ h.p., handle-starting, 2 speeds, free engine, footboards	£62 10

The only 1911 model left:

BRADBURY, 3½ h.p., standard model, just from works; list £48. Clear, best offer.

HIGH-CLASS SECOND-HAND MOTOR CYCLES.

1910 3½ h.p. **TRIUMPH,** perfect	£35 0
1911 3½ h.p. **BRADBURY,** T.T. model, a gift	£32 0
1911 3½ h.p. **IVY-PRECISION,** just as new	£33 0
1911 3½ h.p. **RUDGE,** splendid order	£36 0
1910 **SCOTT,** new tyres, B.E. tubes, good order	£35 0
1909 **VINDEC SPECIAL,** two speeds, magneto, complete with sidecar	£29 0
1909 3½ h.p. **MINERVA,** magneto	£17 0
1911 7 h.p. **SPEED KING KEX,** as new	£38 0
MOTOSACOCHE, 1¾ h.p., 1910, free engine model	£21 0
1908 **QUADRANT,** 3½ h.p., Bosch magneto, h.b. control, spring forks	£18 0

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PHŒNIX, 3½ h.p., two speeds, free engine, handle starting, coach-built chair, lamp, horn, tools, etc. Clear for £10 10s. Special.

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MOTOR BICYCLES FOR SALE

ZENITHS, Zeniths, Zeniths, 1912 models in stock, exchanges arranged.—Stereye, 337, Euston Rd., N.W.

ZENITH Gradua, latest 1911, 3½h.p., m.o.v., magneto, like new; 38 guineas.—1, Ebner St., Wandsworth.

ZENITH, 1912 models; immediate delivery; no waiting; trade supplied.—Rey, 6, Heath St., Hampstead.

TRIUMPH, 1911, free engine, done 500 miles, as new; £48.—Edmunds, Malden, Weybridge, Surrey.

DOUGLAS, not ridden 1,000 miles; £30; see appointment.—Sprunt, 138, London Rd., Kingston.

2¾h.p., Chater, No. 6, h.b.c., tyres good, lamp, good condition; £10; must sell.—11, Alleyn Rd., Dulwich.

1911 2¾h.p. Royal Enfield, 2-speed, only delivered few weeks; £40.—Omnium, 198, Gt. Portland St., W.

QUADRANT, 1¾h.p., good tyres, fast machine, running order; £5/10.—Write, James, 2, New Broadway, Southall.

NEW Hudsons, Triumphs, Bradburys; order now for early deliveries.—Godfrees, 124, Romford Rd., Stratford.

TRUSTY Magneto Triumph, 1909¾, new condition; £28; spares.—Dining Rooms, 195, Cambridge Rd., Mile End.

EAGLES.—Motosacoche lightweight, Bosch magneto, Druid forks, free engine, Whittle belt, Palmer tyres; £18/10.

EAGLES.—N.S.U., 3h.p., single-cyl., new 1910 motor, dropped frame, new condition; £18.

EAGLES.—F.N., 4-cyl., 5-6h.p., 1911 model, as latest improvements, automatic carburetter, dry lubrication; £38; exchange lower power.

EAGLES.—Triumph, 1910, free engine model, little use, equal to new; £39/10.

EAGLES.—N.S.U., 3½h.p. model de luxe, 1910, magneto, 2 speeds, free engine, only run 500 miles, speedometer, etc.; £34/10.

EAGLES.—Douglas twin, 2¾h.p., late 1910, tyres, Brooks padded saddle, fine condition; £

EAGLES.—Motosacoche lightweight, Hellesen ignition, Whittle belt, fine condition: bargain, £9/15

EAGLES.—Rex, 3h.p., magneto, dropped frame, spring forks, 1911 B. and B. carburetter; £1

EAGLES and Co., High St., Acton.—N.S.U. London district agency. Early delivery of 1912 models; liberal allowances for machines in part payment. Tel.: 556 Chiswick.

3½h.p. 1911 Clutch Rover, new July, done 200 miles; extra heavy Continentals; £43.—54, St. Gabriel Rd., Cricklewood.

2½h.p. Kerry, dry cell, long bars, swan neck, throughout; £12, or nearest.—1, St. Margaret's Terrace, Plumstead.

1912 Multi Speed Rudges, early delivery guaranteed on demonstration machine in stock.—W. Elce, Elmwood Rd., Romford.

3½h.p. Triumph, perfect condition, Whittle belt, 1912 series, and art cane sidecar; £27.—Sterling's Garage, Ley Rd., Stockwell.

8h.p. 1911 Bat, 2-speed gear, car tyre, with rigid sidecar, perfect condition; £56.—Sterling's, Sidney Rd., Stockwell.

TRIUMPH, 1909, grand machine, belt, tyres, whole machine excellent; £25.—Bunting, Stone.

F.N. 1¾h.p. Lightweight, magneto, spring forks, £11.—Brookside, Gordon Av., Highams Park, London.

1910 Triumph, excellent condition, lamp, generator, spares, etc.; £35. — Rogers, 42, Church Rd., Hendon.

TRIUMPH, 1910, lamp, generator, 2 belts, tyres, excellent condition; £35.—5, Upper Walthamstow Rd., N.E.

MINERVA, 3½h.p., m.o.v., Chater No. 6, low frame, good order; sacrifice £9/15.—36, Skelbrooke St., Earlsfield.

A BARGAIN.—1912 Zenith, 3½h.p., only been [illegible] miles; only wants seeing; £50.—Wollis, High St., Saffron Walden.

5h.p. Twin Peugeot, Bosch magneto, h.b.c., perfect order; £15, or exchange.—Jeffs, 3, Haycroft, Stevenage, Herts.

3½h.p. Motor Cycle, vertical engine, good condition, spring forks, low; £8.—Barter, c/o Gardner, 18, St., Hampstead.

2h.p. Lightweight, low, fast, powerful, re-enamelled, nearly new tyres, splendid condition; £1-1 Queen's Rd., Dalston

BRAND New Free Engine Triumph, 1912 improvements; immediate delivery; £55.—Browns, 18 Brompton Rd., London.

P. and M. 1912 Motor Cycle; advertiser unable to take delivery (April); best offer over £60.—A.Z., Ashworth Court, Eastbourne.

£28.—Bradbury, 1910, Dec., 1911, improvements, engine, Brooks pan saddle, Kempshall tyres, Arlington Rd., Surbiton.

OTOR BICYCLES FOR SALE.

.p. N.S.U., just overhauled, new belt and tyres; a bargain, £15, first cheque secures. — Wallie, St., Saffron Walden.

X, 3½h.p., h.b.c., 1910 B. and B., 2 accumulators, accessories; bargain. £15.—Sturges, 95, Gonville Thornton Heath, Surrey.

Stock.—3½h.p. free engine Singer, B.S.A., 3½h.p. Zenith, free engine Rover; who wants?—Walbro eering Co., Saffron Walden.

)WN, 3½h.p., 1908, just been thoroughly overhauled in our works; £11, a bargain. — Soans, and Jones, Bromley, Kent.

.p. Motor Cycle. Amac, good condition, new Michelin. Bowden brake, lamp, and belt; bargain, .—Motor, 28, Glebe Rd., Hornsey.

. Singer, 1910 lightweight. Palmer tyres. Bosch magneto, guaranteed perfect; £19, or near.—Boy-61, Mornington Rd., Leytonstone.

1911½ J.A.P., Palmers, Barlow, Bosch, drip lubrication, unused, £36; 1912 2½h.p. Humber, once £39.—84, Rodenhurst Rd., Clapham.

1 Free Engine Triumph, almost new, perfect con- dition; accept £45, or near offer. — Vestey, ley," Pampisford Rd., South Croydon.

TOSACOCHE, 1¼h.p. free engine, h.b.c., very good ondition, complete, like new; £14/10.—1, Addison Place, Kensington. Tel.: 5215 Western.

7 Low 3½h.p. Bike, 1908, Rex engine fitted, m.o.v., .b. Amac, spring forks; £12; this is a genuine .—Mason, 86, Agamemnon Rd., N.W.

A. Fixed and Free Engines in stock, Triumph arly delivery; liberal exchanges.—Call and inspect t Chivers, 55, Wilton Rd., Victoria, S.W.

MBER, 3½h.p., 2-speed, late 1909, in new condition ll round, little used; approval, or expert exam- ; £29.—Ling, Ockendon, Romford, Essex.

JMPH, 1911, free engine, nearly new, tyres, etc., n splendid condition, in perfect order; price £42. dmunds, 5, Wilmington Sq., Eastbourne.

ATHAM.—4h.p Roc and sidecar, fitted with Roc speed gear, and free engine, Bosch magneto, in l order and condition; £29, worth £35.

ATHAM.—3½h.p. N.S.U., on Chater-Lea frame, agneto, wants a belt, in good order; only £12/10.

ATHAM.—2¾h.p. Minerva, magneto (Bosch), low sition, long handle-bars, spring forks, B. and B tter; £15, or near offer.

ATHAM.—3½h.p. Ariel, 1911 model; cost 52/10; fitted with Palmer cord tyres, butted tubes magneto, Druid spring forks, variable gear, and gine, only run 3,000 miles; £33/10, or near offer

MPH, 1909, splendid condition, £31; Premier, 11, free engine, perfect, £40; Enfield, 1911, effery and Soo, Triumph agents, Guildford.

MPH, 1910¾, F.E., new condition, spare cover, lt, tube, motor suit, new steel Rom back; acces- £36.—31, Gt. Sutton St., Clerkenwell, E.C.

. Motor Cycle, m.o.v., perfect condition throughout, B.S.A. frame, stand, and accessories; for ate sale £8/10.—23a, Greville Rd., Kilburn.

IBER, 3½h.p., 2-speed and free, new tyres; £30, exchange for Douglas, cash adjustment; seen ointment.—19, Bromfelde Rd., Clapham, S.W.

Chater-Lea, Roc engine, new cylinder, new piston seb, Brown-Barlow, Michcline, fast, low; sacri- 3, near offer.—110, Westbourne Terrace, London.

OSACOCHE, 1910, little used, free engine little belt, footrests, cut-out, lamp, horn, 30/- cyclometer; £18.—151, Finchley Rd., Hampstead

4-cyl., absolute bargain, advertised few weeks o £20, will take £17; no offers; good condi roughout, lamp, spares.—35, Kathleen Rd., Bat

u Want Bargains in second-hand motor cycles, u can get them at Wauchope's.—Wauchope's, Lane, Fleet St., London, E.C., just off Ludgate.

UNDS and Wadden, Weybridge.—Immediate de very all best makes of motor cycles; cash, ex or easy terms. The house for genuine bargains 43.

. Motor Cycle, high tension and battery ignition, quite independent, Palmer tyres and tubes, new; cash wanted; £12.—40, Alexandra Rd., ss.

MPH, £23/10, new studded back and sound nt tyre, '08 model, splendid condition; after k, except Friday.—W., 71, Fox Lane, Palmer's N.

ate 1910, 7h.p., 2-speed, Millford sidecar, ridden 300 miles, car tyre on back wheel, Whittle belt, , speedometer, spares; £50.—Moore, 244, Clap l., S.W.

TH-GRADUA, 1911, 3½h.p., Cowey speedometer, tch, spare tyre, new belt, very powerful machine, good condition; £38/10, bargain.—23, Aberdeen ghbury, N.

.p. Brown, up to date, low, powerful, B. and B arburetter, h.b.c., headlight, etc., also splendid conversion to ecciable, tradesman's carrier, run tc.; offers fb clear.—91, Stanhope Gardens, Har-

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1911 **Douglas,** almost as new £31
1911 3½ **New Hudson,** 3 speed, nearly new .. £45
1911 F.E. **Bradbury,** nearly new condition .. £37
1911 T.T. **Rex,** 3½ h.p., nearly new condition £32
1911 3½ **N.S.U.,** spring forks, do. do .. £27
1910 3½ **Triumph,** grand order, first cheque .. £35
1911 8 h.p. **Chater Lea,** No. 7, 3 speeds, the sidecar machine de Luxe, only £60
1907 **Triumph,** '08 cylinder, just overhauled .. £23
1907 **Triumph,** splendid condition, just overhauled £21
1910 2½ 2½ p. **F.N.,** splendid order £24
1911 3½ **Zenith-Gradua,** splendid order £43

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Nye's have many old parts in stock which often cannot be procured elsewhere. Send requirements or call.

MOTOR BICYCLES FOR SALE.

3½h.p. Fafoir-Chater-Lea, Bosch magneto, very low, mechanical valves, will pull sidecar, as new; bargain, £18. lowest.—Beecher, 10, Woodview Terrace, Archway Rd., N.

3½h.p. Wolf, grey, low, 26in. wheels, B. and B., Hellesens, Prices, spares, footboards; £10.—Confectioner, 114, Markhouse Rd., Walthamstow. 'Phone: 481, Walthamstow.

HUMBER Lightweight, 2h.p., new May, 1911, perfect running order, with accessories; £25; owner buying sidecar machine.—C. Hutchison, Dove House, Hatch End, Middlesex.

PEUGEOT, 1909, accumulator, Chater-Lea frame, B. and B. carburetter, handle control, tyres and belt nearly new, in excellent running order; offers.—Radbourne, Harlow, Essex.

INDIAN, 1910, 5h.p., green, 1911 clutch, faultless throughout, Rom, Palmer, spares; owner giving up; must sell; best offer over £25.—Rev. Horton, 21, Brondesbury Park, N.W.

3½h.p. Minerva, magneto, new Davison tank, gauges, Whittle, B.B., h.b.c., head lamp, all accessories, splendid order; £16/10; exchange magneto twin.—20, Milkwood Rd., Herne Hill.

MOTOSACOCHE, 1¼h.p., Obach, Clincher, Palmer, spring forks, bought 3½h.p., consider exchange good sidecar and motor accessories; sell £8, cheap.—Lund-Newell, South Park, Reigate.

BRADBURY, 3h.p., excellent condition, spring forks, new butted tubes, Palmer cord back, accessories, spares; bargain, £15 cash.—Letters, E.W.S., 48, Constance Rd., East Dulwich, S.E.

MOTOSACOCHE, 1911, 2½h.p., in excellent condition, free engine, Whittle belt, horn, lamp, full set tools and spares, and waterproof suit; bargain, £27/10.—W. Elce, Brentwood Rd., Romford.

BRADBURY 1912 models, Douglas 1912 models, Triumph 1912 models, Premier 1912 models; deliveries now, from stock; offers, exchanges entertained. —Walkers, Motor Depot, Harwich.

WALKER'S Bargains.—1911 2-speed Douglas, as new, £35; 1911 twin Moto-Reve, as new, £22; 1909 twin Moto-Reve, £15; 1910 twin Rex, £22; others from £7; all guaranteed bargains; offers, exchanges entertained.—Walker's, Motor Depot, Harwich.

3½h.p. M.M.C., Chater No. 6, Palmers, spring forks, £13; also 26×2½ Continental, butt-ended, 8/-; Unito coupler, new, 10/-; Pulco head lamp, 10/-.—P. Wright, 94, High St., West Norwood.

1911 3½h.p. Lincoln Elk, Mabon clutch, Farrar's sidecar, the whole in perfect order and as new, best value on the market for £31/10.—A. White, Tennis Court, Hampton Court Palace, Middlesex.

3½h.p. Tourist Model Triumph, purchased 1909, in magnificent order, complete stand, carrier, tools, horn, magneto cover, etc.; first offer over £26, bargain. —Triumph, 16, Belvedere Rd., Norwood, S.E.

1911 Free Engine Triumph, lamp, horn, speedometer, tube, and belt carrier, back carrier case, mud shield, spares, Palmer and Rich tube back, perfect order; £45.—F. Gay, Eastbrook End, Romford.

GREAT Bargain.—6h.p. Chater-Lea-Jap, 1908, a-o.i.v., magneto, h.b.c., 24in. wheels, tyres, belt good, just re-bushed, new pistons, valves, rings by makers; too fast for owner; £27/10, offers.—Williams, Felstead, Essex.

PHELON and Moore, 1910, in grand running order, genuine bargain, £40, or with sidecar, £45, no offers; also 3h.p. 1909 N.S.U., magneto, 1911 B. and ., in splendid order, £13.—Eaton Villa, Hopper's Rd., Palmer's Green, N.

TOTTENHAM.—1912 models, definite deliveries; Bradburys, 2-speed, T.T. and F.E.; Humbers, Lightweight twin, 3 speeds, 3½h.p. 2-speed 3½h.p. standard Triumphs, February; early deliveries Matchless; Bats; and A.C. Sociables delivery March; Clynos in stock; cash or exchange.

TOTTENHAM.—1911 models; shop-soiled Triumph, standard model; 1911 Rudge-Whitworth, F.E.; 1911 Bradbury, 2-speed, F.E.; 1911 Bradbury, F.E.; 1911 Bradbury, standard model; what offers?

TOTTENHAM.—Motosacoche, 1910, just overhauled by makers thoroughly; £24.

TOTTENHAM.—Fafnir, 4½h.p., Simplex, new engine and magneto, Whittle belt; £25.

TOTTENHAM.—Twin Sarolea, 5h.p., Bosch magneto, re-bored, re-bushed, and new pistons fitted; £20.

TOTTENHAM.—Twin N.S.U., Whittle, B. magneto, low built, spring forks, Chater-Lea sidecar; £27.

TOTTENHAM.—Roc, 1910, 4h.p., 2-speed, and free engine, Whittle belt, spring forks; £36.

TOTTENHAM.—Humber, 3½h.p., 1910, 2-speed, F.E.; £35.

TOTTENHAM.—1911 Humber, 2-speed, F.E.; £38; nearly new.—Stamford Hill Motor Co., 128, High Rd., Tottenham. 'Phone: 1982 Tottenham.

1912 New Hudson, Premier, Enfield, Bradbury, Rover, Humber, and Triumph motor cycles for early delivery; Matchless in 6 weeks from order; cash or easy terms; exchanges for any machine arranged, best value allowed; Chater-Lea Duo cars built to order; speed gear conversions, overhauling, and repairing carried out; all work guaranteed; moderate charges; estimates gladly given; 10 years' motor cycle experience.—Wallace Motor Cycle Co., 36, Clarence St., Kingston-on-Thames.

MOTOR BICYCLES FOR SALE.

MATCHLESS, 1911, 6-7h.p. twin J.A.P. free engine, 2-speed, purchased last July, complete with speedometer, watch, all accessories; cost £80, sacrifice, 50 guineas.—Routledge Place Lane, Seaford, Sussex. 'Phone: 54 Seaford.

J.A.P., 6h.p. twin, lightweight, speed iron, splendid condition, automatic lubrication, special carburetter, new belt, non-skid and Palmer cord; bargain, £25; inspection by appointment.—Apply, 153, Palmerston Rd., Bowes Park.

RUDGE, T.T., 1911, fitted with large racing tank, Rom combination on rear wheel, in excellent condition, and Hutchinson Extra practically unsoiled on front wheel; £35; no offers.—C. Moss, I. St. George's Mews, Primrose Hill.

3½h.p. Humber, 1910¾ model, 2-speed gear, free engine, handle starting, tyres unpunctured, butt-end tubes and 2 spare, Garner whistle, excellent condition throughout, very carefully used, splendid sidecar machine; £30.—534, High Rd., Tottenham, N.

1911 3½h.p. Bradbury, Cowey speedometer, magneto control on handle-bar, complete with headlight, spare butt, belt, etc., splendid condition, all accessories; £35; with Mabon clutch £2/10; sidecar to suit, £3.—S.B., Ivydene, Dukesthorpe Rd., Sydenham, S.E.

1912 Racing T.T. Triumph, with dropped and touring bars, just delivered, and in perfect condition, tyres unpunctured, ridden under 100 miles; too fast for owner; £44/15; any trial or examination.—G. A. W Watts, 20, Mercers Rd., Tufnell Park, London.

SECTION IX.

Somerset, Devon, Dorset, and Cornwall.

DOUGLAS, 1912, all models; any date delivery given, list post free.—Moffat, Yeovil.

1912 New Free Engine Triumph, 1911 Singer, 3½h.p., little used.—Kimber, Curry Rivel, Somerset.

BROWN, 1908, 3½h.p., 2-speed gear, Bosch magneto, h.b.c., N.A.B. saddle-pillar, relinble machine; price £17.—Baker, Beaworthy.

DAN GUY, Weymouth, sole agent for Bat, Trtumph, Zenith, Douglas, Bradbury motor cycles; early and definite dates for delivery.

DAN GUY, Weymouth.—1910 Triumph, free clutch, speedometer, and all accessories; £37/10.

DAN GUY, Weymouth.—1910 free clutch Triumph; £33/10.

DAN GUY, Weymouth.—Motosacoche, accumulator, engine just overhauled; £10.

DAN GUY, Weymouth.—1911 2-speed model E. Douglas, very little used; £38.

DAN GUY, Weymouth.—1910 2-speed Humber, splendid condition, £33; 1912 Bradbury, 2-speed gear, in stock, £55.

DAN GUY, Weymouth.—Model D. 1911 Douglas, guaranteed condition; any trial or examination; £28.

DAN GUY, Weymouth.—1912 free clutch Triumph in stock; £55.

DAN GUY, Weymouth.—1912 Zenitha, 5-6h.p., £70/7; 3½h.p., £55/13; both in stock.

DAN GUY, Weymouth.—1912 Bradbury, 2-speed gear; £55; in stock.

DAN GUY, Weymouth.—1911 free engine Rudge-Whitworth, Lucas head lamp, and spares; £43.

BRADBURY, 1912 model, delivery now; £48.—Sole agency for Plymouth district, Devonshire's, Torpoint, Cornwall. Several second-hand machines.

3½h.p. Rex de Luxe, 1908-9, Roe clutch, handle starting, Bosch, 1911 B. and B., cut-out, exhaust whistle, splendid running order; £16/16.—Hodges, Electricity Works, Dawlish.

TWO 1910¾ Triumphs, standard, one with Rom tyres, new belt, lamp, and horn complete; other Palmer and tyres, 1 spare, P.R.S. lamp, belt, carrier, new belt; 2 splendid mounts; £35 each; one 1911 Enfield, 2¼h.p., 2-speed, chain driven, new, nearest £45; free engine Triumphs February and March, Brodhurys ditto.—38, Foro St., St. Austell.

SECTION X.

Scotland.

B.S.A., 1911, like new, perfect in every respect; £40, or near offer.—Cran, Dingwall.

TRIUMPH, 3½h.p., 1907, been thoroughly overhauled; offers.—J. W. Purves, Melrose.

1912 T.T. Triumph Roadster, for immediate delivery. —Christie Brothers, agents and repairers, St. Andrew's.

ABERDEEN and District Agent for Levis lightweight, Matchless, Scott, and A.J.S., Cummiog, 165, Holburn Street.

3½h.p. Brown, 1910, standard model, perfect condition, just overhauled; £29, or nearest offer.—Henderson, 58, Leith St., Edinburgh.

1911 Standard Roadster Triumph, perfect condition, Clinchers, all accessories; trials arranged; offers. —McLaren, The Laurels, Kirkcaldy.

N.S.U., 3h.p., magneto, B. and B. carburetter, footboards, engine overhauled, guaranteed; photo; £16. —Wm., McFadzean, Straiton, Ayrshire.

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MOTOR BICYCLES FOR SALE

SOLE Agent for Fifeshire for Douglas motors; delivery guaranteed. Triumph, standard, and c models in stock.—Dall, Ladybank, Fife.

1911 Free Engine 3½h.p. Triumph, perfect cond everything practically as new; £45; trial b pointment.—Beattie, 18, George St., Annan.

1909¼ 4½h.p. F.N., magneto, footrests, h.b.c., new skid tyres, new gear, Brooks pan seat, registr numbers, all in excellent condition; £21.—No. 9 *The Motor Cycle* Offices, Coventry. Deposit syste

IF You Want to Buy or want to sell a motor bi- trical, sidecar, or anything in connection the motor trade, you should at once call at Dic one of the largest motor exchange places in Scotla Dickie's Garage, 68, Bothwell Circus, Glasgow.

ALEXANDER'S Motor Exchange, 272-274, Western Rd., Glasgow, agents for Indian, B Bat, Rex, Rex-Jap, Trump, Royal Enfield, Willia Rolfe, S.I.A.M.T., Levis 2-stroke, Norton, Lincola Canoelet sidecar; Scotland's largest motor cycle de lists on application.

ALEXANDER'S Motor Exchange, 113 and Lothian Rd., Edinburgh.—Agents for Ir Douglas, B.S.A., Zenith, Rex, Trump, Rex-Jap, P M., Royal Enfield, Norton, Bradbury, Willia S.I.A.M.T., Levis 2-stroke, Rolfe, Lincoln Elk; exchange offers; over 100 motor cycles in stock; land's motor cycle experts and largest dealers; ag lists.

1912 Motor Cycle Deliveries.—Zenith January, Abingdon January, Calcott lightweight Ju Rover February, New Hudson February; sidecar second-hand machines always in stock; exchanges tained; send for catalogues.—Dundee Motor and Co., Nethergate, Dundee.

EDINBURGH.—Scotland's motor cycle experts largest sellers. We are now booking order 1912 models; Indian, Douglas, Zenith, B.S.A., Pr Rex, Rex-Jap, P. and M., Lincoln Elk, N.S.U., Reve, Norton, James, Roc, Enfield, Trump, Bra Kerry, Williamson; liberal exchange offers and treatment.—Alexander's Motor Exchange, Lothian Edinburgh.

SECTION XI.

Ireland and Isle of Man.

TRIUMPHS, 1912 models, immediate delivery Bradburys, Rovers, Rudges.—Higgins, Athenry, Ireland.

1911 T.T. Triumph, that finished first single Tourist Trophy, special machine, large h.b.c. magneto, as new; £43.—Carvill, Trinity C Dublin.

MOTOR TRICYCLES AND RUNABOUTS.

1911 10h.p. Bedelia, used for demonstration trial or examination; £85, or offer.—Dan Weymouth.

3½h.p. Tricycle, Minerva, splendid condition, tionally silent; offers.—Amoe, Sara Villa, Rd., Margate.

FOR Sale, 8h.p. Morgan Runabout, lamps and complete, in good condition; owner buying Apply, 10, Hopton St., St. John's, Worcester.

F.N. 2¼h.p. Tricycle, late 1910, shaft drive, 2 clutch, fast and relinble, an ideal winter easily converted to bicycle if desired, good spares, etc., all in first-class condition; cost over take £30.—A.E., 2, Radcliffe Rd., Winchmore London, N.

QUADCARS.

MONOCAR, 8h.p., coach-built body, water- Bucket engine, 3 speeds, wind screen; £35; and particulars.—Dr. Wilson, Louth.

TANDEM Monocar, torpedo body, driver from 6h.p. J.A.P., 2-speed, wind screen; only seeing; £63.—Miller, Brentwood, Brighouse.

DUOCAR, nearly complete, new, 8h.p. twin air- and magneto, scuttle dash body, live axle particulars; cash £40 or exchange motor cycle an car, Triumph preferred.—E. Walster, Epworth, Dor

5-6h.p. Pattern Bedelia Duocar, 2-speed, J.A. gine, wants finishing, painted French grey, wheels, complete with tyres; exchange entertained absolute bargain.—Nicholls 4, Rustoo Mews, Hill.

TRICARS FOR SALE.

A.C. Tricar, fine condition, accessories, spare guineas.—R., 159, Clive Rd., West Dulwic

A.C.U. Owners should write Bass, Insurance Bishop's Stortford, for particulars of special

A.C. Sociable, delivered July, in new condition, and spares; best offers.—Myers, Nevilles Cros ham.

MONEY Needed.—Tricar, 2 speeds, chains, trol, nice condition; £10.—2, Madras, Kent.

6h.p. Quadrant, free engine, 2 speeds, wheel bucket seats; £15.—H., 44, Stanmore Rd., stone.

THE MOTOR CYCLE

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This Year's Tourist Trophy Races.

PERMISSION has been granted by the Tynwald Court to hold the great road races of the year in the Isle of Man, and we are glad to chronicle the news, as the island has always given us a hearty welcome and its roads offer a far better test for motor cycles than those of Northern France. In the telegram announcing the Tynwald Court's decision certain conditions are put forward, among them that steps will be taken to prevent competitors annoying people. This, we are sorry to say, is quite justified after what occurred last year, and we can only hope that the conduct of all concerned this year will be such that we shall have no occasion to refer again to the question of behaviour. The next condition is that silencers will be necessary and expected. This need not worry the authorities unduly. The A.C.U. has taken up a firm attitude in this direction, and in the T.T. and other events held during the year silent machines will be a necessity. Entrants and riders of noisy machines will be penalised by the judges. The third condition states that the course will be the old one—St. John's, Ballacraine, Kirk Michael, Peel, and back to St. John's. It is difficult to realise why the old course should be recommended, if such be really the case, as the mountain road course proved to be so immeasurably superior last year. As a test it was unrivalled, and both machines and riders were hard put to it. Will the splendid trial imposed upon change-speed gears be so easily forgotten? We think not. These most desirable devices proved their worth on this occasion to the whole motor cycle public with a rapidity and in a manner that could not otherwise have been attained. Most competitors were, through the severity of the course, compelled to fit them, and with a result that is now well known.

Although the race will be run this year without the support of the majority of the trade a good entry will probably be received, and if this be the case the short course will be overcrowded, and rendered more dangerous than the long one. It has corners enough in it in all conscience, and should bunching take place the danger would be very marked.

During the discussion as to whether or not the Tynwald Court would grant permission for the race to be held, we learn that a letter was read from the Manufacturers' Union urging the Tynwald Court to refuse permission for reasons which those members of the court who were in favour of holding the races are said to have described as "absolutely absurd, and which were easily answered." We have the highest respect for the Manufacturers' Union, but we certainly think that as practically all the members interested in the race have signed a bond not to compete in a T.T. Race in the Isle of Man they might have reasonably left the application of the A.C.U. to take its natural course without endeavouring to influence the Island authorities into a refusal. It is not too late for the bond signatories to change their minds, and if they do decide on such a unanimous action we are sure our readers would praise them. If they do not, a race between private owners will make a most sporting contest of the T.T. Race, and we urge them to begin sending in their entries at once. If the A.C.U. decide to make the races invitation events this year we do not see that it would detract from the number of entries, and their control of the competition would thereby be materially strengthened.

TWO-STROKE ENGINES.

ALTHOUGH the four-stroke engine for motor cycle work has a great numerical preponderance over the two-stroke, there is not the slightest doubt that the latter type of engine is winning its way to favour, which it may easily lay claim to by reason of its many advantages. It must not be forgotten, however, that there are disadvantages inherently connected with the two-stroke principle, and it is the intention of this article to discuss these engines from both points of view.

First of all, however, it is necessary to point out that the name "two-cycle" engine is a misnomer, both two-stroke and four-stroke engines working upon the Otto cycle of four operations, viz., suction, compression, expansion, and exhaustion. Hence, both are four-cycle engines, one carrying out the cycle of operations with four strokes of the piston, and the other with two strokes.

Two-stroke engines may be divided into two classes. First, those which make use of the space both above and below the piston, and employ, therefore, a crank chamber compression; secondly, those in which a separate cylinder is employed to perform the office of a pump. Examples of both types were shown at Olympia, the Scott, the Levis, and the Stuart coming into the first category, and the Wooler into the second. In this last case a single double-ended piston is employed both for power and for pumping, but the effect is exactly the same as if a separate piston and cylinder were employed for this secondary purpose, as in the case of the old Bichrone motor cycle engine, and Lamplugh and Dolphin engines which have been used on cars. Two-stroke motors belonging to the first type may be again sub-divided into two further classes, viz., those in which the piston performs all valvular offices, and second, those in which additional valves are employed.

The Engines Classified.

The two-stroke engines at Olympia could be therefore grouped as follows:

Type I.—With crank chamber compression.

A, without valves, Scott and Levis.

B, with valves, Stuart.

Type II.—Pump compression.

The Wooler.

Another mode of classifying the first group would be to describe the Scott and the Levis as engines of the three-port type, whilst the Stuart is one of the two-port type, and so also is the Wooler.

Although the arrangement of the ports in the Wooler and Scott is not the same, the principle in both these engines is identical, and a single description will, therefore, serve for both.

Before proceeding to this, however, it will be advisable to consider the essential differences between four-stroke and two-stroke engines. The advantages of the latter are as follows:

I.—Superiority of torque, the torque of a two-stroke engine being twice as good as that of a four-stroke engine with the same number of cylinders.

II.—Silence. A two-stroke engine need not have any other valve except the piston, and therefore noisy tappets and their gear are done away with.

III.—Ease and cheapness of manufacture, which follow upon the use of an engine with practically only three moving parts, viz., crankshaft, connecting rod and piston.

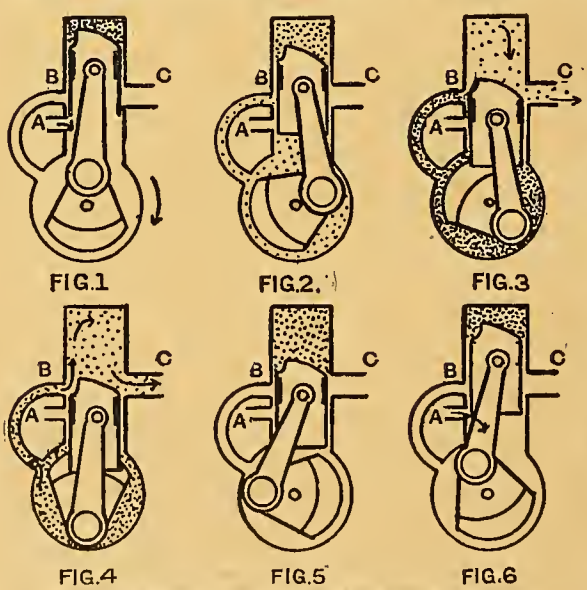
On the other side of the picture the disadvantages are as follow:

I.—Decrease of efficiency owing to the difficulty of obtaining a cylinder really full of explosive gas.

II.—Inflexibility, since if a crank chamber compression be used the suction upon the carburetter when the engine is running at low speeds is very slight, and the likelihood of leakage is enhanced.

III.—Difficulty of keeping the piston thoroughly gastight. This part acts not only as a piston, but as a valve, and slackness therefore makes its ill effects felt in two different ways. Hence in a two-stroke engine it may be reckoned that a given degree of slackness in the piston will cause at least double the loss of power that it would do in a four-stroke.

IV.—Difficulty of preventing the plug points being burned away, since there is no idle stroke during which they are cooled.



Diagrams of the Scott two-stroke engine showing the operations.

The Piston as a Valve.

Of the disadvantages only the third requires anything in the nature of an explanation. It will readily be understood that the piston cannot serve its two purposes equally well. As a valve it is essential that it be an absolutely tight fit in the cylinder, whilst if it were made so it would not be long before it would refuse to work under these conditions as a piston. A compromise has therefore to be struck, but help in this matter is obtained from a source which scarcely enters into the consideration of four-stroke engines, viz., the lateral thrust of the piston upon the cylinder walls. Looking sideways at a clockwise running engine (as in fig. 2), it will be realised that owing to the obliquity of the connecting rod, the piston on its power stroke exercises a thrust upon the rear wall of the cylinder. Whilst on the compression stroke the thrust is against the opposite wall. At no time during the stroke, however, is there any thrust on the sides of the cylinder walls, but only in front and behind. Since a certain degree of slackness in the piston is a paramount necessity, only by one means can its ill effects be remedied, viz., by so placing the valve ports that the side thrust of the piston ensures its covering them with as nearly as possible a gastight fit. Even if this be done, however, it will be realised that if this thrust be making the piston tight over one port it is making it slack over the other and *vice versa*. Any ill result from this cause, however, can be minimised by placing the inlet port on the back side of the cylinder, and the exhaust port on the front, as in this way any blow back to the inlet pipe is entirely prevented, whilst such leakage as there may be simply allows the gas to percolate through to the exhaust where it can do no harm.

Water-cooling.

Inasmuch as with uniform and efficient cooling slackness between the piston and the cylinder walls is produced with less rapidity and to a less grievous extent than if the cooling be not uniform, the best results so far as life and maintenance of power are concerned are obtained with water-cooled two-stroke engines, and this to an extent much more marked than in the case of four-stroke engines.

The accompanying diagrams show the working of the Scott and Levis engines,

Two-stroke Engines.—

the sections being diagrammatically those of a single Scott cylinder, which, however, differs in two important points from that of the Levis, in which the inlet port between the crank chamber and the carburetter is placed on the side of the cylinder instead of at the back, and that the cylinder of the Levis is not offset. The reference letters are:

A—Inlet pipe connecting crank chamber to carburetter.

B—Transfer port (shown larger than actual size) connecting crank chamber and cylinder.

C—Exhaust port registering with piston at the end of its stroke.

In fig. 1 the piston is at the top of its stroke, and explosion of the mixture above it has taken place, and is about to commence the power stroke. The crank chamber is also full of explosive mixture, having received a charge in a manner to be explained. The port at the top of the transfer passage is closed, and likewise is the exhaust port. The inlet port is open and the pressure inside the crank chamber is therefore atmospheric.

In fig. 2 the piston has descended through one-third of its power stroke, and the exploded gases are expanding above it. Its first act is to close the inlet port, and compression in the crank chamber now begins to take place, both crank chamber ports being closed. It will be realised that the volumetric capacity of the crank chamber is at its greatest when the piston is at the top of its stroke, and at its least when the piston is at the bottom of its stroke.

In fig. 3 the piston has descended through another third of its stroke. The transfer passage port and crank chamber inlet port are still both closed, but the exhaust port is commencing to open. Its own expansion causes at this point the major portion of the exploded gases to exhaust themselves.

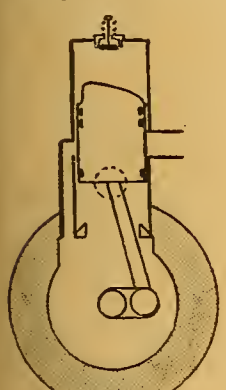


Fig. 7.—Diagram of the Levis engine.

A further stage of one-third of a stroke is shown at fig. 4, which represents the piston at the bottom of its travel. The exhaust port is now fully open, and a connection is established between the crank chamber and the cylinder by means of the transfer passage port having been opened by the piston. The gases which, in the two previous diagrams, have been compressed in the crank chamber are now forced through this passage, and strike the deflector at the top of the piston, which throws them upwards and enables them to force out what is left of the exploded charge through the exhaust port. The inlet port of the crank chamber is closed.

In the next stage, fig. 5, the piston is shown half-way on the up-stroke, when it is in the act of compressing the gases in the cylinder.

Since the piston is rising a negative pressure is being created in the crank chamber, and as the ports of the latter are entirely closed this pressure gets lower and lower as the piston ascends, until it arrives at the point shown in fig. 6, which represents the engine a few degrees before the top of the stroke. The inlet port is now suddenly opened by the bottom edge of the piston and gas accordingly rushes into the crank chamber from the carburetter. In the top of the cylinder the gases are compressed ready to be fired.

The principle of getting a considerable negative pressure in the crank chamber before allowing a flow of gas from the carburetter thereto is very desirable, since it makes the speed of the air past the jet very much higher and therefore better for carburation purposes than if on the crank chamber suction stroke the crank chamber were connected to the carburetter the whole time.

Special Scott Features.

The following mechanical details of the Scott engine deserve particular attention. In the matter of rings, the top of the piston is provided with the usual stiff ones common to all types of explosion engines, whilst at the bottom of its trunk it has a fourth ring the spring of which is quite light. The function of this ring is simply to prevent the leakage of gas between the piston and the cylinder walls, as for instance in fig. 2. Here the gases in the crank chamber are being compressed whilst the piston is being driven downwards by the force of the exploded gas above it. The side thrust of the piston is, therefore, on the left-hand wall of the cylinder, which means that while the inlet and transfer ports are totally closed any slack of the piston itself is all on the side which is intended to close the exhaust valve, hence unless there were a bottom ring the compressed gases in the crank chamber might easily escape into the exhaust port.

The next point is the exceedingly neat metallic packing which is used on the main crankshaft bearings in order to keep the crank chamber compression-tight. Briefly described, this packing consists of two hardened steel discs held together by a spring. The lubrication system includes an ingenious pump which is incorporated in this packing gland, but this was fully described in the issue of *The Motor Cycle* of December 21st.

In order to effect a release of the compression for easy starting, the Scott engine is fitted with a small mushroom valve. This is let into the cylinder wall immediately above the exhaust port. There is a very good reason for this position, which may seem to some otherwise inexplicable, namely, that here the valve (which is at best only occasionally used) is protected from the full force and initial heat of the explosion.

The Levis.

Diagrammatically, any of the previous figures 1 to 6 might be used to show the arrangement of the Levis, but as the ports are differently placed, the inlet port being at the side of the engine instead of at the back, a separate sketch, fig. 7, is given. In this it will be seen that the transfer port is cast in the lower part of the cylinder itself and runs parallel with its bore. It is accordingly opened when the piston is approaching the bottom of its stroke. The negative pressure developed in the crank chamber induces a rapid rush of air from the carburetter, the same as in the case of the Scott. The engine is air-cooled, and has a compression release valve situated in the cylinder head, where it is kept closed by a spring and operated from the handle-bar by a Bowden wire. One of the most interesting features of the Levis engine is that, owing to the ingenious system of lubrication, the crank chamber is kept free from oil, and accordingly the gas passed through the transfer port is as pure as possible. As indicated in the sketch, the crank chamber where it abuts against the base of the cylinder is furnished with a groove into which the bottom of the piston wall dips at the end of every stroke. Oil is fed to a port cast in the side of the cylinder, which port is level with the gudgeon pin at the bottom of the piston stroke. The gudgeon pin is hollow, and hence not only does the oil flow right through it to the further cylinder wall, but it also, in passing, lubricates the gudgeon pin bearings by means of transverse holes. Any excess of oil on the cylinder walls drips down into the aforementioned groove, whence it is conveyed to the main bearings through internal ducts. In consequence, the crankshaft bearings are thoroughly well lubricated, which, in conjunction with their great length, dispenses with packing. The crankshaft is hollow, and oil contained therein is thrown to the big end bearing through its internal ducts by centrifugal force.

As in the Scott, the piston is furnished with a ring at its base.

The Stuart.

We now come to two-stroke engines of the two-port type, of which the first example is the Stuart. The manner in which this engine is arranged is shown in fig. 8. There are two ports, viz., B, the exhaust, and A the inlet connected with the crank chamber through the transfer port. In the sketch the piston is shown at the bottom of the stroke, at which point the gases compressed in the crank chamber pass upward through the transfer port, strike the deflector at the top of the piston, and, in descending, hurry the exhaust gases out at the opposite side. After this, compression of the gases above the piston takes place in the usual manner, whilst, as soon as the piston covers ports A and B, the crank chamber, which now has a partial vacuum forming in it by the ascent of the piston, is placed in direct communication with the carburetter, which is connected to pipe C. Between this pipe and the crank chamber is a non-return automatic inlet valve which, on the descent of the piston on the power stroke, allows the gases in the

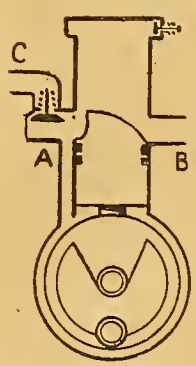


Fig. 8.—The Stuart two-port engine.

Two-stroke Engines.—

crank chamber to be compressed ready to be injected into the cylinder the moment the top of the piston uncovers the port B. This inlet valve is adjustable as to the length of its stroke, and is carried in a quickly detachable cage.

It will be seen from the design of the engine that the thrust pressure of the piston upon the cylinder walls is made of the utmost possible use, the only theoretical disadvantage being the employment of an automatic valve. The design of all engines is, and always has been, a compromise, and whilst the use of a valve has its disadvantages, as we shall show, nevertheless it has counteracting benefits. It is not to be denied, however, that a two-stroke engine containing valves is not, and never can be, suitable for very high speeds. On the other hand, the Stuart engine has been designed as a touring machine and not a racer. It therefore feels the disadvantageous effect of having a valve much less than if it were intended to be driven at high speed.

Disadvantages of Automatic Valves.

Assuming that the engine is run at the rate of 2,000 revolutions per minute, and that the opening and closing of the inlet valve is accomplished within the range of two-thirds of the piston stroke (as a matter of fact it is probably slightly less), this means that the valve has to open, let gas through, and close, within a period of approximately one-hundredth of a second. At very high speeds, therefore, it is clear that some attenuation of the inlet gases is unavoidable.

As shown in the sketch the compression release valve is fitted at the side of the cylinder head. the gas allowed to pass through it being directed into the exhaust pipe through a small subsidiary tube.

In order to provide against the risk of a back-fire occurring in the crank chamber, to which a two-stroke engine of the crank case compression type is subject when supplied with too weak a mixture, a special release valve is fitted on the crank chamber to allow any great excess of pressure to be released. A second valve is attached to the crank chamber and consists of a non-return one, by means of which positive pressure is directed to an oil tank and forces the lubricant through an adjustable sight feed on the top tube, to a port let into the back cylinder wall so as to keep the sides of the piston thoroughly lubricated.

The Wooler.

Fig. 9 shows the diagrammatical arrangement of the Wooler engine, which is of a unique type, possessing many points of interest. The cylinder is double-ended, as is also the piston, the

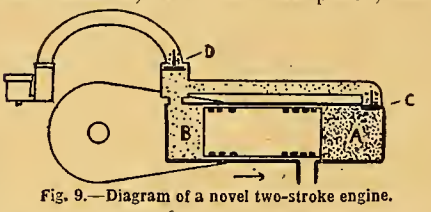


Fig. 9.—Diagram of a novel two-stroke engine.

end A being the working explosion cylinder, whilst B is a pump. For this purpose it is necessary to carry connecting rods outside of the cylinder, and they are arranged in plain form, as shown in fig. 10, which indicates how two slots are cut in the slides of the horizontal cylinder walls in order to allow the gudgeon pin bearing to pass. It will be remembered that a somewhat similar device was used in the two-stroke engine of the Wall Auto-wheel. The piston is to all intents and purposes a hollow cylinder closed at each end, one of the notable points in connection with the Wooler engine being that the gudgeon pin is fixed to the connecting rods and turns in the piston, which is specially bushed for this purpose. The ends of the pistons have no baffle-plates, and are provided with no less than seven rings—four at the explosion end and three at the other. The *modus operandi* is very simple, and requires no explanation at all. if the pump cylinder be regarded as the crank case of the previous diagrams.

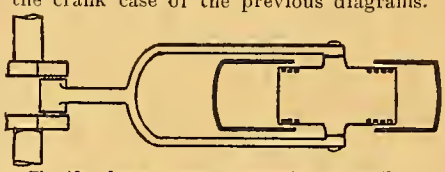


Fig. 10.—Arrangement of connecting rods on the Wooler engine.

There is, however, one important difference between the Wooler engine and the others already described, namely, that in this case there are two automatic valves—one is placed in the cylinder head and is a real inlet valve, the other is situated at a branch of the transfer pipe and carburetter and merely performs the function of a cut-off valve. The exhaust port is cast with the cylinder at the bottom of the piston's working stroke. When the piston is moving from left to right, as shown by an arrow in the diagram, a negative pressure is created in the pump cylinder. The check valve D accordingly opens, thus allowing the suction to have effect upon the carburetter, and accordingly the pump cylinder is filled with explosive gas.

On the return stroke—that is to say, when the piston is moving from right to left—this gas is forced from the pump cylinder into the transfer pipe, where its pressure immediately causes the valve D to close. The pump pressure is accordingly accumulated in the transfer pipe until, the piston having uncovered the exhaust port, the explosion pressure is reduced in the firing cylinder sufficiently to allow the pressure in the transfer pipe to open the inlet valve C. The fresh gases rushing in, scavenge the cylinder by helping to force the exhaust gases through their port, and incidentally cooling and cleaning the sparking plug points, which are wisely placed immediately in the stream of cool fresh gas.

The complete cycle of operations takes, of course, only two strokes, since on the one there is induction of gas in the pump and compression of gas in the working cylinder, and on the other exhaustion of gas from the pump and explosion of gas in the working cylinder.

It will be at once realised that there is one great advantage of the Wooler engine and one great disadvantage. To take the latter first, it consists, as explained in the case of the Stuart, of the difficulty which two automatic valves have of acting adequately in the very short space of time allowed them.

On the other hand, without introducing any additional working parts, crank chamber compression is done away with in favour of a piston pump in which, of course, the clearances are much less and whose efficiency, both as an inducer and a supplier of gas to the cylinder, is accordingly much better than the more usual crank chamber arrangement.

Both of these points are of very great importance—indeed the whole future of this engine depends, one may say, upon whether the value of the pump can be made to counteract the effect of the automatic inlet valves. It may, however, with no injustice be pointed out that incidentally a second disadvantage is introduced by the number of additional working parts and the consequent manufacturing difficulties and costs which these two valves introduce.

W.G.A.

A RUN ON THE ROLLO.

A VISIT to the Rollo works at Conybere Street, Birmingham, proved a revelation in the manufacture of quadcars. We found them small but extremely well equipped works, which, by reason of their system of jigs and the up-to-date lines on which they are run, are capable of producing as many as ten machines per week.

For a detailed description of the Rollo quadcar we refer our readers to *The Motor Cycle* of November 30th, page 1316. Changes of gear ratio are effected by means of expanding pulleys, the belt slack being taken up by a movement of the rear axle. These two operations are synchronised in a simple and ingenious way, and are brought about by the movement of a single lever. An unusual feature for this type of gear is that by merely depressing a pedal a free engine position can be obtained without altering the gear, the depression of the pedal temporarily disconnecting the rear axle sliding motion and expanding the pulleys to their full extent.

A short run convinced us that the machine is very practical, and handy in traffic. The tandem body is well suspended, and, in spite of the fearful state of the roads we traversed, we suffered from no unpleasant jars. The engine pulls well, and when travelling the vibration is scarcely noticeable. We made a standing start on a gradient of about 1 in 15, with the road covered in snow and slush. The engine took up the load smoothly and easily, and seemed to have plenty of power in hand.

The new 3½ h.p. Swift is, we understand, receiving a hearty welcome at the hands of the public. The Swift Cycle Co. is in the happy position of being able to guarantee an early delivery of this popular model.

Occasional Comments

by "Ixion"



Foot-starters.

It would be interesting to hear whether any users are having trouble with a common type of foot starter, on which the starting chain is out of line in one position or the other. We do not want to import another uncovered free wheel clutch, just when that tiresome fitting has been eliminated from the back spindle, and as a consequence many kick-starters are freed by sliding one of the sprockets laterally, *i.e.*, putting it out of truth; the shortness of the chain accentuates this lack of alignment. On most devices of the kind the alignment is true when the starter is being used, and out of truth when the starter is freed. This should not matter appreciably, provided the sprockets are lined up gently, before the sudden starting shove is given. But I noticed more than one device at Olympia which threw the jerk on the chain in its out-of-truth position, and considering the short centres, I expect these devices will be aggravating in use.

The best starting device I ever used was a strap starter on a 1902 quadricycle. As delivered, the strap was loose and normally carried in my pocket. A hole in the strap was hitched over a peg on a drum keyed to the gear spindle, the strap was wound round the drum, and then "pulled off"; before long we modified the device by attaching the strap permanently, adding a spring winder and a clutch to free the drum, after which the starter proved delightful; even a backfire could cause no trouble. A similar device, but very much improved, might be adapted to a motor bicycle, the strap ending in a stirrup resting in a stop on the right hand side of the machine at about the height of the tank bottom.

Rear Fork Adjusters.

A reader has sent me specifications for a patent covering a very simple form of adjuster, designed to set the rear wheel at varying distances from the engine, the adjustment allowing a range of two inches movement, without rendering the back wheel more difficult to detach. His idea is that such a device should be immensely serviceable on single-geared pedalless machines whenever the belt slips.

He points out that when a belt slips on such machines the rider chooses between (a) screwing up his engine pulley, which gives a higher gear ratio than is desired, and (b) cutting the belt, a messy and fiddling job.

There are two objections to his solution. The first is that the addition of his fitment will cost the manufacturer money for which there will be no adequate return; these detail refinements please the fastidious customer, but they seldom influence his choice of a machine, and the appeal they make is not sufficiently strong to justify increased prices; the other defect is that the periodic shortening of a belt, first at one end and then at the other, lessens the danger of a fastener screw pulling through. I doubt whether such a device can become commercially remunerative.

A Free Engine Refinement.

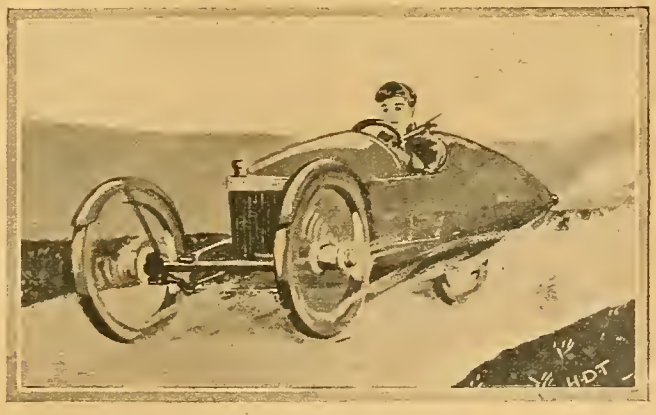
One or two of the latest free engine patents make allowance for rigid locking of the clutch, in the event of the friction surfaces being too small or becoming so slippery that the clutch fails to hold under a heavy load. I doubt whether this refinement possesses a future. If the contact areas of a clutch lose their efficient surface, it is usually possible to adjust the springs so that a driving grip is maintained; if they be too small it is surely a fault in design. Many years have elapsed since I was stranded with a permanently slipping clutch on a motor cycle.

Starting in Deep Snow.

The recent snowfall in the Midlands and North illuminated some of the difficulties of riding a motor bicycle with nearly a foot of snow on the ground. Once started, it was by no means impossible to make progress, for the soft feathery snow offered no very serious resistance to the passage of the machine, and if it was a trifle skidsome, its lightness presented no such difficulties as deep sand may do.

The real bother was to get started. It was difficult to push off a T.T. mount at sufficient speed to get the engine going, and when the engine fired there was always an exciting moment when the rider was poised between road and saddle—feet slipping and machine swerving during the second occupied in mounting. The free-engined men were little better off, for the back wheel spun round furiously in the snow when the load was applied.

In level districts the lightweights scored, because they were handier to start but they had not sufficient power to plough up gradients through the deep wet snow. In hilly neighbourhoods several riders with handlebar-controlled clutches report successful runs; they contrived to get under way by starting the engine, and gradually letting in the clutch by hand as they walked briskly alongside the machine. But emphatically the sidecar and quadcar men had the easiest time.



Our artist's idea of a stream-line body fitted to a three-wheeled runabout.



By W. Fawcett

TO THE TYROL AND BACK ON MOTOR CYCLES

(Concluded from page 88.)

In plain language, the surface of the Simplon pass is a disgrace—bumpy, loose, unrolled stones, and although the road rises just under 6,000 feet in twenty-four miles, this gives very little idea of the steepness, as there are several bits of level and some actually downhill.

Soon after leaving Gondo we entered the famous Gorge of that name, and the rocks tower over one's head on either side to a height of 2,000 feet. Shortly afterwards the Tressinone waterfall dashes down on the right hand and dives under the road, the spray blowing in your face. Almost before it is out of your eyes you enter a long tunnel having a bend in it, and the up grade on a greasy surface makes the fun furious while it lasts.

A few miles more of this bumpy road and I was pulled up, first with misfiring, due to a particle of metal across the plug points, and then again by a tumble on some unrolled stones. Once at the top we had coffee and rolls and a look at the Hospice, as we had plenty of time to spare.

All around the view is magnificent. The gigantic Jungfrau, Nesthorn, and other peaks, with their snow-clad summits, make an ideal picture, whilst the Aletsch Glacier, which, I believe, is the largest ice-field in the Alps, must not be forgotten.

A little further on we both took our belts off and free-wheeled for miles. We soon came to an avalanche tunnel or two, one in particular where a mountain torrent dashes over the roof and makes the road surface treacherous, for the water leaks through. The road was washed away in places, and one could plainly see where floods had recently swept all before them.

Swiss Motorphobia.

Again were we forcibly reminded of the Swiss anti-motorist feeling, for, too late, I saw some broken glass, business end upwards, carefully placed all across the road. Hastily putting up my hand I was too late to stop Billy, and a little time was spent in removing the glass and examining our tyres, which fortunately seemed none the worse.

Brigue was reached at last, and after the examination of our permits, to see we had not done the twenty-four miles under four hours, we were permitted to continue our way, but before doing so we made a point of reporting the glass incident.

Filling up with petrol at Brigue, we soon found the road improving, and we set off at a fair pace to make up for those six miles an hour. A practically straight road with the Rhône for company through Visp, Sierre, Sion, Martigny-Ville, then to the right and straight on again through St. Maurice, and we were asking for St. Gingolph, our destination for the day, but it only brought an uplifting of the eyebrow. Trying another person we were greeted with a blank stare. This was getting beyond a joke. Each time I pronounced it differently, so I decided to give the ladies a chance, but they actually ran, in desperation. I tried an old man in a doorway, and gave him all the variations of pronunciation I was capable of and waited. A smile came over his face, and he said, "Ah! Sangangolf!" all in one breath. Yes! just like that, "Sangangolf." At last we arrived at St. Gingolph, which is at one end of Lake Geneva.

We put up at the Hotel Terminus after a run of 116 miles, and found it the cheapest little hotel we stayed at, whilst the food and, Billy said, the wine were excellent.

Next morning I awoke to hear the rattle of open exhausts, and, rushing to the window, I saw about a dozen push cyclists stripped for the fray, with a car following bearing the official banner, whilst half a dozen motor cyclists rattled along in the rear. For hours we watched the race; it seemed to be a push cycle T.T., and many a competitor dashed up to a fountain near, jumped off his machine, ducked his head in the water, and was off again. One unfortunate punctured near us as we took our breakfast on the verandah, and I noticed his tyres were of the single tube variety, and that he wrapped insulating tape round and round the hole; his wheel also had a sprocket either side for altering the gear—another dodge!

Relaxation at Geneva.

Into the saddle once more—this time Billy leading—and so through Evian-les-Bains. I soon came to a fork in the road. Which was the way? My map showed no such fork, so, thinking Billy must be hugging the lake side, I did the same. Two more forks, and still I did not see him. Then my front tyre went down. I found the puncture and put a patch on, had a smoke, and put the tube back. Then I found my pump would not work, and many minutes were spent in faking it up.

Round every corner I expected to see the Bradbury propped up whilst its owner regaled himself with peaches and figs, but it was not to be, and I got quite anxious because, although we had arranged to stay at Geneva—it was only a few miles further on—we had not settled on which hotel, as there were several in the C.T.C. book. The reader will perhaps remember that we had been through Geneva on our way out, so I decided to make for the *café* where we had stopped for afternoon tea, and leave my bicycle in a prominent position and see if Billy turned up.

To the Tyrol and Back on Motor Cycles.—

I slowly crept through the traffic and over the bridge that spans the lake, and up what appears to be the main street, and so to the *café*, where I was surprised and glad to see Billy. The reason of our losing each other was that Billy had stopped in a very shady spot to locate a "squeak," and, as I passed, he waved to me to stop, but I was bending down to read my cyclometer. Hastily hopping on to his machine, he sped after me, but was almost immediately pounced upon by a customs officer, and made to turn the whole of his effects out, whilst he fretted and fumed to no purpose; after this, by taking a different fork, he had passed me when I was mending my tube.

We put up at the Hotel Terminus Baur after a short spin of thirty-seven miles.

That afternoon and the next day were spent in Geneva, on the lake, over at Luna Park—a kind of White City, with joy wheel, water splash, etc.—whilst the Kursaal kept us captive for the evening with a little play at "Petits Chevaux," till I found the odds were nine to one against winning, while if you won you only got six to one, which was not good enough for me.

The day before leaving Geneva we visited the C.T.C. consul, C. W. Mason, M.A., who gave us much valuable information about the roads we were to traverse.

Tuesday, August 1st, was gloriously fine, and we set off through St. Genis and Bellegarde, on the best road we had met with since leaving England. The scenery was very pretty, and we gradually entered a cleft in the hills, which drew nearer and nearer together till they almost met. When they seemed as though they were going to meet, we came across some fortifications, and we suddenly went over a drawbridge into what appeared to be a courtyard, much to a soldier's astonishment, and out at the other side. This, I understand, was Fort l'Ecluse, and would have made a perfect little picture, but I dared not risk an exposure. I do not remember if it was before or after this that we came to the French-Swiss frontier, where we again showed our C.T.C. tickets, but we were made to unpack.



A view of Lake Como, one of the beauty spots of Italy.

France Again and Good Roads.

Quickly we sped along, through Nantua and a bit of bad road, through Thoirette, when we were lost on a road that was apparently too insignificant for my map, but, though narrow, it had a fairly good surface, whilst the country was of the wildest, for we were now in the Jura mountains. We were enjoying ourselves, and did not care as long as our petrol held out and we could get a decent hotel to stay at if night came on. We eventually reached Bourg, and now locating ourselves on the map, we chose a good straight road and headed north, passing Montrevel, St. Trivier, Cuisery, and so into Châlon-sur Saône, where we put up at the Grand Hotel. This is the second time I have been to Châlon, and I may say, if possible, I should in future avoid it, as it appears to be devoid of interest. The day's run was of 125 miles.

Wednesday, August 2nd, and another glorious day, we set off on a road I knew from experience to be good. Passing through St. Leger, and just outside Autun, Billy ran short of petrol, but he scorned my proffered liquid, having got sufficient by lifting the front wheel up to carry him into the town. Tanks full up once more we again set off, and reached Saulieu, then Avallon, and after mending three punctures in Billy's tyres with patches cut in two to make them spin out, we reached Auxerre without further incident after a day's run of 118 miles, and put up at what I had previously found to be a good hotel—the Hotel de l'Epée.

Leaving next morning, we made good time through Joigny to Sens, then the Forest of Fontainebleau, when we were brought to a halt in a large clearing with no less than seven roads joining, and had some difficulty in deciding on the correct one.

A swift run to Corbeil followed, and then, having taken a wrong road, we had to cross over the Seine and go up a wicked cobbly street, in which Billy had to tie his stand up, as jolting over the awful *pavé* had loosened the fastener. Proceeding through Juvisy, we came to Choisy, where the Eiffel Tower could easily be seen as we turned to the left and struck a good tarred road to Versailles. The roads here and to St. Germain beggar description, being composed of huge sets, with deep holes where several are missing. A community that tolerate such a road must be only half civilised. Three times before reaching our destination had I to mend punctures, seemingly due to the awful bumps breaking the canvas and then rubbing through the tube. At last we reached our stopping place for the night, the Hotel du Soleil d'Or, after a cool run of some 137 miles to Pontoise.

Friday, August 4th, was the next day, and saw us leaving for our last day's run on French soil. Through Meru to Beauvais, Grandvilliers, the road was composed of loose scraps of flint, as sharp as arrow heads. A car or two were passed with tyre trouble, whilst several times wrappings off new tyres could be seen by the roadside. I was not to escape, however, for three times had I to mend punctures. Passing Poix, a

To the Tyrol and Back on Motor Cycles.—

swift run to Abbeville, and more petrol at Montreuil, we eventually arrived at Boulogne, and made for the Grand Hotel du Nord, after a day's run of 136 miles.

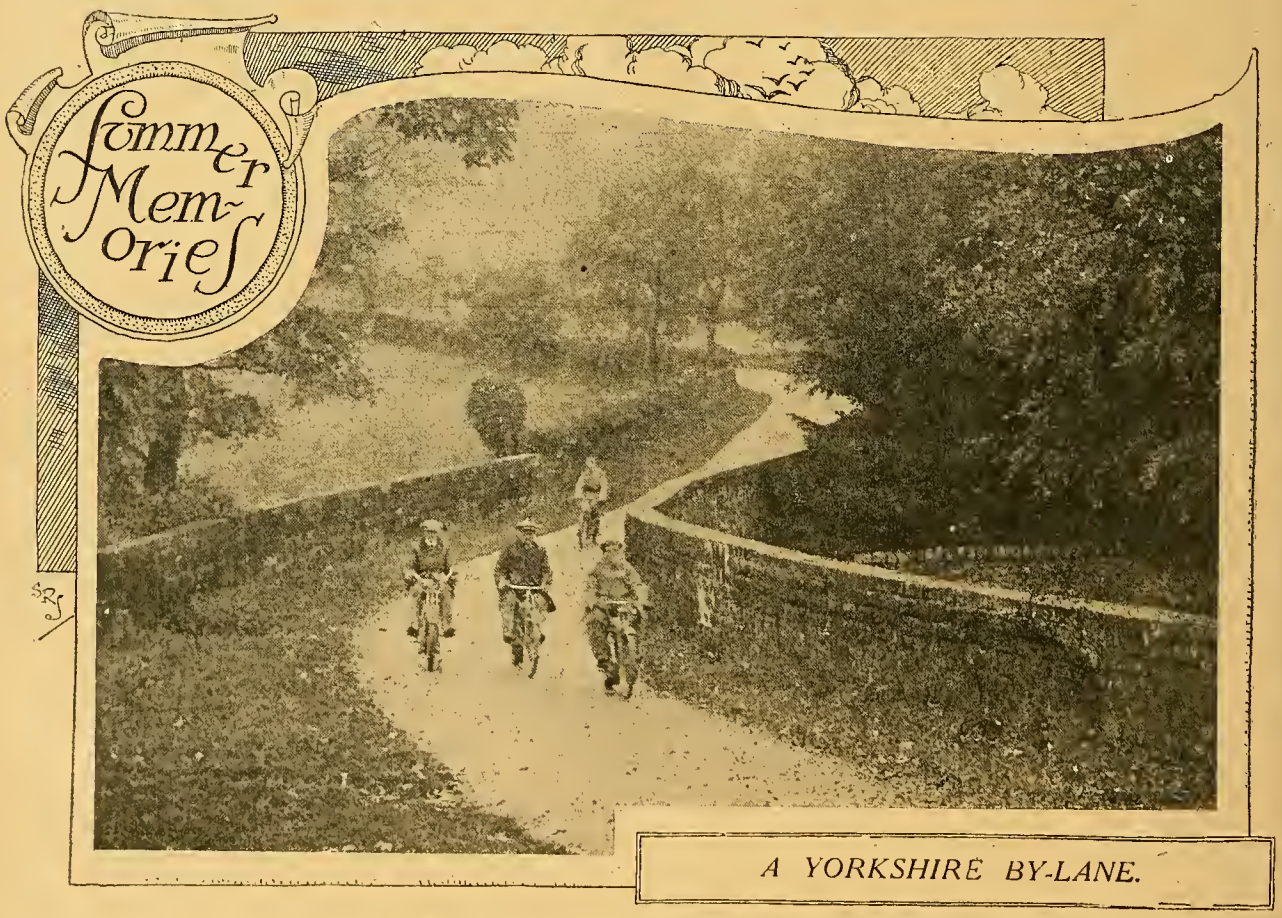
Next day was spent at Boulogne, and we booked passages by the Bennett Line to Hull, as it was nearer home, and saved a tedious run up the Great North Road. We paid 10s. each for ourselves and only 3s. 6d. each for the machines. What a contrast to the Folkestone-Boulogne crossing!

Rain came on as we entered the Humber the following day, and was still with us as we landed at Hull at 4.30 p.m., after a pleasant passage of 18¾ hours.

We were allowed to keep the petrol in our tanks on board, and this sufficed to take us to the nearest garage, where we filled up for 2s. 4d. How trifling this sum seemed after what we had been paying.

Our tour had taken exactly four weeks, the distance covered being 2,250 miles per cyclometer. Our combined petrol bill was £5 1s. 6d., while I used three quarts of oil and Billy used four and one-third quarts. The ⅞in. Lyso I put on to start with carried me throughout, which, I think, speaks for itself. Grange used two, changing over now and again, one having been well used before starting.

In conclusion, if any reader would like any further information as to roads, etc., I shall be pleased if he would communicate with me through the Editor



A YORKSHIRE BY-LANE.

THE NOMINAL HORSE-POWER OF MOTOR CYCLES.

IT will be seen by referring to our correspondence columns of last week that Mr. A. Citroen agrees with me that a motor cycle engine develops 1 h.p. for every 100 c.c. of its cubic capacity. If this be true then the horse-power can easily be found by referring to *The Motor Cycle* cubical capacity table and placing a decimal point after the first figure. This will give a very satisfactory rating, practically the same that the Dendy Marshall formula—which in my opinion is best suited to our purpose—gives if the revolutions be taken to be 1,570 per minute. This gives a speed of nearly 27 m.p.h. with a gear of 4½ to 1, and in the case of a lightweight geared 6 to 1 the pace would be nearly 21 m.p.h., which, I think it will be admitted, are fair average speeds.

The R.A.C. rating probably gives better results in the case of motor cycles than of cars, for the simple reason that there is not the same difference between the bore and stroke, the ratio seldom exceeding 3 to 2, whereas on cars it is sometimes nearer 3 to 1.

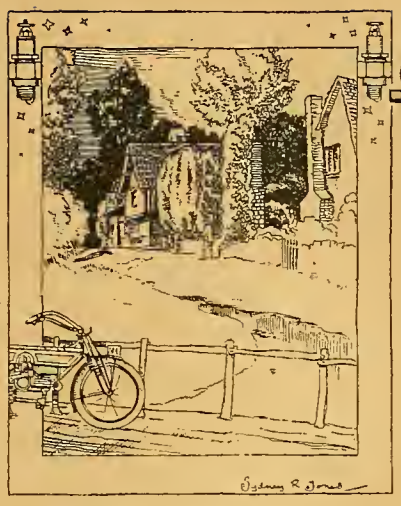
Mr. Poppe's formula has the merit of simplicity, but for our purpose must be ruled out of court, for it gives the Triumph engine as 4.67 h.p. and the Enfield lightweight as 5 h.p., which is obviously incorrect, the Dendy Marshall at 2,000 revs. per min. rating these engines as 6.36 h.p. and 4.37 h.p. respectively. Mr. Lanchester's formula is rather more flattering to the little twin, for it rates it as 4.47 h.p., and the big single as approximately 5 h.p.

AURIGA.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply.

Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.



Tunbridge Wells to Barnstaple.

Please inform me the quickest route from Tunbridge Wells to Barnstaple; the mileage and the time it would take a 3½ h.p. machine?—WAITING.

Your best route would be as follows: Tunbridge Wells, East Grinstead, Crawley, Horsham, Billingshurst, Petworth, Midhurst, Petersfield, Winchester, Stockbridge, Salisbury, Hindon, Wincanton, Langport, Taunton, Wiveliscombe, Bampton, South Molton, to Barnstaple. The distance is approximately 210 miles. To do the journey comfortably you would require two days this time of the year.

Crankshaft or Countershaft.

I shall be glad if you will give me your opinion on the following two-speed gears for fitting on to a 1911 free-engine Triumph for solo work only: (1.) Bowden. (2.) N.S.U. The Triumph people advise N.S.U., but say it is liable to be broken if the machine falls on the left-hand side, a very possible contingency. Are they both easily attached?—R.D.C.

Either of the two-speed gears mentioned in your letter would suit your purpose—both are good. Naturally, the engine-shaft gear is liable to damage in the case of a sideslip, if the machine falls on its left side. Both gears mentioned are easily attached. See the article on "Variable Gear Position" in our issue for September 14th.

A Cheap Machine.

(1.) Please let me have your opinion concerning the general reliability, and also speed and hill-climbing capabilities of the 5½ h.p. Lincoln-Elk motor cycle? (2.) Also, how is it that this machine can be turned out at such a comparatively low price? (3.) Will you please also let me know the shortest route from Newport (Mon.) to Leighton Buzzard (Beds.) regardless of hills or condition of roads?—E.L.S.M.

(1.) We are receiving quite good reports concerning this machine. What you had better do is to write for readers' experiences enclosing a stamped and addressed envelope in which the replies may be sent to you? (2.) We are not prepared to answer why it can be produced at a low price, unless it be that the makers are content with only a small profit. (3.) The route you require is Newport, Chepstow, Gloucester (take the Cirencester Road and turn to left at the fork having passed the cross roads at the foot of Birdlip), Northleach, Witney, Oxford, Thame, Aylesbury, to Leighton Buzzard.

Portsmouth to Chatham and Ipswich.

Would you please inform me as to the best route from Portsmouth to Chatham, also from Portsmouth to Ipswich, avoiding London, and alternatively the best route through London, giving total distances?—W.P., R.N.

Your best route would be as follows: Portsmouth, Petersfield, Liphook, Godalming, Shalford; here turn right and go through Shere, Gomshall, Dorking, Reigate, Redhill, Oxted, Westerham, Riverhead, Wrotham; after which turn left for Rochester, whence you reach Chatham. Be exceedingly careful in Godalming, Shere, and Gomshall, and also in the ten-mile limit at Redhill—102 miles. This is the main road, but it is easy to avoid Godalming by turning sharp to the right at Milford, going past Milford Station, and taking the left at the cross roads about a quarter of a mile further on. This road will take you to Shalford. Portsmouth to Ipswich: You can follow the same route until after leaving Wrotham, where make for Gravesend; take the ferry to Tilbury, and go north *via* Billericay, Chelmsford, and Colchester to Ipswich. To go *via* London, which, in our opinion, would be undesirable from a motor cyclist's point of view, you had better go straight up the Portsmouth Road, through Kingston, where be careful on account of police traps, and reaching Putney Heath go through Roehampton, across Barnes Common to Hammersmith. Go straight down Hammersmith Road, down Holland Road, crossing over the bridge close to Olympia, which will lead you into Notting Hill Gate. Go up Notting Hill and straight on to Lancaster Gate, where turn off for Oxford and Cambridge Terrace; go straight down Oxford and Cambridge Terrace, crossing over Edgware Road, turn to the left down Lisson Grove and go straight on over the railway bridge until you come to a place where the road bends round easily to the right. At the end of this turn left and you are in Finchley Road. Go straight on along the Great North Road through Hatfield. Beyond the station turn right and go through Hertford, Ware, Bishops Stortford, Dunmow, Braintree, Colchester, and Ipswich. The total distance would be approximately (*via* Gravesend) 160 miles. In giving this route, we have considered road surface, etc. The main route *via* Romford, Brentwood, and Chelmsford is very unpleasant near London, but is twenty miles shorter.

High and Low Tension Magnetos.

(1.) I shall be obliged to you if you will kindly explain clearly the difference between high-tension and low-tension magnetos. (2.) Being in possesion of a low-tension magneto I wish to know how I can convert it into a high-tension magneto?—J.S.J.

(1.) If you will get a copy of "Motor Cycles and How to Manage Them" obtainable from these offices, price 1s. 2d. post free), you will see the two types of magneto clearly described. In the high-tension magneto the primary and secondary windings are both on the armature, and a spark is produced at the plug without other help. The old type low-tension magneto had a make and break in the cylinder. Another type produces a low-tension current which is transformed by the use of a separate induction coil. (2.) It is practically impossible to convert a low-tension into a high-tension magneto. It would mean a new armature, and a special contact breaker, and condenser, and it would in the end cost a good deal more than buying a second-hand high-tension magneto.

Sidecar for India.

(1.) Please let me have your latest experiences with regard to the T.M.C., as I am thinking of buying one while at home, and then taking it out to India? If it is liable to overheat, I rather doubt if it would be much use for the work I want it for, *i.e.*, shooting trips—carrying gear possibly in a sidecar—over pretty rough roads. (2.) Also any experiences with the Scott two-stroke would be useful—L.L.M.

(1.) The machine about which you refer to in your letter has been entirely reconstructed and redesigned for 1912, and the first batch will be placed on the road about April. The machine is now water-cooled and shows every indication of being a splendid machine for sidecar work. It is, however, impossible to give practical road experiences at the present time. (2.) With regard to the two-stroke machine mentioned, we have had considerable experience with this, and may tell you that our opinion of it is high. What we should advise you to do is to write us a letter asking for readers' experiences of both machines referred to, enclosing a stamped and addressed envelope for replies.

Easy Starting and Slow Running.

Please advise me what is the best thing to do with a 3½ h.p. single-cylinder magneto machine quite modern. I have trouble starting unless engine is warm, and cannot drive very slowly through towns, etc. I do not want to spend much. Could I have a clutch fixed? Two speeds would cost too much I am afraid.—T.R.S.

You might take the magneto down and clean the slip ring and the contact breaker and touch up the platinum points. Use a good plug and adjust the points with a magneto plug gauge which is ½ millimetre thick. Take care to exclude most of the air from the fixed air supply to the carburetter at starting, and we think the engine will fire without much difficulty. You could have a clutch fixed to the engine-shaft if you desire it.

Taxation and Registration.

Acting on your advice I have paid the tax for 1910 on the motor bicycle sold by me in that year, but as I omitted to cancel the registration (not knowing it was necessary) the City of Dublin registrar maintains that I am liable to pay the tax on that machine for the years 1911 and 1912. Also he states that the tax is due whether the machine is used or not. Please advise me further.—S.H.L.

We do not think that you are liable for the tax for the two years during which you neither owned nor rode the machine. A machine which is kept but not used is not liable to licence duty; see the case L.C.C. v. Fairbank, Justice of Peace Reports, Vol. 75, page 356. We think you would be well advised to bring the matter to the notice of the legal adviser of the Irish Automobile Club, if you have not already done so. You ought, however, to have cancelled the registration of the machine you sold. Article IV. of the Regulation and Licensing Order, 1903 says, "If the ownership of a motor car (or cycle) is changed, notice of the change shall be given either by the new or old owner to the council with whom the motor car (or cycle) is registered, and an application shall also be made either to cancel the registration or to continue the existing registration under the new ownership."

Four Cylinders.

I want to get a second-hand motor cycle about £25 to £30. I have had an old 3½ h.p. four-cylinder F.N., but found that steep hills were too much for it. (1.) Do you consider a later model 5-6 h.p. for the price mentioned would be a good one and take all hills with automatic carburetter? I do not mind the slight extra bother of four cylinders and hate the idea of having a belt to look after. (2.) The 2¼ h.p. two-speed F.N. What sort of machine is it, and would it be suitable for week-end touring? (3.) Theoretically, is it more economical to run on an open throttle and small jet or ordinary jet and partly closed throttle? I wonder whether a B.B. variable jet carburetter would be more economical than the automatic one on the four-cylinder F.N. if run on quite a small jet for ordinary flat roads with ample reserve opening for hills. (4.) Theoretically, which should be the more easily slowed down, a big single-cylinder or four small ones of same total power? (5.) Do you advise going to a dealer or private man?—J.F.G.B.

(1.) The machine in question will be good value for the price asked for it, and the 5-6 h.p. is a great improvement on the old 3½ h.p. (2.) The 2¼ h.p. referred to is well-made, quite reliable, and suitable for the purpose mentioned. (3.) It ought to be more economical with a small jet than with a large one. You could not get quite the same economy with a larger jet even if you ran with the engine throttled down. There seems to be little doubt that you could get better economy with the carburetter fitted with hand-controlled air, but the firm's own automatic type is better for all-round work. (4.) Theoretically, the four-cylinder would be more easily slowed, as the instant the power is withdrawn, say by switching off or raising the exhaust valve, the increased internal friction quickly slows down the speed. Also, the four-cylinder can be run very slowly. (5.) Good bargains may be obtained from either.

Harrogate to Leominster.

I purpose making a journey to Leominster from Harrogate, and should be greatly obliged if you would advise me as to the best route for surface? I have previously been as far as Crewe, *via* Huddersfield, Ashton-under-Lyne, and Stockport; this route I am anxious to improve upon owing to the many miles of large paved sets in the neighbourhood of the two last named places, as I shall have a sidecar and passenger.—F.G.

Your best route would be as follows: Harrogate, Wetherby, Aberford, Ferrybridge, Doncaster, Retford, Tuxford, Newark, Grantham, Colsterworth, Stamford, Kettering, Northampton, Weedon, Daventry, Southam, Warwick, Stratford-on-Avon, Alcester, Worcester, Bromyard, to Leominster. This is, of course, a fairly long way round, but you miss all the big towns, and have a good surface.

READER'S REPLY.

Multi-pole Sparking Plugs.

I think if your correspondent "T.W.," whose enquiry was published on January 18th, would fit plugs with longer reach, he would be able to start easier. I have done so with advantage in my Douglas machine.—ROBERT RANGER.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"Reader." (Sunderland). Mabon change-speed pulley and clutch with 3½ h.p. sidecar.

"H.V." (Tufnell Park). 3½ h.p. 1912 Corah-Jap roadster and T.T. models. Senspray carburetter, reliability and power.

"C.R.T." (Birkenhead). X'LAll saddle.

"W.S." (Lancaster). 2¼ h.p. Lincoln-Elk.

"J.M.S." (Kendal). 5 h.p. T.T. Bat or Matchless with Amac carburetter, particularly with regard to slow running and fast hill-climbing.

'A.J.S." (Billericay). 3½ h.p. Bradbury clutch model.

"P.J.B." (Dublin). Atlas puncture-proof inner case.

"H.T." (Catterick).—2¾ h.p. Douglas two speed and free engine.

"A.V.G." (Hyde Park, W.)—5-6 h.p. Clyno and 8 h.p. Matchless with and without sidecar.

"B.W.D." (Emsworth, Hants).—2½ h.p. A.J.S. and 2¾ h.p. Douglas, two-speeds.

"W.G.G." (Islington). Canoelet sidecar with 3½ h.p. motor cycle.



WINTER SPORTS IN GERMANY.

The above photograph, which was taken recently in Grunewald, near Berlin, depicts a boy on ski being towed through the streets by a motor cyclist. This is a common yet exciting form of amusement.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Daventry to Southwold.

Sir,—With regard to "A.J.M.'s" projected ride to Southwold (January 18th, page 78), may I suggest as preferable an alternative route from Bury onwards, namely, to follow the road which goes about N.E. through Ixworth to Scole, then to Harleston—which he need not go through—then through Metfield to Halesworth, and thence to Southwold. The distance this way is about forty-eight miles, as opposed to fifty the other, and the roads are certainly preferable, for I have been both ways, the one I propose several times. From Harleston to Halesworth the road is much better than it looks, and I have known it to be the best bit between Cambridge and Halesworth, except for the thirteen miles from Cambridge to Newmarket. The road from Halesworth to Southwold is better than from Blythburgh to Southwold.

NORMAN K. ROSCOE.

The Evolution of Transmission.

Sir,—Dr. C. S. Patterson, in his letter to you of Jan. 18th, page 75, asks: "What about the big end of the connecting rod going?" and I ask: Well, what about it? Is that to be compared with a seized piston? I should say, certainly not. He then quotes something that happened on a chain-driven car. Surely that has no bearing on the matter. I, personally, have had all manner of things get into the chains of a car (even a rabbit), the worst being a lump of wood which the steel-studded tyre picked up; but it did not throw me over the steering wheel, etc., but doubled up the radius rod. It would be interesting to know what kind of chains he was using to stop "dead" the weight of a car without being broken; also the size of the stone, and whether he had a differential fitted to the car. Statements of this sort do not help a movement, but make one suspicious that the writer has an axe to grind. My experience, extending over thirteen years, is the reverse.

F.R.H.

Passenger Machine Design.

Sir,—With regard to the correspondence which has been published in your paper respecting passenger motor cycles, I have patented a vehicle embodying the following points:

(1) No chains; (2) no belts; (3) no forks; (4) no bevel pinions; (5) no working or greasy parts near occupants; (6) two-speed gear (teeth always in mesh); (7) detachable quick-change wheels; (8) interchangeable wheels: (9) two tracks; (10) tubular oval steel, wire, or artillery pattern spokes applicable; (11) hand wheel steering; (12) specially suitable for lady drivers; (13) each wheel independently sprung (similar to car practice); (14) engine, driving gear, and all working parts accessible; (15) double-acting band brake; (16) can be safely ridden solo; (17) free engine (handle starting); (18) the steering road wheel with its spring and bracket member are quickly detachable for storage or transit.

This machine is in course of construction, and I hope to send you an illustration for publication very shortly.

WM. STARLEY.

Sir,—No doubt the origin of the sidecar was owing to the fact that motor cyclists, finding the trailer too dangerous, and still desiring to take a companion when they wished, looked about for another form of attachment to this end, and gave the sidecar a trial, only to find that on any but a moderate gradient heavy pedalling assistance was required with the engines then fitted to their machines, and hence the increased demand for more powerful twins of 5 to 6 h.p. and two-speed gears, for, though it has been shown that in the hands of an expert the modern, so-called, 3½ h.p. engine, which, according to some authorities develops from 7 to 8 h.p. on the brake, can do wonders, still, even in the hands of such an expert, it is no doubt true that a 5 or 6 h.p. twin fitted with a two-speed gear would have been a more handy and convenient combination, and, in average hands and to meet every contingency, a well-known 8 h.p. and three-speed gear would be better still.

But the weight of a 5-6 or 8 h.p. motor cycle is too great to make it appeal as a solo mount to any but the youngest and most vigorous, and certainly not to the middle-aged, who, as yet, are only contemplating taking up the sport, though, when combined with a sidecar and handle or kick-starting, the weight ceases to be a disadvantage. If that is conceded, why make the sidecar detachable? Why not build it as a unit, as there must be very many who are not obliged to attach and detach the sidecar, in order to get it through narrow doorways, each time they use it.

If, then, this is admitted as good practice, it would no longer be necessary to adhere to the present design of frame—one much better adapted to withstand the strains imposed could be evolved, and the comfort of the driver increased by a well upholstered bucket seat and good footboards; and further, following car and quadcar practice, both front and back forks could be abolished, and "outside" wheels used instead. Just fancy the comfort of being able to change both inner tubes or covers in a few minutes without having to take the wheels out of the forks or disarrange brakes or anything else, and further there would no longer be any necessity to continue the diamond frame of the cycle—a dropped frame could be employed.

If, then, the two-track passenger machine with three wheels and motor cycle licence is to obtain, my proposal is that the back axle should carry both wheels, in the cheaper form one only to drive, but a "differential" could be used, the steering wheel being similar to that on a car or tricar, dropped frame, bucket seat for driver as well as passenger, 8 h.p. engine, and three-speed gear. What do your readers say?

E.J.S.

Do Records Appeal to Buyers?

Sir,—I quite agree with "Yorkshire" that records do not appeal to the majority of buyers, but only to the sporting class of motor cyclist, who want a machine to pass every other make on the road. In my opinion records do not prove the value of the machine half so much as long distance trials officially run.

If the public could see some of our crack machines after continual use on Brooklands without being overhauled or cleaned they would notice that ninety-nine out of one hundred engines were covered in oil, while probably some of them would have badly worn bearings, and burnt piston rings and valves.

In the record breaking season stacks of spare parts are sent to Brooklands, thus showing the public that, although one make of machine may hold several records, this fact proves nothing regarding the reliability and wearing qualities of this machine.

Brooklands, of course, is ideal for experimental work, as continuous high-speed work has to be indulged in to find out any weak spots in the engine; which continuous high-speed cannot possibly be attained on public roads.

For a machine to hold speed records simply proves that this machine is the fastest and nothing else. At the end of a record ride, for all the public know, the engine may be at its last gasp.

In order to prove which is the best engine for all round work, I would suggest that long distance trials should be held on Brooklands, such trials to include long distance speed

tests, slow tests, acceleration tests, finishing up the high-speed test with a slow climb up the test hill. All involuntary stops, repairs, adjustments, overhauls, amount of wear in engine, amount of carbon deposit, amount of oil exuding from engine, state of tyres and belts, and general condition of machine to be taken into consideration and recorded in the official results.

I do not think many manufacturers would risk a trial of this severe nature. DISSATISFIED.

Multi-pole Sparking Plugs.

Sir,—I have been much interested and at the same time rather amused at the correspondence that has been appearing under this heading, and, as a satisfied user of the Lodge double-pole plug, a word from me may prove useful on the subject.

I have been using these plugs on my 8 h.p. Chater-Lea twin and sidecar since the beginning of last season, and so far, in spite of dire warnings as to damage to the armature-winding of the Bosch magneto, I have had no trouble at all. The double-pole plugs are fitted over the inlet valves and the ordinary plugs over the exhaust valves. I find that the result of using the Lodge plugs is a cooler engine and a decided increase in power, which is particularly noticeable when hill-climbing. It is most important that the double-pole plugs should be fitted over the inlet valves, as the incoming gas tends to keep them cool, and care should be taken in the choice of plugs for fitting over the exhaust valves owing to heat in that position, but I have found that any really good magneto plug will stand up in spite of the heat.

I quite agree with your correspondent Mr. E. F. Baxter as to it being difficult to start up a big twin on the double-pole plugs, as I found the same trouble myself, but I overcame that by cutting out the ordinary plugs, by means of a small switch fitted to each of the ordinary plugs, and switching over to the double-pole plugs and the ordinary plugs coupled together after the engine had started.

Since reading this correspondence, I have taken the double-pole plugs out of the engine and have run only upon the ordinary plugs, and I can detect no missing or weak sparking at all, so that I fail to see that there is anything wrong with the armature winding. The interest taken generally in this subject must be the excuse for the length of this letter. R. CREAK DAVIES.

Experiences of the R.I.C.

Sir,—I was much amused at Mr. Trigg's description in your issue of January 11th, of his encounter with an officious constable.

We in Ireland seem to be blessed with a more sporting breed of "bobby"—at any rate so far as I have come in contact with him.

For instance, some time ago I was motor cycling through Balbriggan at night when a member of the R.I.C. stopped me and asked for my licence because I had no light. Now I knew my light had been burning brightly just as I entered the village, but, owing to the glare from the lights I had not noticed it go out. I explained this to the constable. He replied that that was the usual excuse. I invited him to feel the lamp. He did so, and it was so hot that it burnt him rather badly. I thought, "Now I'm certain of a summons," but, though he must have been suffering intense pain, he said, "You had better light up again. It would not be fair for me to have you up as the lamp has evidently just gone out."

Another example: Some months since I was warned by a friend that the Metropolitan Police were working a trap on a certain road in the suburbs of Dublin.

One day I was riding along that particular road at eighteen miles per hour, when I was called on to stop and informed that I was riding at between twenty-three and twenty-four miles per hour. I pointed to the maximum hand of my speedometer—a Jones, in the second 10 000 miles—which stood at twenty-one miles, and told the sergeant in charge of the trap that there must be an error as the twenty-one was done on another road, and I had not exceeded eighteen there.

He said the speedometer was wrong. I replied I was certain it was working correctly.

After thinking a moment he said he would soon prove it. He pointed out the beginning and ending of the trap, and told me to run through it at some exact speed. I said, "But suppose you say I'm going twenty-five and the speedometer says twenty, you will have me for two offences."

"Oh no!" he laughed, "you select any speed you like, and I give you my word that if your speedometer agrees with my watch you shall not be summoned." I took him at his word and ran through that trap, which was 220 yards in length, in exactly fifteen seconds.

When he came up to me he said "thirty." I pointed silently to the maximum hand which rested exactly on thirty.

He kept his word, and I heard no more about the affair.

I have heard, also, that the Dublin Metropolitan Police detest being put on to trap motorists. PAT.

Experiences in Southern Nigeria.

Sir,—I have read the different experiences of your readers, so I thought I would send along mine, and enclose photograph of myself and chum here in Lagos.

I bought this Rudge-Whitworth machine and Millford sidecar while in England last June, and rode it at home for three months, covering close on 3,000 miles. I was an absolute novice and did not know the first thing about motor cycles. I had about ten minutes' tuition and started off. I weigh 16 stones and my chum 14½ stones, or close on 4 cwts. between us. I have studied your paper, and have found a lot of useful tips in it, and am thankful I started to take it weekly, and get the same forwarded every mail from home.

We have about twenty miles of road here in Lagos that are fairly decent for motor cycling, and it is a splendid



The writer of the accompanying letter and his friend with a Rudge and sidecar in Southern Nigeria.

pastime during the cool of the evening or early morning. Up in the interior, or about 120 miles from here, there is a good road for about sixty miles, and as the country is opening up rapidly, there is a good future for any maker who cares to start an agency in Lagos, with a good man to do repairs, as there are scores of wealthy natives who would immediately buy motor cycles, sidecars, and runabouts if they could rely upon getting them repaired.

Wishing your paper continued success, W. SMITH.
Lagos, S. Nigeria.

How to Exhibit a Badge.

Sir,—I have been a motor cyclist member of the A.A. for some years, and have almost invariably had my badge attached to the top of the lamp, as shown in your illustration last week.

Could not the manufacturers be persuaded to make the necessary clips a standard part of their lamps? The A.A. is a great boon to the motorist, being practically the only institution to help the motorist when he is on the road. I often wonder why the R.A.C. does not associate itself with it in a more marked fashion. A. J. ATKINGS.

Some Experiments with Hydrogen-peroxide.

Sir,—I believe that I am right in assuming that acetylene burners are so constructed as to admit of air being introduced and mixed with the jet of gas to assist in the illuminating power of the flame. I notice your contributor touches this point. I would be interested to know what type of burner was used in the experiments. If some burners inject more air into the gas than others (the amount of gas passed through each burner per hour being the same), then apparently the candle-power will vary accordingly. Perhaps Mr. Renfred Myhill will kindly enlighten us. O 5298.

The Stream-line Body on Racing Motor Cycles.

Sir,—The article and illustrations regarding stream-line form, appearing in *The Motor Cycle* of January 18th, greatly interested me, as I am a keen motor cyclist, and, needless to add, I shall look forward to the fulfilment of Harry Bashall's promise in last week's issue. He proposes to experiment on these lines during the year. If I may quote his letter, he says he is certain that it will increase existing speed records.

Now, if Collier can do 91 miles an hour on Brooklands track, I predict that days only separate the time when, fitted with an efficient stream-line form body, a similar machine will easily be capable of over 100 miles an hour.

Those who, like myself, take an interest in the "higher form of locomotion"—aviation—and had the good fortune to see the thrilling flying by Weymann in his Nieuport at the never-to-be-forgotten Gordon-Bennett aviation races at Eastchurch last July, will not require to think this out.

It is not so very long ago since the Nieuport monoplane, with only a 28 h.p. engine, was making much faster times than several other well-known makes fitted with 50 h.p. engines, and in some cases even more powerful than these. Why was this? Because of the efficient stream-line form body of the Nieuport, and all head resistance reduced to a minimum.

There can be no doubt about this being an all-important factor regarding speed, and one of which we are likely to hear considerably more at no distant date.

RICARDO E 1407.

The Proposed Abolition of the Cut-out.

Sir,—Though an old motor cyclist, I think it high time something was done to stop what is an intolerable nuisance. I reside on the outskirts of a fairly large town, and there is a good deal of motor traffic passing. There are certain motor cyclists who think it the correct thing to race up and down the road, chiefly on Sundays, with their cut-outs open, kicking up an infernal row. Only a Sunday or so ago, on my way to church, two such young "bounders" passed. Little did they know that at three of the houses they passed, friends were lying dangerously ill, two of whom have since passed away. Once during the summer I was awakened at 4 a.m. by the noise caused by some youths testing their engines, who passed and repassed my house three times within an hour.

I am not finding fault with the cut-out, by any means—that is all right, and a very useful friend—it is the improper use that is made of it. Some of your correspondents find fault with the steam roller; surely that is rather weak, especially when one frequently reads complaints in your paper of unrolled road surfaces. Then again, the traction engine; how many does one pass in a day's run? I ride all days of the week but one, and can only call to mind passing three during the past year, and they were being used for business purposes, to the good of the community. Besides, traction engines rarely, if ever, move at night, and it is the vibration they cause that renders them a nuisance, not the noise. If motor cyclists would remember to shut their cut-outs through villages and towns, there would be no talk of legislation. No, it is the irresponsible minority, who apparently think of no one but themselves, that will be responsible for any alteration in the existing law, and the sooner they realise the fact the better.

REX.

Sir,—Mr. A. H. Priestley's grounds for disputing my statement on silencers appear to me to be very slight, and he cannot dispute the fact that the 1912 silencer as fitted to half-a-dozen of the best makes which were existing in 1906 is practically identical with the one supplied to those machines at that date. Certainly over 90% of the machines one meets in this district (Oxford) are driven with cut-outs open, and in this condition a machine even slightly out of tune makes itself particularly objectionable. I quite admit that a few makers have been experimenting, much to their credit, with long exhaust pipes, etc., but really without much effect except added complication and unsightliness. I am sure a silencer on present lines could be made by increasing or doubling the size and fitting an exhaust pipe of 1½in. diameter in place of the 1in. or 1¼in., but what is very important is that this should be fitted with brazed-on radiating fins. Then indeed could one claim that the cooling assisted the exhaust discharge. A.H.P.

How to Keep Warm.

Sir,—Last summer I wore a long Umpire dust coat on my shorter journeys. I found it kept me clean from head to heel, or very nearly, as the skirts wrapped well round my shins.

As the weather changed, I had a shower-proof Gabardine coat built on the same lines, but double-breasted inside, although it looked single-breasted outside. As the cold increased I had a light chrome leather panel sewn inside the coat, reaching well below the waist. This kept the wind away from chest and abdomen. The latter I consider the most vulnerable part of a motor cyclist's anatomy.

As this coat has a Bismarck collar and fits smartly round the neck there is no need, and indeed no room, for a neck wrap, but feeling the need of more warmth I just folded my Scotch muffler in half and fixed it in place with a big safety pin just below the top button, and the ends reach below the waist.

Thus I have a warm, light, rain and windproof coat, long enough for the protection of my legs, and rendering overalls unnecessary for short journeys such as running down to business and back to lunch, and I can put it on and off in a very short time indeed. MO-CLO-CLO.

Hill-climbing.

Sir,—When touring the Lake District last July with a 3½ h.p. two-speed Bradbury and sidecar, I climbed the Buttermere Hause Pass from the village of Buttermere through Newlands into Keswick.

Only on one small portion did my passenger alight, and that not so much to relieve weight, but she was nervous of the jolt from a bad watercourse which appeared in front. The previous ones jolted us both nearly off our seats. The whole of this route was performed by engine power, and it was not necessary to push the machine one yard.

Another trip performed on the same tour was from Ambleside to the top of Kirkstone Pass *viâ* Troutbeck Bridge. This is a seven-mile constant climb, and certainly steeper with several worse bends than the more usual road from Windermere.

Only on one small portion of this did my passenger alight. In taking a bad bend on a steep rise I slowed down too much and the machine stopped. We pushed the machine a matter of a few yards, mounted and finished the remainder without any trouble whatever. July last year was a trifle warm, and although the engine got smoking hot it kept plugging away. FREDERICK T. TURPIN.

SUMMARY OF CORRESPONDENCE.

Will the person who wrote to the Lomax Tyre Co., from Gosport, send his name and address, as he omitted both from his letter of the 24th ult.?

C. E. Holmes writes to explain that the observer was wrong in crediting him with a stop on Pink Hill. The facts are that, nearing the top, a horse and cart baulked his progress, and, after stopping to let the driver pass, the Chater-Lea restarted and finished the climb with ease.

CURRENT CHAT

TIME TO LIGHT LAMPS.

Feb.	1st	... ...	5.45 p.m.
,,	3rd	... ...	5.48 ,,
,,	5th	... ...	5.52 ,,
,,	7th	... ...	5.56 ,,

Police Trap.

We are advised of a continual trap being worked in the Richmond Road, at the south-west end of Mortlake.

Club for Kidderminster.

A meeting will be held on the 7th inst., at the Black Horse Hotel, at 7.30 p.m., for the purpose of forming a club for Kidderminster and district.

Sidecar v. Tram.

Owing to the unsuitability of train service from London to Wales on Sunday night, we understand that one of the London daily sporting papers despatches its Monday edition per sidecar.

M.C.C. London-Edinburgh Run.

The M.C.C. Committee has decided to award two silver cups in the London-Edinburgh run—one for the best performance by a competitor on a motor bicycle and sidecar and one for runabouts with three or four wheels. Mr. S. H. Fry will present one of the cups.

Experiments with Hydrogen Peroxide.

We have tried the proportion of one ounce to a pint of "20 volumes" hydrogen peroxide in a lamp generator, and can confirm the statement made in the article published last week that the addition makes an improvement to the light. Just how much better the illuminating power becomes we could not definitely say, but the distance the light penetrated was further than usual. Unfortunately for the result of the experiment the moon was shining brightly; doubtless on a dark night the increase in penetration would be more noticeable.

Championship Hill-climb in N.S.W.

The Motor Cycle Club of N.S.W. held a most successful hill-climb at Baden Hill, Coogee, on December 9th, 1911. There were three classes and excellent sport was witnessed. The fastest time of the day was made by A. Biden (5 h.p. Matchless), 24⅘s., while W. Tormey made a record for a single cylinder, 25⅖s., on his T.T. Speedwell-Abingdon. The competition was on the knock-out principle. Results:

Class I. (Touring machines, 500 c.c.).—Final, K. Bennett (Speedwell-Abingdon) beat S. Binns (Triumph).

Class II. (T.T. machine, 500 c.c.).—Final, R. Robinson (Speedwell-Abingdon) beat W. Tormey whose belt came off.

Class III. (Open class, all powers).—Final, A. Biden beat A. A. Searl (5 h.p. [illegible] Jap).

The Surrey Police.

In connection with the Godalming speed limit and persecution of motorists, it is interesting to note that the R.A.C. and West Surrey A.C. offered to co-operate with the police in their endeavour to put a stop to the reckless driving of a few by posting observers in suitable places.

FUTURE EVENTS

Feb. 17.—Sutton Coldfield A.C. Open One Day Trial.
Mar. 2.—A.C.U. Open One Day Trial.
,, 22.—B.M.C.R.C. Race Meeting.
,, 23—Herts. County A.C. Open Quarterly Trial.
,, 30.—Derby and District M.C.C. Open Hill-climb.
Apl. 5-8.—N.W. London and Herts. County M.C.C. Joint Trial and Open Hill-climb (Yorks.) and Ladies' Competition.
,, 8.—Westmorland M.C.C. Open Hill-climb on Brigsteer Brow
,, 13.—Oxford M.C.C. Open Hill-climb

The police, however, refused this offer on the ground that the presence of the A.A. patrols on the road would render such efforts of no effect. Do the Surrey police really wish to stop dangerous driving, or are they out to get fines?

SPECIAL FEATURES.

WAR OFFICE TEST AT BROOKLANDS.
TWO-STROKE ENGINES.
TOOLS AND SPARES.

Noted Hill Climbed.

Caves Hill, a notorious climb near Sydney, N.S.W., rising 1,700 feet in 2½ miles of zigzag road, has recently been climbed on motor cycles for the first time, L. J. Astley (3½ h.p. Rudge) and R. W. Allen, late of Halifax, Yorkshire (Zenith-Gradua), performing the difficult feat.

The B.M.C.R.C.—A Successful Year.

We are in receipt of the third annual report of the enterprising British Motor Cycle Racing Club. The past year has been a most successful one, and the club's accounts show a substantial credit balance. The report is a concise record of an active year's work. It will be the policy of the club, we learn, during the coming season still further to encourage racing, and to offer special inducement to less experienced members to make attempts on record. With every report two complete lists of British records up to January 1st have been sent, on the back of which are full particulars of membership.

WAR OFFICE TEST AT BROOKLANDS.



Major Stevenson, D.S.O., starts P. Shaw (P. and M.) at the foot of the test hill.

"The Beehive Thing that Makes the Noise."

Some of our "learned friends" of the Bar may know a lot about law, but when it comes to motor matters they are often hopelessly ignorant. In a recent case one of them referred to the engine as "the beehive thing that makes the noise."

Benevolent Fund Concert.

The Birmingham Centre of the Cycle and Motor Trades Benevolent Fund will hold its third annual Bohemian concert in the Grosvenor Room, Grand Hotel, Birmingham, on Tuesday next, the 6th inst. Tickets, 1s. each, may be obtained from the hon. secretary, Mr. A. B. Williams, 13, Weaman Street.

A New German Organisation.

A German body called the Allgemeine Deutsche Automobil Club was originally formed to foster the motor cycle pastime and industry, but subsequently became interested in small light cars and motor boats. Now a fresh body has arisen, the Berlin branch of the above association (with thirty members) having pledged itself to do its utmost to promote the sport of motor cycling. Should other branches of the same organisation follow suit, a new association may arise Phœnix like from the ashes of the old one.

Gradient of Stoney Brow.

Our local correspondent has interviewed the city surveyor of Manchester regarding the gradient of Stoney Brow, the hill depicted in the photograph on page 79, January 18th, showing a Dot sidecar climbing the Brow. The city surveyor says the gradient of Junction Street, Store Street, Manchester, otherwise known as Stoney Brow, is 1 in 6-19, taken from a point in the centre of the carriage-way opposite to the building line in Store Street, and terminating at the top of the slope of the Canal Bridge. Our original statement of 1 in 7 in the inscription under the picture, is therefore practically correct. The average gradient is 1 in 7, and the worst portion as depicted 1 in 6¼.

Clean Counties.

Cambridge was cited as a "Clean" county in a recent issue of *The Motor Cycle*. A correspondent, however, informs us that not so very long ago a trap was vigorously worked at Trumpington and between Trumpington and the University town. It would be interesting to know if this control was worked at all during 1911. Perhaps a Cambridge reader will let us have this information.

Auto Cycle Union Notes.

ONE-DAY TRIALS.—The regulations for the above, the first of which takes place on March 2nd, have been approved by the General Committee. Silver medals will be awarded to those private owners who gain first-class certificates. A summary of the conditions appears on page 125.

MEMBERSHIP.—Fifty-two members were elected at the last A.C.U. committee meeting.

AFFILIATION.—The Wigan M.C.C. has been affiliated to the governing body.

ANNUAL GENERAL MEETING.—The annual general meeting of the private members will take place at 8 p.m. on March 7th, and the annual general meeting of the Council on Saturday, March 30th, at 3 p.m. Both meetings will be held at 89 Pall Mall, S.W.

THE MOTOR CYCLE UNION OF IRELAND.—The Auto Cycle Union has decided to enter into an agreement with the Motor Cycle Union of Ireland to recognise suspensions, etc., imposed by that body.

OFFICIAL TIMEKEEPER.—Major F. Lindsay Lloyd, R.E., has been re-appointed official timekeeper for the electric chronograph at Brooklands.

OPEN RELIABILITY TRIAL.—The Birmingham M.C.C. recently applied for a permit for an open reliability trial from Birmingham to Perth on April 6th, and from Perth to Birmingham on April 8th. It was agreed that two permits should be granted, provided that each day's run were a separate event, with separate rules, awards, and programmes. Two separate permit fees were to be paid, and each event to be kept distinct.

The Dutch Trial.

Another prominent motor cyclist has entered for the English-Dutch reliability trial in the person of F. A. Applebee, who will ride a 3¾ h.p. Scott and sidecar in the trade team if chosen. H. H. Anson (Selby) has entered his 5 h.p. Matchless in the amateur section. The matter of choosing a representative team becomes more difficult every week. If any reader has in mind a good method of choosing the British team, apart from an eliminating trial, we shall be glad to consider it.

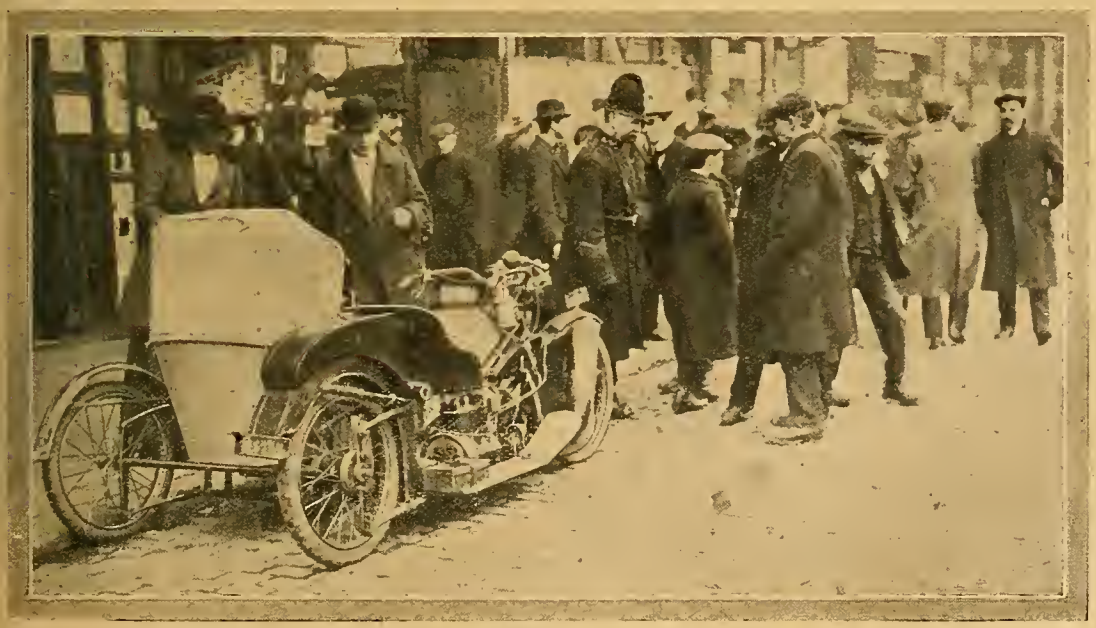
American Road Race.

A road race across what was once known as "the Great American Desert," from Phœnix (Arizona) to Mesa and back, took place on the 28th ult. The distance is thirty-eight miles, and the roads are very sandy all through the State of Arizona. The winner's time under the circumstances, 1h. 0m. 37s., is considered in the States to be a good performance. Ten riders competed, and the winner rode a single-cylinder Harley-Davidson. The second man rode a Thor.

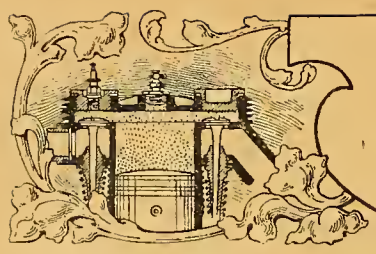
This Year's T.T. Races.

The Tynwald Court, Isle of Man, at its sitting last week, decided to grant permission to the Auto Cycle Union to hold the Tourist Trophy Races this year, provided proper regulations are made to prevent competitors and others becoming a nuisance to other people. The Tynwald authorises the races on condition that efficient silencers are used, and recommends the adoption of the old course—St. John's, Kirk Michael, Peel, St. John's.

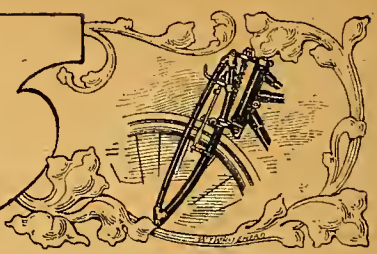
J. A. Carvill, who, our readers will remember, was a successful competitor in last year's Senior Tourist Trophy Race, writing from Colorado Springs, U.S.A., says, "I hope to be back for the next T.T. and shall again ride a T.T. Triumph."



An idea of the growing interest taken in motor cycles, even by the uninitiated, is afforded by the accompanying illustration. It depicts a 7 h.p. T.M.C. with Turner coach-built sidecar which was left outside a Manchester cafe, and round which a crowd soon gathered. The policeman is seen keeping the crowd on the move.



Further New American Models.



THE following additions were made to the exhibits at the New York Motor Show after the report was published in these pages on January 11th. The consensus of opinion regarding this exhibition is that it was by far the best held in New York, both in attendance and actual business transacted. Next year may see the first independent motor cycle show in New York.

A new addition to the American motor cycle family is the Henderson, a 4 h.p. four-cylinder machine, shown by the company of that name from Detroit, Michigan. It attracted great attention, as a "baby" always does, but this was an extraordinarily big baby weighing 250 pounds. The frame differs radically from any motor cycle frame now in use, particularly having no upright frame member, such as the seat tube used in ordinary construction; the lengthy wheelbase, sixty-five inches, is also noticeable. The engine is started with a handle at the right side of the machine, and just forward of the engine is a footboard. The starting handle folds out of the way when not in use.

The Power Transmission.

In an extension at the rear of the crank case is a counter-shaft driven by a bevel gear on the rear end of the engine-shaft; at the end of the counter-shaft is an Eclipse free engine clutch, and from this a single chain connects with a driving sprocket on the rear wheel. The chain is entirely enclosed in a dust and water proof housing with a hinged door, giving ready access to the chain for lubricating. There is a lever pivoted on a lug on the crank case by which the clutch is operated, and a pedal operates the hub brake, which is a Musselman, a standard American coaster hub.

A Ten Horse-power Engine.

Having a bore and stroke of 2½in. and 3in. respectively, the four-cylindered engine is considerably larger than other motor cycle engines of this type. The general specifications include a Breeze carburetter, valves in separate pockets, intake directly over the exhaust, operated by a rocker arm and pushrod intervening between camshaft and rocker arm. The exhaust valves are at the bottom of the valve chamber, opened by upward thrust direct from the camshaft. Cooling is aided by large air spaces left between the exhaust valve pockets and cylinder walls. The Bosch magneto is the D.U.4 car type, with 60° of sparking range. Lubrication is by splash with a sight feed drip to the crank case. Clutch, carburetter, and throttle control are from the handlebars, with a patented ratchet device to hold the levers in place. The tank is cylindrical, holding 2¼ gallons of petrol and two quarts of oil, and the machine presents a handsome and bold appearance, being enamelled black with red and gold lines.

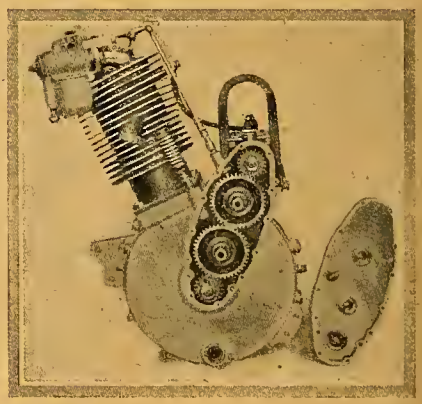
New Valve Mechanism.

In the New Era model (the New Era Auto Cycle Co.) originality, as far as America is concerned, is shown in the valve mechanism. The usual driving gear on the motor-shaft is fitted, and placed upward and forward therefrom in a direct line are found the exhaust and inlet cam gears and the magneto gear. Set obliquely in a single pocket forward and to the right of the engine are the valves. Directly in line with the centre of the exhaust cam gear, and operated by a direct thrust is the exhaust valve, with the inlet valve above it. The latter is operated by an overhead rocker arm and thrust rod working in connection with the third of the train of gear wheels.

Novel Accessories.

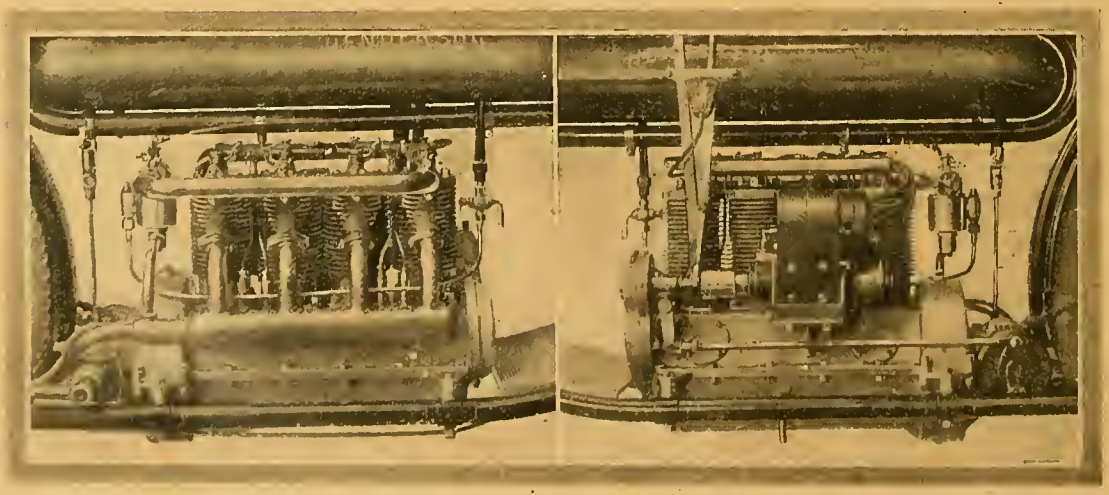
The Whittaker Chain Tread Co. showed a new motor cycle tyre chain made on the lines of the Parsons anti-skidding chains.

Several novelties were shown by the A. S. Noonan Tool Works. Among them their lamp bracket; this is made adjustable to carry any size motor cycle lamp. The same firm exhibited a flag staff holder, which we illustrate, to carry small flags.



The New Era power plant, showing magneto drive and method of operating the valves.

The Standard Thermometer Co. have brought out a new form of flexible shaft drive, to be used in connection with their speedometers for motor cycles. This flexible shaft runs through a rigid tube for about half the distance; the latter being held at either end, is prevented from moving while allowing the spring fork full action.

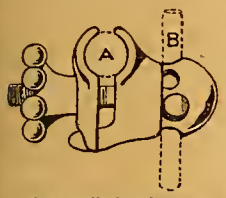


(1) Valve side of the four-cylinder Henderson.

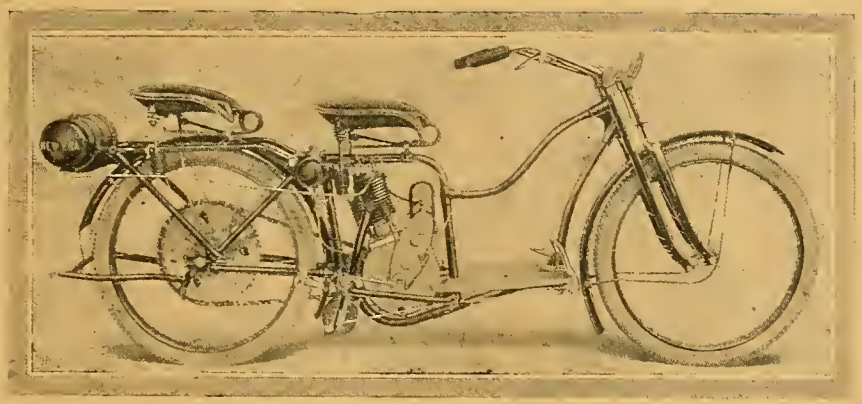
(2) Chain side showing position of magneto and method of operating clutch.

Further New American Models.—

What is termed the "No-lag" magneto has been placed on the market by the American Circular Loom Co. The current generated in the armature is alternating, and is then transformed in a separate coil carried within the arch of the magnets and taken off as secondary correct current. In the two-cylinder model the contact breaker eliminates the necessity of stationary segments, as the breaker is stationary and the rotating piece is formed to give the requisite break intervals as required by the angle between the cylinders. By connecting a set of batteries to terminals on the coil, dual ignition is effected when the actual contact breaker is used to effect the timing.



A neat clip for clamping a small flag to the handle-bar at one operation.



Valve side of the New Era which, as will be seen, is supplied with a tandem attachment. It somewhat resembles the Danish mount—the Elleham.

What is a Complicated Trial?

MR. C. C. COOKE writes with reference to our description of the Herts County A.C. trial, pointing out that timing was not on the split second system, competitors being allowed thirty seconds either side of their schedule. Even this is a fine limit for the majority of competitors who rely upon handle-bar watches. He says there were only three controls—St. Albans, Tring, and the finish. But, according to the route card, controls must be added at Barton-in-the-Clay, Dunstable, Princes Risborough, and Amersham, making *seven* in all—quite enough in a hundred miles run. Dunstable, he further points out, was not timed, but to this we would reply that the route card says, "timed out only for non-stop run to Tring." Mr. Cooke emphasises that the trial was not one of reliability only, in addition it was a sporting trial, and that is why non-stop sections were included. He adds: "Few know the infinite amount of thought, time, and work a trial of this description demands." We can assure Mr. Cooke that we fully appreciate the work and worry entailed, and that is why we could not help thinking how much easier it would have been for the officials, and how much less worrying to the competitors, if the trial had been made a straightforward non-stop throughout instead of a series of non-stop sections, which necessitated a constant watch on the regulations as well as on the route.

The General Opinion.

In defence of our criticisms we can only say that we were voicing the general opinion of competitors when we said that the trial was too complicated. Here is another proof. On three occasions we noticed competitors effecting adjustments in sections which were not observed, and acquaintances who passed called out "hard luck," thinking they had experienced trouble in the non-stop sections. The troubled one would look up in amazement and then scan the regulations once again.

We can quite imagine that the regulations appear anything but complicated to Mr. Cooke if he drew them up.

It appears that the S.I.A.M.T. rider whom we noticed repairing his belt by the roadside in the Herts County trial was not E. A. Marshall who was competing, but a member of the staff of Radium S.I.A.M.T., Ltd., who was out to see the fun.

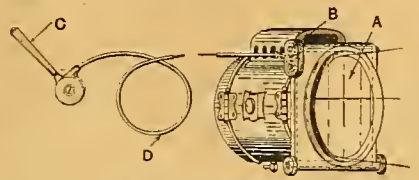
Alfred B. Wade, who entered and rode a twin Zenith and sidecar in the above trial, had a most adventurous trip from Cardiff to the start, ultimately reaching Uxbridge some time after the competitors had left. He and his passenger, however, decided to make up time if possible, but missed the road, and while taking a corner at full speed pulled off the sidecar tyre. They wisely abandoned the trial here.

Anti-glare Attachment for Head Lights.

THE general appearance and nature of this device will be rendered clear by an inspection of the diagram. The essential feature consists of a semi transparent screen or blind mounted on rollers, actuated by springs and working immediately behind the front glass or lens, the whole surface of which it is capable of completely or partially covering. The screen itself is made of strong but thin flexible fireproof fabric, the degree of transparency being made to suit the power of the lamp, but only just sufficient to eliminate the dazzle.

By preference, the screen is coloured a reddish yellow on account of the fog penetrating qualities of a light of this colour but it can be tinted any desired shade to suit the user's individual ideas.

In its most approved form, the mechanism for operating the screen consists of a suitable train of gear wheels actuated by Bowden wire and self-locking lever, the latter being placed in any suitable position; but where the lamp is easily accessible, the arrangement is simplified by fixing a lever directly to the attachment.



The whole of the mechanism, screen, etc., is enclosed in a damp and dust-tight case, finished to match the body of the lamp. The attachment may be fitted to almost any make of existing lamp at a small cost.

To the considerate motorist the contrivance will at once recommend itself; its uses are obvious, *e.g.*, in passing through towns or villages, where a powerful front light is not required and liable to inconvenience other road users; passing restive horses, and for safely negotiating other traffic. Its use in fog is a great advantage, whilst in summer its use as a protection for the lens mirror and reflectors against the rays of the sun is not one of the least points in its favour.

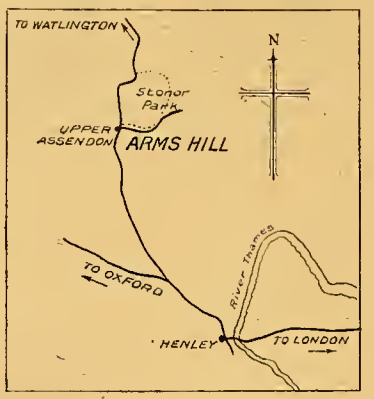
The general adoption of such a device would do much to overcome the existing prejudice against powerful head lights, and would reduce to a minimum the number of accidents attributable to the use of such lights, particularly if one always knew exactly when to reduce the glare.

Further particulars may be obtained on application to the patentee, Mr. W. A. Muir, Balderton, Newark, Notts., to whom we are indebted for these particulars.

A Test Hill for Metropolitan Riders.

HITHERTO the only severe test hill generally known to motor cyclists in the London district has been that at Cudham Church Hill, with its actual gradient of 1 in 4.

North-west of London lie the Chiltern Hills, stretching north-eastwards to Tring in one direction and circling round *viâ* Berkhampstead, Amersham, and High Wycombe, back to the Thames at Henley. Within this district there are steep hills innumerable, and as a happy hunting ground for those riders who desire fresh precipices to conquer, no other neighbourhood easily reached from the centre of London can compare with the Chilterns. Kops Hill, Bledlow Ridge, Chinnor, and Kingston Blount are ascents now fairly familiar to motor cyclists, but the worst has apparently been overlooked, perhaps because it leads nowhere. I happened across this truly fearsome grade about six years ago, whilst pottering up and down the lanes between Henley and Watlington in search of something to test the climbing abilities of a car. Upon this first occasion a friend and I, after a walk to the top, decided that discretion was the better part of valour, and did not attempt the impossible with a 20 h.p. 1905 vehicle. Local enquiries revealed the fact that, up to the time of this first visit, no self-propelled vehicle had ever reached the summit. On a recent fine day, I again essayed the climb upon a car and succeeded, and, so far as I can learn, this is only the third car that has achieved the feat. But one motor bicycle has gained equal success, and then only after the rider had spent nearly two days on the hill and made many failures.



How to get to Arms Hill.

The situation of Arms Hill is 3½ miles from Henley-on-Thames, and is reached by the following route. Riding from London, and crossing the Thames at Henley Bridge, proceed up the wide High Street and take the narrow right-hand turning which leads through Nettlebed to Oxford. After leaving Henley streets, the road opens out into the straight and level Fair Mile. At the end of this straight stretch, the road forks left and right where an inn stands at the junction. The right fork is the correct route, where a direction post points to Watlington, and 2¾ miles of gradually rising ground is traversed to the tiny village of Upper Assendon. Watch for the Stonor Arms on the right, and on the same side of the road, fifty yards beyond, is the commencement of Arms Hill. The entrance from the road just traversed is marked by a huge traction engine, permanently stationed outside a flour mill, the engine serving to drive the grinding machinery of the mill. The spot can be further recognised by a row of six brick built cottages immediately facing the mill and edged by some granite kerbing that forms the only available take-off.

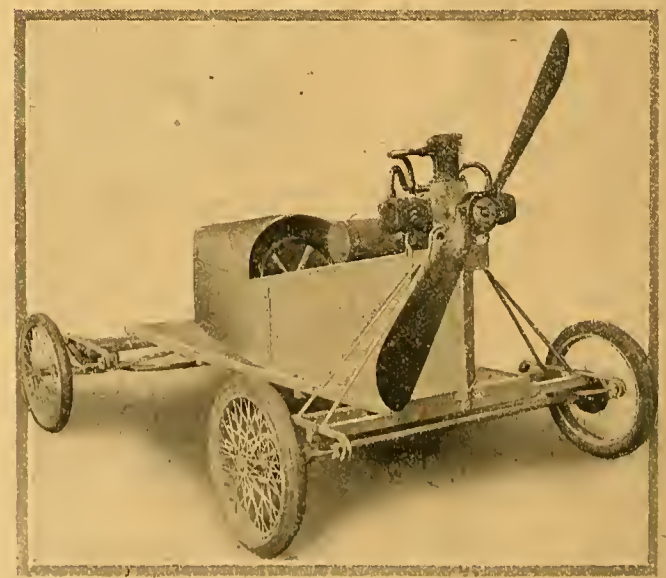
The hill is no longer employed for traffic, as a much easier road was cut out many years ago, which joins the hill at the top, with the result that the first 250 yards is overgrown with grass. As the grade steepens, the grass gives way to a carpet of loose stones, to develop into a surface scored in all directions with rain gullies. The hill goes straight ahead for some 600 yards, becoming steeper and steeper, and then suddenly widens out on a left-hand bend where the surface is surprisingly good. It is just above this bend that the worst pitch occurs, which I estimate to be

1 in 3,

and to prevent the road being wholly washed away during storms, a pair of elliptical iron pipes have been placed on either side to carry off the water. The bad portion of the hill extends for about 150 yards, and then takes a sweeping bend to the right, beneath a mass of overhanging tree tops, and in another 600 yards of 1 in 5½ reaches the level lane at the top.

The total length is some 1,200 yards, and after personally tackling pretty well every known and unknown grade within 100 miles of London, I have no hesitation in asserting that Arms Hill is veritably the steepest hill within that radius of the Metropolis. The difficulty of overcoming the steepest portion is accentuated by the grass at the foot, because a couple of hours rain converts the latter into a sticky surface which tyres refuse to grip. A club in search of excitement for its members might do worse than arrange for a Saturday afternoon trip to Arms Hill, and I can prophesy plenty of fun for both riders and spectators. The hill is seldom used by anyone, so that a hill-climb would not inconvenience others, and there would be little or no difficulty in obtaining permission to use it.

COLUMBUS.



A novel quadcar exhibited at the Brussels Show. It is propelled by a motor cycle power unit coupled to an aeroplane propeller or fan. It is a coincidence that one of our staff had roughly designed a similar machine for inclusion in these pages.

Sutton Coldfield A.C. Open Reliability Trial.

The Regulations Reviewed.

THE start will be at 9.30 a.m., February 17th, from the Gun Barrels Hotel (Bristol Road), Birmingham. Route will be Selly Oak, Rose Hill, Bromsgrove, Alcester, Stratford, Sunrising Hill, Warmington Hill, Banbury (lunch), returning in same direction to Alcester and then direct Birmingham Road to tram terminus, Alcester Lane. Observations will be taken on all performances on each of the test hills, namely, Rose Hill, Sunrising Hill, Warmington Hill, Edge Hill, and Gorcot Hill.

METHOD OF MARKING.—Each competitor will be given 200 marks as maximum. The competition will be conducted as an absolute non-stop run excepting at the usual controls. Marks will be deducted for any stops whatever, other than those just referred to. No adjustments whatever will be permitted.

Penalties.

Ten marks will be deducted for actual failure to climb any of the test hills, five marks will be deducted on each hill if the machine be assisted by pedalling, and no competitor will be allowed to dismount and run with machine. Marks up to the limit of five will be deducted from those unable to make an easy start, but free engine and two or three-speed machines will not be given any preference on this count. One mark for each complete minute in excess of one minute will be deducted for being either late or early at checked points. For a stop of any kind ten marks will be deducted. Marks up to the limit of ten will be deducted for machine or rider finishing in an unreasonably dirty, muddy, or oily condition.

SILENCING.—Cut-outs, if fitted, must not be used or must be sealed; noisy machines will be disqualified.

Engines will not be allowed to run on stand at any time after the actual start of the competition; no competitor with a free engine may start his engine until he receives the word "go" at each control.

The schedule time has been worked out at 20 m.p.h., there will be a stop of one hour for lunch at the Red Lion Hotel, Banbury, and also one of thirty minutes on the outward and homeward journeys; one minute will be allowed in which competitors may be either late or early at each of the controls in order to correct any slight errors that may occur.

Awards.

The Colmore cup will be awarded together with a gold medal to the competitor making the best performance throughout the day, and all those making non-stop runs and arriving at the finish within schedule time will be awarded silver medals. An additional gold medal will be awarded for the best performance of an amateur. Also pair of Kempshall tyres (presented by Kempshall Tyre Co., Ltd.) for best performance by an amateur member of the Sutton Coldfield A.C.

Marks will be awarded to all members of the club for the Murratti-Ariston trophy, and also additional marks to amateur members for Ixion challenge cup. All members competing will be awarded two marks.

FOR MURATTI-ARISTON TROPHY.		FOR IXION CHALLENGE CUP.	
1st member	8 marks.	1st amateur member	8 marks
2nd ,,	6 ,,	2nd ,, ,,	6 ,,
3rd ,,	3 ,,	3rd ,, ,,	3 ,,

Mr. James St. John, 33, Fountain Road, Edgbaston, is the trials hon. sec.

All competitors must be provided with A.C.U. licences.

A.C.U. Spring and Autumn One-day Trials.

Summary of the Conditions for the Spring Trial on March 2nd.

ENTRIES.—Entries must be received by Saturday, 24th February, together with either of the following entry fees: Manufacturers or agents, two guineas; private owners, members of the A.C.U., or Affiliated Clubs, half-a-guinea; non-members, two guineas. Not more than three entries will be accepted from any manufacturer.

THE START.—The competitors will be started at 8.30 a.m. from ————, and will be expected to accomplish the journey without any stop other than as officially recorded. One hour and a quarter will be allowed for luncheon, but no adjustments will be permitted.

THE COURSE.—The course will be one of about 160 miles in length, but the actual route will not be announced until the morning of the trial. A competitor may not leave the course under any circumstances whatever, and will be penalised or disqualified at the discretion of the judges if it be found he has done so.

HILL TEST.—A minimum speed will be set for two severe test hills, and every machine to gain a first class certificate will be expected to climb the hill at the speed set for that particular class, as follows:

	Minimum speed.
For machines not exceeding 350 c.c.	10 m.p.h.
,, ,, above ,,	15 ,,
Passenger machines	7 ,,

A stop will not be permitted at the foot of the hills.

Pedalling is prohibited for any machine except on the test hills, and then only in the case of machines having engines not exceeding 300 c.c. for single-cylinder and 350 c.c. for multi-cylinder engines, and only when a change-speed gear is not fitted. Passenger machines must climb the hills with passenger and driver seated in normal maner.

JOURNEY.—The maximum running time for the journey will be at the rate of 18 m.p.h., and the minimum 20 m.p.h.

Each entrant of a passenger machine is required to find a male observer, weighing not more than twelve stones, and such observer will not be permitted to travel on the machine of the entrant, but shall be allocated to the machine of another competitor, the driver of which shall be responsible for the return of such observer to the finishing-point. This rule will be strictly enforced. Such observer will be under the control of the Union, and will be required to make observations throughout the whole of the trial, not only with regard to the machine on which he is travelling, but also with regard to all machines which come under his observation, and to furnish a report of his observations at the conclusion.

The entrant must provide a full size waterproof rug for the comfort of the observer.

The road wheels of any machine entered may not be brought to rest under any circumstances whatever, except for exigencies of traffic. Drivers of motor bicycles who dismount for the purpose of running beside their machines, or who kick on the ground for the purpose of assisting their machines, will be recorded as having failed. Drivers of passenger machines which shed their passengers will be recorded as having failed.

To Qualify for a Certificate.

To qualify for a first class certificate, a machine must conform to the following requirements and be equipped with:

1. Free engine or variable gear.
2. Two brakes working independently.
3. Mudguards of ample dimensions—For 1¾in. tyres, 2½in. across the chord and 3in. over all; for 2in. tyres, 3in. across the chord and 3½in. over all; for 2¼in. tyres, 3½in. across the chord and 4in. over all.
4. Stand and luggage carrier.
5. Efficient silencer, which does not exhaust directly on to the road.
6. Magneto reasonably protected from mud, or placed in a sheltered position.
7. Tool bag of ample capacity.
8. Tyres of standard size.
9. Lamp complete.
10. Spring front forks.
11. Lubricating oil tank capacity—for lightweight 1 pint, others 1 quart.

In addition, the machine must be in good condition and reasonably clean and the engine and crank case reasonably free externally from oil, at the conclusion of the trial. Cut-outs may not be used, and if fitted must be sealed. The judges shall have power to disqualify noisy machines.

The weights of all machines will be taken.

TOOLS AND SPARES.

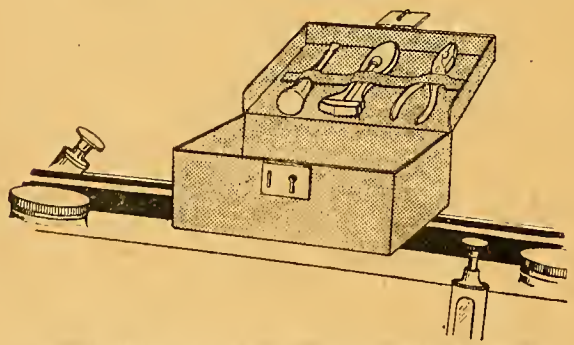
Some Hints on the Arrangement of Toolbags and Carriers.

"MAY I borrow a screwdriver for half a minute?" "With pleasure!"—and I watched. The process was an interesting one. Stooping down to look under a large flat suit case, strapped on top of the carrier, my obliging friend proceeded with some difficulty to undo two straps and a snap lock. This allowed the top of the pannier bag, in which the search was to be made, to open about an inch and a half. The end of a tool roll was coaxed out, and a series of sharp pulls produced the rest of it with a few tools sticking to it at intervals. The screwdriver was conspicuous by its absence. Some sleight-of-hand tricks with the loose tools still in the empty bag, followed by a repetition of the whole process on the other side of the machine. produced the coveted weapon. But the man looked hot, and I was sorry I had troubled him.

Convenience in Attachment.

Now was all this necessary? The modern motor cycle is a machine which, if properly looked after, seldom requires mechanical adjustment on the road—nevertheless a spanner, like a revolver, when it *is* wanted, is wanted badly and in a hurry. This being the case, why should we keep it wrapped up in a wallet which is tucked away in any place on the machine which to the designer's eye appears a trifle naked?

We have toolbags which shake open, toolbags which break their fastenings and drop off, which let the rain in and forget to let it out again, which sag out of shape and collect the mud off the back wheel, or develop holes in the bottom and lay a trail of tools and spares to tempt the wandering yokel from his rightful duties. All this and more because the much-abused toolbag is looked upon as an accessory and not as an essential part of the machine.

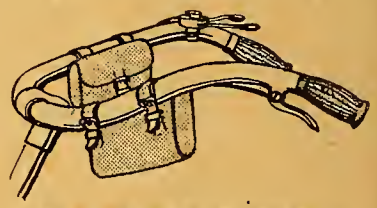


Toolbag affixed to the top tube, a pattern which Mr. J. L. Norton claims to have introduced. The screwdriver, pliers, and adjustable spanner, are all in an accessible position in the lid of the box.

It would seem, then, that with all these tricks the wily toolbag is worth watching, and the only place where it can be safely under observation and at the same time handy when needed is in front of the rider, either on top of the tank or on the handle-bars. The latter is the position adopted by several well-known competition riders and by a few of the leading makers. It is a great advance on the bag fixed to the carrier, but is open to one or two minor disadvantages. Briefly, the weight of a full toolbag with tools and spares is considerable, and will affect the steering appreciably; the bottom of the bag being wide and unsupported it is apt to sag under the weight; the attachment of the bag may interfere with other handle-bar fixings, such as speedometer and generators mounted inside the bar. Also the appearance is hardly neat when the bag gets worn and old.

The Ideal Position for a Tool Case.

The first position mentioned seems to be the ideal one, on top of the tank. Here it is immediately get-at-able, even while riding, it keeps clean, does not sag, and there is little tendency for the fastenings to break or come loose since they take no weight. One great disadvantage of fastening the bag to the carrier is the inconvenience caused, as in the case of my friend before mentioned, when other luggage has to be carried above it. This is a great point in favour of the tank position, for it is in the way of nothing, provided sufficient care be taken in fitting the bag to leave room to reach filler caps and oil pump. Here, also, it is directly under the rider's eye, and is less liable to be left open. Should it come unfastened the defect is immediately apparent. It is best fastened with a snap-lock, which can be locked with a key on putting the machine into a strange garage for the night. It is extraordinary how tools "leak" out during the night without anyone knowing anything about it next morning.



Showing small bags on the handle-bars for light tools and sundries.

Having thus selected the place for the toolbag, we may briefly discuss the best methods of carrying in it all that may be required by the average rider.

Separate Compartments for Certain Tools.

First of all we consider the three indispensable tools, the shifting spanner, screwdriver, and combination pliers. It is seldom we need more than these for a casual adjustment. Get the nearest saddler to sew a strip of stout leather across the inside of the top of the case with three loops for these three tools. It will cost sixpence and save pounds worth of labour and temper before needing renewal. Thus on opening the bag the three most needed tools are at once available without disturbing any of the rest of the contents.

Every motor cyclist has his pet selection of tools and spares, and it is needless to go into such a list here. We may refer the reader to such books as "Hints and Tips for Motor Cyclists" or "Motor Cycles and How to Manage Them" for further information on the subject. But whatever the selection may include, always carry the repair outfit, complete with tyre levers and gaiter, separately in a roll. The extra tools, of course, will be carried in a second roll. Here it may be mentioned that the rolls with the end flaps are the most convenient, though they take up slightly more room. Without end flaps the small sharp ends of files and other tools will work out, and either bore holes in the sides of the case or rattle; the tools also have an

Tools and Spares.—

inconvenient way of falling out when the roll is opened. The writer always carries a small soft leather pouch, such as is sold for push cycles, inside the larger toolbag, in which are placed all the miscellaneous collections of bolts, nuts, washers, belt fasteners, and other oddments which every rider hoards up for himself. These should not be allowed to shake loosely together inside the bag—the nuts keep bright if allowed to do so, but this is the only advantage; the disadvantage is that after two hundred miles the threads of all the bolts are hopelessly worn and burred up, screws have come out of their belt fasteners and are useless, and a fine black metallic powder is produced which penetrates into every crevice and eventually rusts there. The odds and ends should never be carried in a metal box.

We see then that the whole of the tools and spare gear may be divided into four bundles. The T.T. rider will have no difficulty in getting his four into the tool case on the tank. The potterer and the weight-carrier, however, will probably find their bundles too bulky to go into one bag. To them we would recommend the plan of strapping their oddments pouch to the handle-bar, in which case the pouch should be of better quality and water-proofed. If necessary another similar pouch to hold a few of the lighter tools may be strapped on the opposite bar to match. They will not look unsightly, and will leave room for the more bulky kit in the large case.

The ordinary stops on the road are caused by puncture, or a nut or bolt shaking loose; the whole kit necessary for either of these repairs may be spread out in less than three seconds without disturbing anything else in the toolbag. Surely this is an advantage, especially when a stop is necessary in bad weather or when time is of importance.

Tool Cases de Luxe.

An elaborate case may be made for carrying tools and spares by carving out a block of wood so that each tool or spare fits accurately in a space made for it, which cavity may be lined with thin baize. Another method is to fit the tool case with shallow trays in which paraffin wax has been poured. Each tool or spare is then embedded in the melted wax, and when removed after the wax has set there is a perfectly snug nest for each article. These methods are expensive and bulky, but can be done quite well on sidecar machines, and will be found to save time, trouble, and keep away irritability when anything goes wrong on the road.

To follow out the points mentioned in this article may involve a little trouble and expense, but experience has proved over and over again that both are amply repaid by the saving of time and trouble on the road.

J.G.T.

Variable Gears and Motor Cycles.

V.—How to Use a Variable Gear.

AS a conclusion to my notes on variable gears, a few remarks on their use may not be out of place. It will be readily understood that, given a certain velocity along the road, the engine must be turning faster, in some cases twice as fast or even more, when the low gear is in use. Therefore, in changing from high to low there is no need to raise the exhaust valve, or, if a separate clutch be fitted, to declutch; as the moment when the engine is running free enables it to quicken up, and if the change is well timed it will be running at the correct number of revolutions to take up the low gear without jar or jerk, even when the change is made by dog clutches, or sliding teeth. On the other hand, when changing up, the speed of the engine must always be reduced, if the high gear is to come into engagement smoothly and pleasantly. This is most easily done by raising the exhaust at the moment of change, thus as before giving the engine time to change its velocity, but this time to slow down. The same rules apply when the engagement is made by friction clutches, but so much care is not needed, though it is desirable.

"Slam-bang Too Much."—Kipling.

Even when a gear is said to be so fool-proof that it can be slammed or banged in without damage, I would strongly advise riders to abstain from following such advice, for extra strength in the gear will only throw extra strain on the engine, transmission, frame, and tyres. It stands to reason that the speed of an engine cannot be suddenly reduced one-half or the speed of the machine doubled in an instant without placing great and undue strain upon the mechanism, and no one who has any sympathy with his engine would attempt such a thing. The clutch possibly would slip a little, and belt likewise, and so relieve the other parts slightly, but why subject these parts to more strain than is absolutely necessary? They have enough to stand in legitimate use, and so have the tyres. Forcing the tyres to slide on the road will cause more wear than miles of fair running, and also induce side-slip.

Ratio of High to Low.

Many gears have a 1 to 2 ratio from high to low, especially those made on the epicyclic principle. This is, I think, too much for solo work, though it may be required for sidecars, but even this is a disputed point, as slow climbs on a very low gear are trying on hills that are just too steep to be taken on top. This points to the desirability of a third gear and the great advantage held by variable-speeders. Personally, I should say that a 2 to 3 ratio between high and low was quite sufficient, *e.g.*, 4½ to 1 on top, 6¾ to 1 on low, would be very suitable to a standard 3½ h.p. single. The low gear would be found useful in towns and on muddy roads, as well as on hills. At a speed of 10 m.p.h. or less it would be pleasanter to ride, and the tendency to side-slip would be lessened considerably. For sidecar work a lower gear is to be recommended. Then the rider is faced with an alternative of a rather low top gear, a long drop between the two gears, or the fitting of a three or variable speed gear. If the pocket admits, I should certainly choose one of the two last; if not, the low top gear is to be preferred.

AURIGA.

CLUB NEWS.

Cambridge M.C.C.

The annual general meeting will be held at headquarters, the Blue Boar Hotel, Cambridge, on Wednesday next, the 7th inst., at 8.30 p.m.

Huddersfield and District A.C.C.

The prize distribution took place on the 24th ult. Ninety members were present The evening concluded with a musical programme.

Liverpool A.C.C.

The annual general meeting was presided over by Mr. T. Mogridge. There was a good attendance. The election of officers resulted as follows: Vice-president, Mr. V. Barton; chairman, Mr. L. Mogridge; treasurer, Mr. O. Lindop; secretary, Mr. C. Hobbs; captain, Mr. E. F. Baxter; The question of affiliation with the A.C.U. was referred to a committee.

Wimbledon M.C.C.

There will be a club run to Burford Bridge, Dorking, on the 4th inst., starting from the Town Hall at 10 a.m. The following officers have been elected: Captain, Mr. E. P. Lyon; vice captain, Mr. W. P. Tippett; hon. treasurer, Mr. E. T. Lyon; hon. secretary, Mr. G. B. Barham, 347, Kingston Road, Merton Park, S.W. The opening run was along the Portsmouth Road, when the attendance was quite good.

Oxford M.C.C.

The annual meeting of this club, which was well attended, took place at the Hotel Restaurant Buol, Oxford, on Wednesday, January 24th.

The following officers were elected:

Captain, Mr. H. G. Hill; vice captain, Mr. G. F. Cooper; hon. treasurer, Mr. Ernest Lewis, A.C.A.; hon. secretary, Mr. W. A. Matthews; trials hon. secretary, Mr. F. G. Barton.

A scheme for establishing a club room was put before the meeting which, if carried into effect, would require an increased subscription, and it was decided to take a ballot.

The annual dinner will be held at the Hotel Restaurant Buol, Oxford, on Saturday next.

Motor Cycle Union of Ireland (Ulster Centre).

The annual general meeting of this centre was held on Friday evening, the 26th ult., in the Grand Central Hotel, Belfast. Mr. R. G. Lindsay (president) occupied the chair, and there was a large attendance of members. The secretary submitted a most satisfactory report of the year's work, progress being recorded in every direction. During the year thirty-four new members were enrolled. The financial statement was equally satisfactory The following officials were appointed for the present year: President, R. G. Lindsay; hon. sec., Mr. L. Maclaine; hon. trials sec., Mr. D. H. O'Flahety; hon. treasurer, Mr. I. Holden. It was unanimously resolved, on the motion of the Chairman, to amend the rules to permit cross-Channel motor cyclists being admitted to membership at half the usual annual subscription, thereby entitling them to compete in all events confined to members. It is hoped a number of English riders who occasionally cross to the Emerald Isle will take advantage of this privilege.

Dublin and District M.C.C.

A very satisfactory record of progress was presented by the hon. sec. and hon. treasurer at the annual meeting of the above club, which was held under the presidency of Mr. F. A. Wallen on Wednesday, the 17th ult. The membership increased by 60% during the past season, and 80% more money was offered in prizes than in the preceding year. Despite this drain, the balance carried forward was 50% more than the amount brought in. The officers for the coming season were elected as follows: President, Dr. Reginald White; hon. sec., Mr. F. J. Walker, 9, Grafton Street, Dublin; assistant hon. sec., Mr. J. L. Walsh; hon. treasurer, Mr. J. Molloy; captain, Mr J. Browne; vice-captain, Mr. J. Doleman. It was decided to affiliate to the Motor Cycle Union of Ireland. The programme of the coming season was discussed at length, and many prizes were offered during the evening.

Wolverhampton M.C.C.

The above club held its first whist drive and dance on Monday, the 22nd ult. There was a good attendance.

Wigan M.C.

A hot pot and smoking concert will be held at Dog and Partridge Hotel, Wigan, on Wednesday, the 7th inst., at 7.30 p.m. An excellent programme has been arranged.

Bournemouth and District M.C.C.

A club with the above title has been formed, the organising committee including Messrs. Noble Iddon, J. Harvey, A. G. H. Alsford, and F. G. Goldney.

Sheffield and Hallamshire M.C.C.

To-day (Thursday) Mr. J. L. Norton will lecture on "Efficiency and Power" at headquarters. All members and friends are cordially invited. The annual general meeting will take place on February 8th.

Scarborough and District M.C.C.

Mr. J. L. Norton will lecture to-morrow evening on "Timing and Efficiency." The annual general meeting will take place on the 28th inst., at 8 p.m.

Legal M.C.C.

The Law Students' Union is undertaking the formation of a Legal Motor Cycling Club. Solicitors, barristers, articled clerks, clerks who have been articled to solicitors, and bar students will be eligible for membership, and any who are desirous of joining should communicate with Mr. C. F. King, 21, Arundel Gardens, London, W.

Cork and District M.C.C.

The annual general meeting took place on Friday evening. The reports from the hon. secretary and treasurer showed that the club had a very successful season. The hon. secretary, Mr. R. S. Russell, 4, Princes Street, Cork, will be pleased to give full information to prospective members.

Halifax and District M.C.C.

The annual general meeting was held at headquarters, the Old Cock Hotel, on Wenesday, the 24th ult. The officers elected for the ensuing year were: Mr. M Youngman, president; Mr. J. Haigh, treasurer; Mr. E. C. Bedding, hon secretary.

Putney and District M.C.C.

The annual dinner will be held at the Comedy Restaurant, Panton Street, Haymarket, on Saturday next, the 3rd inst.

The annual general meeting will be held at headquarters, the Northumberland Arms Hotel, at 9 o'clock on Saturday, February 10th. Items for the agenda should be sent to the hon. sec. before this date. The prizes will be distributed to the winners for 1911. The opening competition on February 18th will take the form of a members' reliability trial to Oxford and back.

Harrogate and District M.C.C.

The annual gymkhana held on Wednesday, January 24th, in the Skating Rink, proved more enjoyable than ever. The entry was rather small, but this was accounted for, to some extent, by the adverse weather. There were eleven events altogether, which resulted as follow:

Tilting at Rings.—1, H. W. Fortune (3½ New Hudson); 2, W. E. Grange (2½ Premier).

Egg and Spoon Race.—1, F. Stafford (3½ Humber); 2, W. B. Atkinson (3½ Triumph).

Ring and Bucket Race.—1, W. E. Grange; 2, T. Maynard (3½ Triumph).

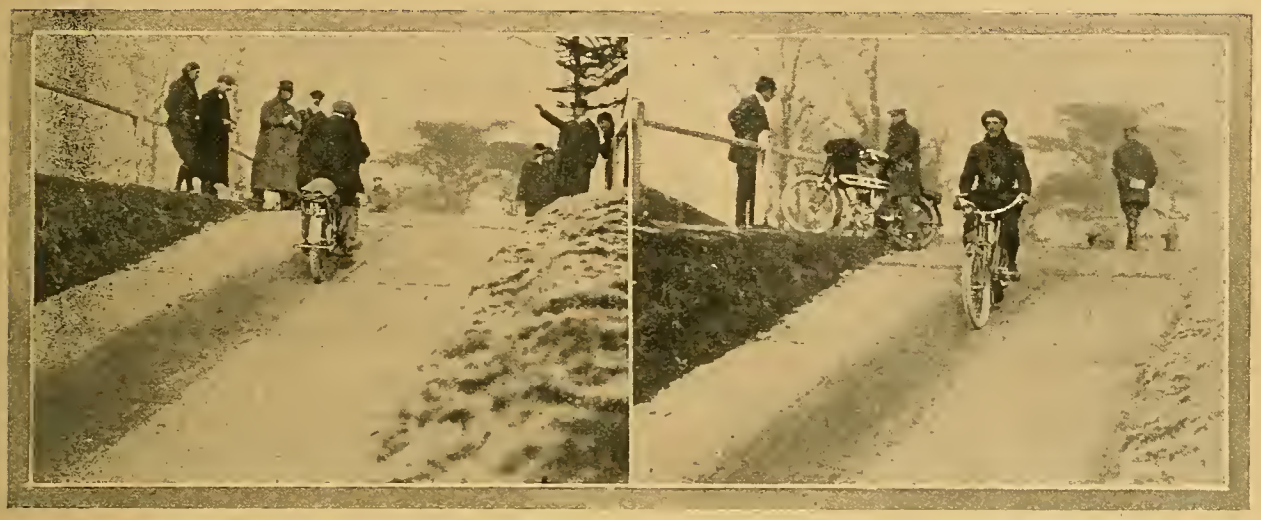
Obstacle Race.—1, H. W. Fortune; 2, F. Stafford.

Musical Chairs.—1, F. Stafford; 2, W. E. Grange.

Foot and Wheel Race.—1, W. E. Grange; 2, E. R. Davies (3½ Triumph).

A tricycle race was an innovation, the maker of the fastest lap to be the winner. F. Stafford, who was the first to start, found the machine unmanageable, and going off at a tangent, finally ended up among the spectators. Tindall turned the first two corners, but had trouble on the straight, when the machine decided to go amongst the spectators and Tindall to turn a beautiful somersault. The remainder were painfully slow, but J. Mackay proved the winner.

WAR OFFICE TEST AT BROOKLANDS.



(1) H. V. Colver (Enfield) nearing the top of the test hill on the 1 in 4. F. W. Barnes (Zenith) descending after making a good climb.

AS was announced exclusively in these pages last week, the Transport Committee of the War Office decided to hold a private motor bicycle trial on Brooklands track on Monday last, with a view to finding out how nearly the machines they had invited to attend would come to their ideal. The War Office ideal was forty-five miles an hour for machines up to 500 c.c., and forty miles an hour for machines up to 350 c.c. Machines in both classes were expected to take a 12 stone rider up the test hill from a standing start. The committee present consisted of Colonel H. C. L. Holden, R.A., C.B., F.R.S., Major O'Donohue, A.S.C., Major Stevenson, D.S.O., R.E., Captain H. E. Davidson, R.E. (Secretary of the Transport Committee of the War Office), Major Cumberlege, A.S.C., and Mr. Phelps, of the India Office.

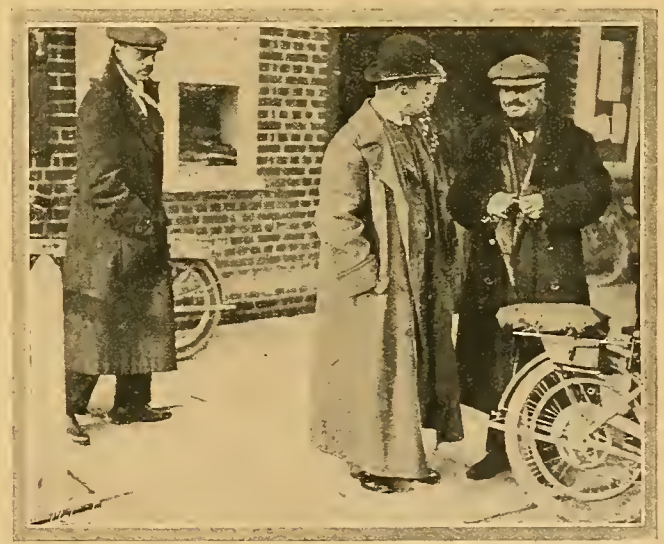
Monday morning was bright and frosty, there was no wind, and though it had been very foggy in town, the mist had almost entirely cleared from the track at 11 a.m., when nearly everyone had arrived. As soon as a sufficient number had collected they repaired to the fork, and the following riders with their machines took their places at the starting point:

The Competing Machines and their Riders.

H. V. Colver (2¾ h.p. two-speed Enfield).
G. L. Fletcher (2¾ h.p. two-speed Douglas).
Hugh Gibson (3½ h.p. Bradbury, N.S.U. two-speed gear).
*W. F. Newsome (3½ h.p. Triumph, free engine).
F. W. Barnes (3½ h.p. Zenith-Gradua, variable gear).
P. Shaw (3½ h.p. P. and M., P. and M. two-speed gear).
*S. Spencer (3½ h.p. Rudge, free engine).
R. Holloway (3½ h.p. Premier, Armstrong gear).
*The only single-geared models.

Gibson's machine was fitted with an elaborate belt guard, which he assured us he had found most successful, especially when it had first been tried in the London-Exeter Run. Newsome's Triumph was geared 5 to 1, and he did not alter his adjustable pulley throughout the test. Spencer's Rudge had the exhaust pipe running into a silencer, whence there issued a long extension pipe with a flattened end, terminating near the rear axle. R. Holloway (3½ h.p. Premier, Armstrong three-speed gear) arrived late and was allowed to start some time after the others.

The riders and their machines had to make two circuits of the track, the first lap being timed from a standing start and the second with flying start. The order of the first lap was: Barnes leading by 100 yards; Newsome, Fletcher, and Shaw in close order; and after came Colver and Spencer. Gibson was right behind, owing to a sooted plug. At the end of the second lap Barnes led easily, and was followed by the same three in close order, namely, Shaw, Fletcher, and Newsome. Then came Colver, then Spencer, whose inlet tappet rod jumped out of position just as he had completed the second lap. Gibson's delay was



Capt. Davidson (left), secretary of the War Office Transport Committee, and Colonel Holden (centre). The last-named is seen chatting with our London editor.

War Office Tests at Brooklands.—

due to a sooted plug, and consequently both he and Holloway, who arrived late, were timed separately. No official times were announced, but it is reported that Holloway, on the Premier, travelled very fast. The unofficial times which we publish were taken by Mr. Harry J. Swindley.

The Speed Trial.

FIRST LAP TIMES (STANDING START).

	m.	s.	m.p.h.
F. W. Barnes (3½ Zenith)	3	46⅖	= 43.2
W. F. Newsome (3½ Triumph) ...	3	48	= 42.9
G. L. Fletcher (2¾ Douglas) ...	3	48⅗	= 42.8
P. Shaw (3½ P. and M.)	3	49⅕	= 42.7
H. V. Colver (2¾ Enfield)	4	12⅖	= 38.7
S. Spencer (3½ Rudge)	4	19	= 37.8
Hugh Gibson (3½ Bradbury)			
R. Holloway (3½ Premier)			

SECOND LAP TIMES (FLYING START).

	m.	s.	m.p.h.
F. W. Barnes (3½ Zenith	3	40⅗	= 44.2
P. Shaw (3½ P. and M.)	3	50	= 42.5
G. L. Fletcher (2¾ Douglas) ...	3	52⅖	= 42.0
W. F. Newsome (3½ Triumph) ...	3	53	= 41.9
H. V. Colver (2¾ Enfield)	4	18⅘	= 37.9
S. Spencer (3½ Rudge)	4	19	= 37.8
Hugh Gibson (3½ Bradbury)			
R. Holloway (3½ Premier)			

The Hill Test.

Immediately after the conclusion of the speed trial the hill test took place. The first man up was F. W. Barnes, who was timed by Mr. Swindley roughly to accomplish the distance in 9⅖s. The official time-keepers, however, did not take this time. R. Holloway came up in 18⅖s., Shaw in 12⅘s., Newsome (with the same 5-1 gear he had employed in the speed test) in 17⅖s., Fletcher in 15⅗s., Barnes (on his second attempt) in 12⅘s. Gibson, who had been in the wars and had broken his pedalling chain, ran into the bank on his first attempt, but got up in 15⅗s., Spencer in 18⅗s., and Colver in 19⅗s.

It was then intended to weigh the machines and their riders, but unfortunately this could not be accomplished, as the weighing machine was water-logged, and even though most of the water had been pumped out it was found quite impossible to make it work properly.

Altogether the test was quite an interesting one, and though the Zenith was the only machine which apparently satisfied the War Office officials, we do not think we should be very far wrong in saying that all accomplished what was required of them, as we were led to understand that the War Office ideal would not be absolutely insisted upon. Though Holloway's Premier and Gibson's Bradbury could not, owing to their starting late, be timed by Mr. Swindley, it appears that they satisfied the judges. Quite a feature of the trial was the splendid way in which the 2¾ h.p. Douglas kept up with the two other machines of 3½ h.p. in the speed test. In the hill test Barnes and Fletcher shone conspicuously, while Shaw, it will be noticed, also did particularly well.



ICE SCENES AT BROOKLANDS.
W. Stanhope Spencer, the single-cylinder hour record holder, tries his Rudge on the ice. He was much happier on skates.



Major Stevenson and Capt. Davidson conversing with W. W. Douglas and G. L. Fletcher in the paddock.



Aviators and motor cyclists proved themselves at the beginning of the week at Brooklands as expert on the ice as on their machines.

Cost of Running a Motor Cycle.

A Selection of Replies to a Reader's Query.

See also pages 1197, 1247, 1318A, 1357, 1380, *and* 1422 (1911), 5 *and* 64 (1912).

Sir,—Having read in your columns the small expense incurred by many motor cyclists, I send you my own, which may be of interest.

The conditions under which a cycle is run by an officer in a seagoing ship are naturally very different from those ashore. Storing at various garages, waste of petrol through emptying tank when bringing the cycle on board, and other items rendered necessary, all combine to swell the running expenses.

The high first cost is shown in detail.

The depreciation is also naturally high in a specially-fitted machine, so I allow £30, as probably the cycle will be sold after another season, when possibly only £30 will be obtained, leaving a deficit of approximately £60 to be spread over two years. The following are the details:

Prime cost—			
Standard Triumph, 1911		£48	15 0
Roc gear, 1911		12	12 0
Special back stand		2	2 0
Extra silencer		1	10 0
Lamp complete		1	15 0
Extra for Brooks' anti-vibratory seat			19 0
Horn, cross-bar, plug, valve, registration, and number plates		2	19 7
Erecting and assembling machine:			
Labour £6 14 3			
Material 16 2			
		7	10 5
Soare starting handle, etc.			14 6
A.S.L. fork and saddle air springs		5	19 0
Sundries		1	1 0
Total first cost		£85	17 6
Current expenses—			
Licences		£1	5 0
Insurance		4	10 3
Storage and cleaning		2	15 6
Petrol		1	13 1
Small alterations and fittings			19 0
Oil and grease			9 4
A.S.L. air springs, spare parts, and repairs			8 3
Small spares, not otherwise included			6 9
Two belts and repairs		1	17 3
Repairs and overhauls of engine and cycle, not otherwise included		1	1 0
Roc gear, renewals, repairs, dismantling for cleaning three times and re-assembling, etc.		3	10 0
Tyres—repairs, patches, etc.			17 1
Lamp carbide, etc.			2 2
Sundries, overalls, carriage by rail, etc.		2	6 1
Total running expenses		£22	0 9

The machine was delivered in March, 1911, and has only run 2,338 miles, all solo.

Results are roughly as follows:

		Cost per mile.
Actual running expenses	£16 5 6	1.67 pence
Total running expenses, including insurance and licences	22 0 9	2.26 ,,
Season's cost, including depreciation £30	52 0 9	5.3 ,,

The expense having been met out of income, no charge is made for interest. The cycle has been carefully ridden, but expense has not been spared in order to avoid breakdowns, inasmuch as belts, etc., have been scrapped when by patching they would have lasted longer. But when one's rides are few, roadside repairs are a nuisance.

COMMANDER, R.N.

[The above is, of course, a very exceptional case, owing to the short distance run and the number of additions made to a standard machine.—ED.]

Sir,—The comments of your correspondent "C.M." on page 64, January 18th, are excellent, and if every user of a motor cycle would state in his season's riding expense the railway fares saved, I think it would prove to would-be motor cyclists the advantages gained by this method of travel especially to commercial men. I have saved during the period mentioned in my riding expenses of January 18th, page 64, a sum well over £9 in railway fares. In addition to this when I have to travel by train to my business places I have ten miles to walk every time which takes me three hours. In the nine months I should have had to walk 380 miles, which would take a potterer like me, at three miles per hour, about 127 hours, or at twelve hours per day about eleven days: What price shoe leather, time, and extra sustenance? Deduct the £9 saved in railway fares from my total expenses you published and £3 14s. 4d. is left.

Considering the pleasure I have derived and the time I saved for such a small extra outlay, every would-be motor cyclist can form a decision. It would certainly not pay me to become an occasional tramp for such a small outlay. The advantages are obvious; even I can "C.M."

AGAIN A POTTERER.

Sir,—I am sending you cost of running of my 1911 T.T. roadster Triumph, Dunlop tyres, and belts, from January, 1911, to January, 1912. Mileage run, 6,005, of which 2,000 were with passenger on carrier:

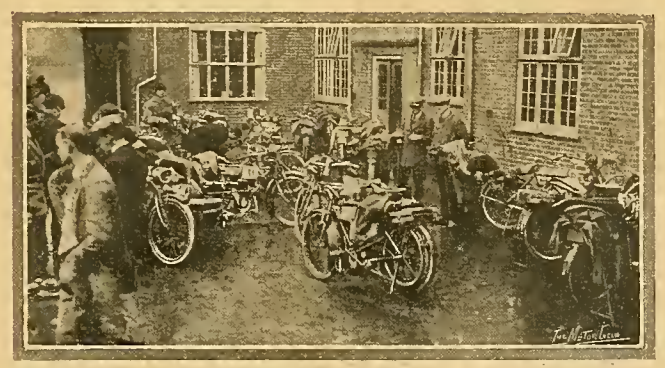
Petrol, 64 gallons, 93½ m.p.g.	£4	8	4
Oil, 2½ gallons, 2,400 m.p.g.		13	2
Tyres, and repairs to same	2	11	9
Belt and fastener		19	0
Carbide		2	6
Licences	1	10	0
Plug		4	0
Repairs to footrest		2	0
Sundries		4	0
Depreciation	12	0	0
	£22	14	9

The above is the cost of running machine, and works out at .81d. per mile. If I add all extras, which have nothing really to do with cost of running, such as lamp, hooter, whistle, speedometer, club subscription, hill-climbs, garages, and tips, the cost is £29 8s. 10d., or 1.18d. per mile. I do not ride slowly, and it is interesting to note the engine has cost me *nil*.

Taking "C.M.'s" hint in *The Motor Cycle* of January 18th, about the saving of train fares, I have saved about £16 on journeys I should have gone even if I had not had a motor cycle.

G. O. BRUNWIN-HALES.

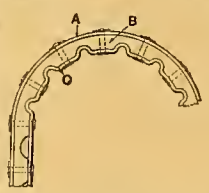
HERTS. COUNTY A.C. QUARTERLY RELIABILITY TRIAL.



The assembly at the Rose and Crown Hotel, Tring, for the luncheon interval.

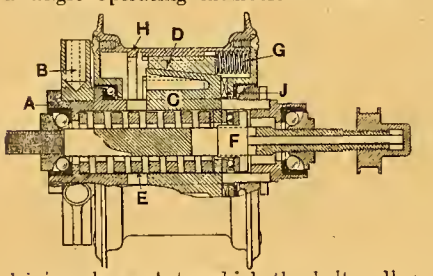
A Special Belt.

This belt is built up of three members, A, B, and C. Of these, A and C are formed of balata or similar belting, while the middle member B is formed of a rubber composition, affording an effective gripping medium, the members A and C forming a strong non-stretching transmitter. The member B is recessed on its inner face as shown, to enhance the flexibility of the belt.—F. W. Barnes, No. 265, 1911.



A Clutch Hub.

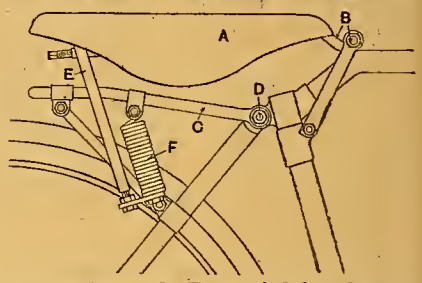
This is an ingenious construction in which the drive is first taken up frictionally, and then positively, the drive in both cases being under control, through a single operating member. There is a driving sleeve A to which the belt pulley is spoked at B, and upon which is mounted a cone clutch member C, co-operating with a corresponding member D splined to the hub shell. The cone C is normally impelled into engagement with the cone D by a spring E, but may be withdrawn therefrom by a push rod F. The cone D is free to slide a short distance in the hub shell, springs G moving it over against a stop H when the clutch is disengaged. The cone C is formed with dogs J co-operating with similar dogs carried on the hub shell. In action when the push rod is operated the cone C is forced out against the action of the spring E, the cone D moving into contact with the stop H. If now the push rod be released the cone C moves into engagement with the cone D, transmitting the drive frictionally to the hub shell. Further, withdrawal of the push rod allows the spring E to move the cone C further into engagement, and ultimately the cone D will be moved, against the action of the springs G, allowing the dogs J to come into engagement, providing a positive transmission.—F. G. Galley and R. M. Brice, No. 1,670, 1911.



PATENTS by Eric W. Walford A.C.I.P.A.

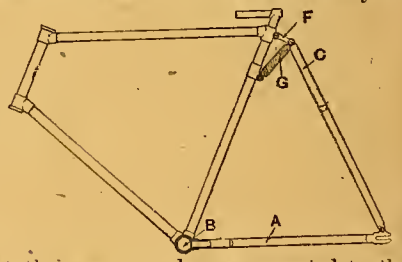
Saddle Springing.

The illustration shows a construction of saddle in which the usual underframe is dispensed with, the seat proper A being supported at the peak on links B connected to the frame of the machine, and at the rear from a light bracket C, secured by the saddle-pillar bolt D. The connection from the rear of the saddle to the bracket C comprises rods E, carried by the tension springs F.—E. Lycett, No. 7,289, 1911.



Rear Springing.

Although this invention is shown applied to a pedal cycle its adaptability to a motor cycle is obvious. The chain stays A are arranged to pivot about the bottom bracket B. The saddle stays C at their upper ends are connected to the seat pillar lug by links F, which permit of movement under the restraint of springs G.—W. Griffiths, No. 6,940, 1911.



Tyre Successes.

In the Herts County Quarterly Trial, three out of four gold medal winners, and the winner of the amateur cup (E. A. Colliver, 6 h.p. Zenith), were mounted on machines shod with Hutchinson covers.

The College Mudshield.

In a recent mention of the College mudshield, made by Beard-Brown and Co., College Street, Northampton, it was inadvertently stated that the headquarters of the firm were at Wolverhampton.

A Tyre for Sidecar Wheels.

The latest Dunlop production is a new tyre for sidecar wheels. It is of the beaded edge type, with longitudinal grooves on the tread, and is made in the regulation size, 26in. × 2½in. The quality is up to Dunlop standard, and in the matter of cost it is cheaper than an ordinary motor cycle tyre.

Moulding and Vulcanising Under Pressure.

The Leicester Rubber Co., Granby Street, Leicester, the makers of the "John Bull" Cross grooved tyres, are exceedingly satisfied with the results of their exhibit at the recent Show. The two cover, which had done 12,000 and 8,000 miles respectively, and were still in good condition, attracted considerable attention. This tyre is actually moulded to the exact shape it would assume when inflated, and during vulcanisation is subjected to the enormous pressure of more than half a ton to the square inch. This renders the tyre of an exceedingly tough quality, and has the effect of forcing the rubber into the foundation.



Another Firm Adopts the Motor Cycle Business.

It is a sure sign of the times when so important a firm as Messrs. Harrods' Stores, Brompton Road, S.W., take up the motor cycle business, the firm having taken the Cadogan rooms, just behind the main building, in which a special room is set apart for motor bicycles and sidecars. In the handsome hall, special displays are being given from time to time. On the occasion of our visit all the chief quadcars on the market were on view, at another time a speciality is made of motor bicycles, while from February 19th to March 2nd the display will consist of sidecar combinations. A point will be made of demonstrating the ease with which the sidecar can be attached and detached. Yet another speciality of Messrs. Harrods' motor cycle department is their deferred payment system, of which motor cyclists are taking advantage in ever increasing numbers. Business is also done in all types of motor cycle accessories.

Melbourne to Sydney Record.

Latest advices from Australia containing details of W. Tormey's remarkable ride from Melbourne to Sydney on his Dunlop-tyred 3½ h.p. Kerry-Abingdon give his time for the 577 miles which divide the two cities as 34h. 7m., beating the previous record by no less than 14h. 37m.

Trade Announcement.

W. F. Guiver has joined the staff of the Haven Motor and Cycle Works, 722a, Old Kent Road, S.E., a company which carries on the motor cycle business in all its branches.

"Model Flying Machines."

Although numbers of motor cyclists are interested in the construction and use of flying machines, it is obvious only a few of them can become flying men, owing to the very great expense attached to the purchase of such machines. Enthusiasts will read with interest the second edition of a book entitled "Model Flying Machines: Their Design and Construction," by W. G. Aston, one of our contributors. This book gives full instructions for the construction of small model aeroplanes of various types, and is illustrated with straightforward sketches and diagrams, which can be understood by anyone who has the slightest knowledge of model making. "Model Flying Machines" is published at *The Aero* Offices, 20, Tudor Street, E.C., and can be obtained from there, price 1s. 2d. post free. We have had ocular proof that models made to the instructions given in the above book will fly.

THE "ROYAL RUBY"

1912 MOTOR CYCLES

TRADE MARK RUBY REGISTERED THROUGHOUT THE WORLD

will be fitted with the following well-known fitments which will make them **second to none**:

J.A.P. ENGINES.
CHATER-LEA FITTINGS.
BOSCH MAGNETOS AND PLUGS.
BROWN AND BARLOW'S CARBURETTERS.
DRUID SPRING FORKS.
BOWDEN FRONT BRAKE, EXHAUST LIFT, AND MAGNETO CONTROL.
DUNLOP TYRES AND BELTS
BROOKS' SADDLES AND TOOLBAGS.
VILLIERS' FREE ENGINE HUB.
ROC TWO-SPEED AND FREE ENGINE HUB.
STURMEY-ARCHER THREE-SPEED AND FREE ENGINE HUB
Etc., etc., etc.

EVERYTHING OF THE HIGHEST POSSIBLE GRADE.

1912 Catalogues ready shortly. Free on application.
Don't miss writing for one, or call and see our new models.

Manufactured by

The Royal Ruby Cycle Co., "Ruby" Works,
Great Ancoats Street, MANCHESTER.



Slack's Patent SEWN BELT

Pattern No. 18408.

Anything New?

Yes, the leather motor belt revolutionized with success. Before offering these belts for sale we had them under severe tests for five months for sidecar work, and for hill-climbing in the High Peaks of Derbyshire, and we have had splendid results. The belts have run thousands of miles. They have been well tested on the following makes of machines:—Bat, B.S.A., Triumphs, 6 h.p. Rex, Ariel, and others. All the motor cyclists that have had them write and say they are simply splendid, we are open to give you their addresses and show their letters. The belt is very strong easily adjusted, and will grip well when running slack. This gives more power to the engine. The belt does not need oil, therefore does not pick up grit that wears the pulley. The belt is water-proof and is very pliable—will run round a 1½ inch pulley. The belt has a very handsome appearance. Don't doubt as to what we say, but give us a trial and you will be well pleased. It will save your pocket and a lot of worry. One motorist writes and says he was running over four hours under heavy rain, with sidecar and passenger—journey over 150 miles—and the belt never gave him any trouble. We make the belts in eight widths:—

¾ inch and ⅞ inch, **1/11** per ft. ⅞ inch and 1⅛ inch, **2/1** per ft.
1 inch and 1⅛ inch, **2/2** per ft. 1⅛ inch and 1⅜ inch, **2/4** per ft.

Carriage paid to any part of the British Isles.

Patentees and Makers: **R. SLACK & Co.**, LEATHER DRESSERS,
Chapel-en-le-Frith, DERBYSHIRE, England.

You will never be hung up —

on the road through ignition troubles if you fit the

"U.H." MAGNETO

Gives a perfectly regular spark under all conditions. Short circuiting is impossible with a "U.H." Send for particulars free on application.

S. WOLF & CO., 115, Southwark St., London, S.E.
Telegrams: 'Widerstand, London.' 'Phone: 5179 Central.

C.B.C.

MOSELEY

GROOVED



Extra strong beads, 3-ply heavy canvas

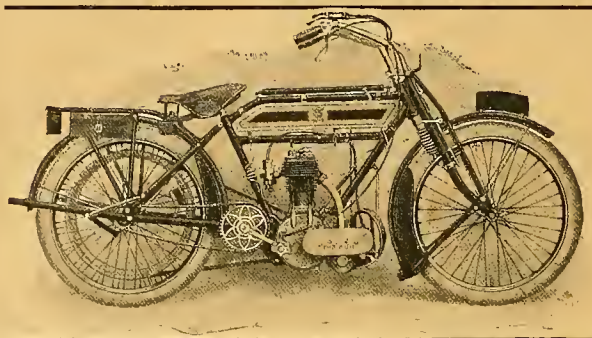
36/- per cover, 26 × 2¼ beaded.

FROM ALL AGENTS.

Catalogue free from the makers—

DAVID MOSELEY & SONS, LTD.,
Ardwick, MANCHESTER.

"SUN PRECISION" MOTOR CYCLES



Are the outcome of 25 years' ripe experience in the manufacture of Cycles and Motor Cycles. They are made in one of Birmingham's largest cycle and motor cycle works. **We invite you to come and see them in the making.** Only the very best of everything is put into them. They have already had a royal welcome in the best quarters. You are of course aware of the hundreds of "Precision" successes.

The Sun Cycle & Fittings Co., Ltd., Birmingham.

"DUNKLEY" SIDECARS HAVE SET THE FASHION FOR 1912.

OVER 20 DESIGNS TO SELECT FROM. FROM 5 GUINEAS TO 17 GUINEAS.

Place your orders for 1912 at once, and state date you require delivery. We can oblige you, as every Sidecar is made throughout in our own Works.

All complete with Apron, etc., ready for the road. List free.

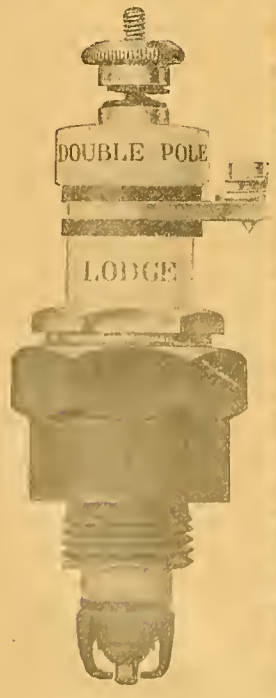
DUNKLEYS, No. 1, ALVECHURCH.

"HINTS AND TIPS FOR MOTOR CYCLISTS."

Third Edition. *Revised and brought up to date.* *Nearly 400 Hints and Tips.*

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'Two Sparks In Series'



THE LODGE PATENT DOUBLE-POLE SPARKING PLUG

enables you to fire at two plugs in the cylinder from the same magneto absolutely simultaneously.

The result is a marked INCREASE of ENGINE POWER.

Any ordinary plug is suitable for the second plug.

Full instructions supplied with every Lodge Double-pole Plug.

Ordinary standard thread fitting all motor cycles.

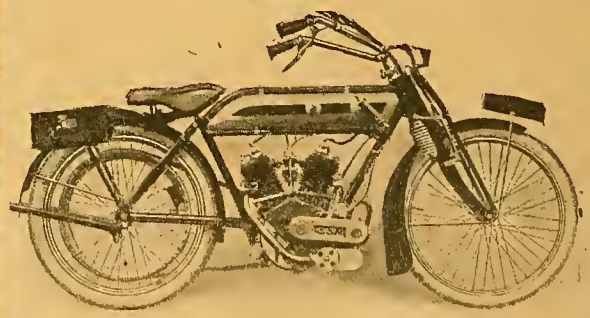
Suitable for use with all Magnetos.

PRICE 8/- EACH,

through all dealers or direct from

LODGE BROS. & CO.,
Dept. E, New Street,
BIRMINGHAM.

DEVOID OF TROUBLE
— MOTORS. —



5 and 8 h.p. Models.

The finest machine in the World for

Design, Workmanship, & Finish

NOW IS THE TIME TO BOOK YOUR ORDER FOR ONE OF THESE EXCELLENT MACHINES.

Write, 'Phone (2125 Central), or call—

H. Reed & Co., 306, Deansgate, Manchester.

Sole Agents for Manchester & District for the Canoelet Sidecars.

Applications for Agencies invited.

London Agents—The Service Co., Ltd., 292, High Holborn, London, W.C.
Liverpool Agents—Messrs. Henry Whitlock & Co., 40, Hope St., Liverpool.

1912 MODELS 1912

PREMIERS. CHATER-LEA.
MATCHLESS. CLYNOS.
RUDGES.

Early Deliveries—Best Exchanges.

TRIUMPH, 1909, two speeds £37 10
PHANOMEN, 6 h.p. twin, two speeds.... £35 0
REX DE LUXE, 5 h.p., two speeds, 1909 £27 10
REX, 3½ h.p., M.O.V., low built £6 18
MINERVA, Twin 4½ h.p. spring forks.... £16 10
N.S.U., 4 h.p., single cylinder, new last Sept., ideal sidecar machine £27 10
REX DE LUXE, 5 h.p., twin, two speeds, handle starting, M.O.V., 1911 model .. £48 10
REX DE LUXE, 5 h.p., twin, 2 speeds, 1910 £37 10
REX, 3½ h.p., spring forks, magneto, b.-b. control, 1909 model £22 10
N.S.U., 4 h.p., single-cylinder, oew two months ago.. ..... £28 10
REX, 3½ h.p., 1908, spring forks, magneto, b.-b. control, beautiful condition .. £16 10
N.S.U., 3½ h.p., two speeds, magneto ... £19 10
MOTO-REVE, 2¾ h.p., 1911, Armstrong 3-speed £27 10
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PREMIER, 3½ h.p., new, 1911 model £38 0
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PREMIER 3½ h.p. 1911, 3-speed, new.... £49 10
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HOBART, 3 h.p., vertical engine, low £6 10
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KERRY, 2¾ h.p., 26in. wheels, vertical engine £8 10
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TWIN REX, air-cooled, belt drive, Fit-all two-speed gear £14 10

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	Beaded.	Wired.	Tubes.
26 x 2	17/-	16/8	9/6
26 x 2¼	18/6	17/8	9/9
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28 x 2	19/-	17/-	10/-
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MICHELIN BUTTED TUBES.

26 x 2 11/6 26 x 2¼ 11/9 26 x 2½ 12/-
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Carriage Paid. All Guaranteed. Prompt Delivery

MISCELLANEOUS.

New Amac variable je and H.-B. Control 18/6
Good Forecar, less tyres 35/-
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Long Handle-bars, dropped ends 5/6 and 6/8
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New Handle-bar Mirrors 2/3
Gripskin Belting: ⅜in. 10d., ½in. 11d., 1in. 1/-
Wide Mudguards, 3in., 2/3; 4in., 2/11 pair.
Handle-bar Watches, with holders 4/3
New Sidecar Frame and Wheel..... 35/-
Trembler Coils, 6 6. Plain 2/11
Powell and Hanmer ¼ Lamp 11/6
16 Guinea Lowen Sidecar £4 4
Nearly New Coronet Sidecar..... £ 11
Millennium 2-speed hub £8 0
New Carrests 8
New Mirror Lens Lamp with generator .. 12/6
New Twin Roc Cylinder, M.O.V. 12/6
New Corocet Pistoos, 81 mm. bore 2/6
Light Car Chassis with springs and front wheels 30/-
Humber Spray Carburetter 2/6

Booth's Motories,
Keighley Mills, Bedford Street North, Halifax.
Tel. 1062.

MOTOR BICYCLES FOR SALE.

1911 Free Engine Premier, 3½h.p., with sidecar; £40.—Ewbank, Castleford, Yorks.

1911½ Triumph, soiled, £43; 2¾h.p. Enfield, nearly new, £31.—86, Fairgate, Sheffield.

1911 Free Engine Triumph, splendid condition; £46.—John H. Beaver, jun., Bingley.

1909 2h.p. Moto-Reve, magneto, £15; 1909 Triumph, £29.—Cross, jeweller, Rotherham.

CROSS for Triumphs, Matchless, and Bradbury motors; Standard Bradbury in stock; Triumphs and Matchless Feb. delivery.—Cross, agent, Rotherham.

B.S.A., 1912, 2-speed, free engine models, in stock.—Agents, Armitages, York St., Leeds.

B.S.A., 1911, 2-speed, all spares, perfect; £45.10.—Agents, Armitages, York St., Leeds.

CALTHORPE, 1912, 4½h.p., 2-speed, free engine models, in stock.—Agents, Armitages, York St., Leeds.

1910 Triumph Motor Cycle, in splendid condition, with spares, lamp, and horn; price £32/10.

1911 Moto-Reve, 2¾h.p. twin, shop-soiled; price £32/10, a bargain. — Lounds, Duckworth St., Darwen.

TRIUMPH, 1911, free engine, in excellent condition; £37/10.—Pritchard, Station Bridge, Eccles.

1909 P. and M., 2-speed, perfect order; £30 for spot cash.—A. H. Burnell, Ferrybridge, Yorks.

P. and M., May, 1911, used solo only, perfect; £50.—A. Blackburn, 326, Killinghall Rd., Bradford.

4h.p. Quadrant, magneto, spring forks, adjustable pulley, h.b.c.; bargain, £15.—65, Hilden St., Bolton.

IMMEDIATE Delivery of multi-speed free engine Rudge; splendid sidecar machine.—Ewbank, Castleford.

CLYNOS and Rudges, multi-speeds; deliver March; book now to secure.—Smith, Motor Agent, Horbury.

1911 F.E. Triumph, perfect, ready to ride away; a bargain, £40; owner must sell.—Chadborn, Motors, Ilkley.

3h.p. Humber, chain drive, free engine, handle starting; bargain, £7/10.—Bate, Park Rd., Golborne, Lancs.

MOTO-REVE, twin, 1910, good condition; £20—90, Barlow Moor Rd., Chorlton-cum-Hardy, Manchester.

LIVERPOOL Official Agents for Humber, Ariel, B.S.A., and Dot.—Henry Whitlock and Co., 40, Hope St.

3½h.p. Magneto Riley, Palmers, Whittle, adjustable pulley; bargain, £12/10.—Roberts, 14, Avondale St., Colne.

N.S.U. 5½h.p. Twin, free engine, with Montgomery sidecar (perfect); £30.—Bond, 181, Church St., Blackpool.

ONE Triumph, 2¼h.p., long handle-bars, low, re-bushed, good order; £8.—Baron, 386, Blackburn Rd., Accrington.

TRIUMPH, 1910, in excellent condition; best offer accepted; must sell.—57, Parrin Lane, Monton, near Manchester.

PHELON-MOORE and Sidecar, £55; Singer, 3½h.p., 1911, free engine, mileage 50; £45.—64, Westend Av., Harrogate.

TRIUMPH, late 1908, perfect condition; exchange for Rex de Luxe, or sell £25.—Richmond, Crown St., Chorley.

MINERVA, 2¾h.p., accumulator, tyres good, running order; nearest £8.—No. 9,472, *The Motor Cycle* Offices, Coventry.

MOTOSACOCHE, 2½h.p., new August, new tyre and Whittle, lamp, horn, etc., perfect; £28.—153, North Rd., St. Helens.

PRESTON.—This week's bargain. 3½h.p. Singer, B. and B., h.b.c., genuine 1911 Bosch magneto; first P.O. £8/17/6.

PRESTON.—Second-hand F.E. Triumph, 1909, 2-speed Humber, 1910 twin N.S.U., 3½h.p. Premier, and many others, also several second-hand sidecars; sale or exchange.

PRESTON.—For anything motor cyclish, new or second-hand, sale or exchange, remember The Motor Cycle House, 82a, Fishergate, Preston.

ARIEL, 3½h.p., 1911 model, decompressor, free engine, variable gear, spring seat pillar, new; cheap.—Gornall, Pilling, Garstang.

BRADBURY, 1912, just arrived, free engine, latest pattern.—Gornall, Pilling, Garstang, Lancashire.

N.S.U., 3½h.p., fitted with 2-speed gear, free engine, magneto; price £18.—Gornall, Pilling, Garstang.

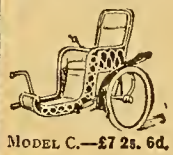
TRIUMPH, magneto (Dec., 1908), capital order, just overhauled, new belt, bag, and spares; £28.—Kirby, auctioneer, Thirsk.

£6.—3½h.p. Excelsior, good tyres and tubes, enamelling and plating good.—Motorist, 32, Downing St., Ardwick, Manchester.

CORONET SIDE CARS

WEIGHT *versus* STRENGTH.

You cannot expect your machine to pull a "Hansom Cab" Sidecar weighing 140 lbs. Apart from power required, the strain on the machine would be terrible. We make strong sidecars, weighing 56 lbs., with every comfort and protection, and suitable for 3½ h.p. machines.



MODEL C.—£7 2s. 6d.



MODEL A.—£5 5s.



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MODEL D.—£7 12s. 6d.

Instructive Catalogue post free, giving illustrations and full particulars of all models of Coronet Sidecars. Every model certain to satisfy and save money for buyers. Full of improvements. Quick detachable joints. Latest car pattern mudguards. Wicker, cane, or coach-built bodies. Child's reversible seat. Excellent upholstery.

NOTE front arm which grips main tube of sidecar, which is the only correct mechanical method—nothing lopsided about this attachment.

Delivery from stock to suit TRIUMPHS N.S.U.'s, REXES, P. & M.'s, BRADBURYS, etc. Discounts to Agents.



TEE BEE LOW SEAT-PILLAR, 5/- each.

GREAT CLEARANCE LINE.

New Dunlops, 28 x 2 and 2¼, wired edges .. 10/6
Dunlops, 28 x 2, beaded, heavy treads 14/9
2¼ x 2 and 2¼ Beaded Clipper Covers, new .. 8/6
Best Quality Butt-ended Tubes 6/9
150 New Tubes 26 x 2¼..... 5/11
Rubber-studded Covers, best make 25/-

ENGINES:

4 h.p. Twin N.S.U., with Bosch gear-driven magneto, brand new from makers £11 10
4 h.p. Twin N.S.U., with magneto £9 0
3 h.p. TRIUMPH, with Bosch magneto, less cylinder £5 10
3 h.p. FAFNIR, silencer, etc. £3 10
4½ h.p. BUCHET, water-cooled £6 15
9 h.p. DARRACQ, water cooled £9 10
10 h.p. CLEMENT, two cylinder..... £9 10
2 h.p. STANDARD £1 10
4½ h.p. PRECISION, oew 1912 Model £13 10
1¾ h.p. MINERVA £1 8 | 2½ h.p. DE DION £1 15
3 h.p. QUADRANT £3 0 | 2¾ h.p. MINERVA £3 5
Exchanges entertained.

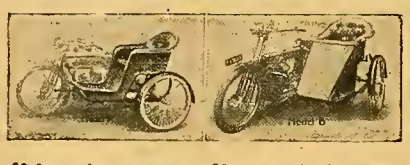
MAGNETOS. MAGNETOS. MAGNETOS.
We have a large stock of the best makes from 59/6. Your old coil and acc. taken in exchange.

NEW CARBURETTERS FOR OLD.
22/- and your carb. secures a oew B. and B. with h.b. control.
20/- and your carburetter secures a new Amac with variable jet and h.b. control.
SENSPRAY Carburetters, 1912 models, £2 2s.

BOOTH'S MOTORIES,
KEIGHLEY MILLS, BEDFORD ST. NORTH
(off Pellon Lane), HALIFAX. Tel.: 1062.

MAUDE'S BARGAINS

THE PORTLAND SIDECAR



£6 6s. model less apron. £6 6s. model with apron.



£7 7s. model. £8 8s. model.

26 x 2¼ Michelin tyres. Double Cee Springs. Wide mudguard. Three-point suspension. Dropped bearer bar if desired. Double stove enamelled.

Guaranteed twelve months. Need we say more ???

NOTE!!! Our £8 8s. Model weighs 78 lbs. only, not between 1 and 2 cwts., as suggested.

We have the under-mentioned dates open for delivery for various **1912 Models.**

ALL FULLY GUARANTEED.

RUDGE, 3½ h.p., standard	Ex-stock	
RUDGE, 3½ h.p., clutch	Ex-stock	
RUDGE, 3½ h.p., multi-speed	March	
ZENITH, 3½ h.p., Gradua gear	Ex-stock	
ZENITH, 6 h.p., Gradua gear	Ex-stock	
ZENITH, 6 h.p., Gradua gear	Jan.	25
DOUGLAS, 2¾ h.p., Model G	March	9
HUMBER, 2 h.p., 3-speed	Feb.	
ROVER, 3½ h.p., clutch model	Feb.	
NEW HUDSON, 3½ h.p., 3-speed	Ex-stock	
BRADBURY, 3½ h.p., standard	Ex-stock	
BRADBURY, N.S.U. 2-speed	Feb.	
BRADBURY, chain drive, 2-speed	March	
ENFIELD, sidecar combination	Feb.	14
INDIAN, 7 h.p., 2-speed	Feb.	19
BAT, 4 h.p., 2-speed	March	25
BAT, 6 and 8 h.p., two speeds	April	1
SCOTT, 3¾ h.p., two-stroke	April	25
A.J.S., 5 h.p., chain drive, 2-speed	May	20
HUMBER, 3½ h.p., two speeds	June	1
REX, 6 h.p., sidette	From stock	
REX, 4 h.p., De Luxe	Ex-stock	
REX, all other models	10 days	
CLYNOS (Halifax stocks only)	Feb.	
A.C. Sociables	March	14

List of Second-hand Machines for disposal, continued from other column.

TRIUMPH, 1908 model, 3½ h.p., frame cut down at rear, XL'All saddle, very low built £30

REX Litette, 1911 model, water-cooled, two-seater, chain drive, two speeds, handle starting. This has only been used for fifty miles, and is admirably suited for a tradesman's carrier £50

MOTOSACOCHE, 2½ h.p., M.O.V., 1911 model, free engine, Whittle belt, Druid forks, adjustable pulley, as new £28

REX, 5 h.p., 1910½, de Luxe, two speeds, Bosch magneto, tyres like new, complete with P.M.C. sidecar £45

REX, 1908 model, 5 h.p., just been re-enamelled and plated, handle-bar control, a bargain.. £14

J.A.P., 1910, 4 h.p., Chater Lea frame, Bosch magneto, low built, very fast £25

ANTOINE, 5 h.p., twin, very low, footrests, long handle bar, coil and accumulator ignition £14

We have numerous other machines for disposal. Send us your requirements. Cash or exchange.

CASH OR EXCHANGE

MAUDES' MOTOR MART

136 GT. PORTLAND ST. LONDON W.

MOTOR BICYCLES FOR SALE.

1910 Royal Enfield, 2¾h.p., lightweight, just overhauled, like new; £25. — Allen Bros., sidecar specialists, Stockport.

1907 Triumph, engine and everything perfect, will climb any hill with 15st. up; £22.—Lake, 28, Swaine St., Bradford.

ROYAL Enfield, 2¾h.p., 2-speed, free engine, Dunlops, Brooks, guaranteed perfect as new; offers.—Payne, Victoria St., Morecambe.

2¼h.p. Moto-Reve, 1910, variable pulley, Whittle belt, run 4,000 miles; £22.—Charlton, 164, Wargrave, Newton-le-Willows.

FOR Sale, Wolf lightweight, 1¾h.p., magneto, new pulley and Continental tyres; £8/10.—Greaves, Wickersley House, near Rotherham.

TRIUMPH 1910¾, free engine, good condition, very little ridden, lamp, horn, new Dunlop tyre; £40.—Ryder, 104, Plank Lane, Leigh.

TRIUMPH, clutch model, 1911, excellent condition, Lucas lamp, new Rom tyre on back; £49.—Apply, Wilson, 56, Cheapside, Bradford.

1911 Free Engine Triumph, run 1,300 miles, new Dunlop inch belt, new lamp, horn, spares; £48.—H. Hanson, South View, Yeadon.

5h.p. 1911 Twin Indian, perfect, Autoclipse lamp, Cowey speedometer, etc., mileage 1,200.—Parkinson, 29, Devonshire Rd., Pendleton.

1909 Triumph, recently overhauled, good tyres, Lucas lamp and generator, Jones speedometer; £30.—Thompson, 42, Vicar Lane, Bradford.

1911 Enfield, 2¾h.p., 2-speed, overhauled by makers, new tyres, chains sprockets, all accessories; £39.—Finn, Hemsworth Collieries, Wakefield.

TRIUMPH, free engine, perfect condition, with or without sidecar; £43/10, or £40.—Apply by letter to Motorist, 33, Shrewsbury Rd., Bolton.

8h.p. Chater-Lea-Jap, No. 7 model, 1911, guaranteed perfect, and only been 704 miles; first reasonable offer.—H. Raine, Station House, Ferrybridge.

BRADBURY, 1911, little used, enamelled grey, tyres new, with Lucas lamp; can be seen on application.—Wilson, Glenholm, Manningham, Bradford.

5½h.p. Rex, twin, magneto, automatic lubrication, etc., new four months ago, splendid condition; trial; £38.—2, Andover St., Winton, Manchester.

£7.—Splendid looking 2¼h.p. L.M.C., 26in. wheels, girder forks, loop frame, French grey, nice machine, not high.—Reynolds, 32, Downing St., Manchester.

TRIUMPH, 1909-10, free engine, just overhauled and enamelled, like new, 2 Whittles, spare tube, valve; £35.—Brook, Leventhorpe, Woodlesford, near Leeds.

1911 4-cyl. T.A.C., 3 speeds, almost new, £45; 1911 3½h.p. 2-speed Bradbury, £37/10; 1910 7h.p. Rex, £31/10.—Colliers, Motories, Westgate, Halifax.

1911 New Rexes at bargain prices; exchanges; list on application; 1912 Rexes and Bradburys from stock.—Halifax Motor Exchange, Westgate, Halifax.

1912 Douglas, 2-speed, free engine, kick starter; £50; delivery February; nearest offer to above secures.—No. 9,488, *The Motor Cycle* Offices, Coventry.

LIVERPOOL Official Agents for Bradbury, Zenith, Singer, Rex, Clyno, Moto-Reve; delivery from stock.—F. C. Jones and Co., 37, Redeross St., Liverpool.

1911 Bradbury, 3½h.p., very little and carefully ridden, positively new condition, plating, enamelling unscratched, tyres unpunctured; £36.—359, Oxford Rd., Manchester.

4h.p. Chater-Lea and Sidecar, 2 speeds, gear box, chain drive, as new; £45. Early deliveries Chater-Lea No. 7 sidecars, in stock.—Gilyard, agent, 76, Barkerend Rd., Bradford.

1911 Premier, £34; 1911 Bradbury, £35; 1910 Triumph, £35; 1910 P. and M., £38; 1912 Triumphs, P. and M.'s, Bradburys, Ivy motor cycles.—T. Reed, Nettlesworth.

CARRS.—Rudge and B.S.A., free engines in stock; 1910 2-speed Humber and sidecar, £42; 3½h.p. Zenith, almost new, £43; 1911 4-cyl. T.A.C., £42.—Knowsley St., Bury.

DOUGLAS, 1911, 2-speed, new condition, had careful use, B104 saddle, spring pillar, all accessories, spare cover, tube, belts, etc.; £36.—9,476, *The Motor Cycle* Offices, Coventry.

SEE, Write, or Wire, Geo. Merrick; he's the man for Bradburys; in stock, Rudge, B.S.A., A.J.S., N.S.U., and runabouts.—Merrick's Stores, Listerhills, Bradford. Tel: 2459.

ENFIELD, £20; Douglas, £25; new 1911 Douglas, £36; new 6h.p. 1911 Matchless, 50 guineas; and other bargains for the callers at Colmore Depot, 261, Deansgate, Manchester.

DOUGLAS, 1911, fine condition, £28; 2-speed Douglas, only used once or twice, £42; new 1911 6h.p. 2-speed Bat, with P. and M. gear, £65.—Colmore Depot, 18, Renshaw St., Liverpool.

T. PARISH, agent for the mighty Bradbury and Douglas; 2-speed Humber, £27; 1911 Douglas, 2-speed, soiled only, £36; Triumph, grand order, £23; best allowance exchanges; sidecar builder.—81, Fishergate, Preston.

OFFERS.

We consider any reasonable cash offers for machines listed herein. Give us a visit. It will pay you.

WE GUARANTEE EVERY SECOND-HAND MACHINE WE SELL.

A selection from our list of good reliable second hand machines:

PREMIER, 1910 model, 3¾ h.p., twin, Dunlop tyres, Bosch magneto, very fast, and suit sidecar £32

N.S.U., 1910 model, 3½ h.p., magneto, good tyres, handle-bar control, spring forks, condition as new £28

CALTHORPE, 1911 model, 3½ h.p., Precision engine, Hutchinson tyres, not done 1,000 miles, magneto, handle-bar control £36

REX, 1911 model, 5 h.p., tourist, condition equal to new, M.O.V., spring forks, B. & B. carburetter, handle-bar control, Bosch magneto, Rey whistle, trials machine, and gold medal winner £35

REX, 3½ h.p., 1911 model, like new, cone clutch model, only used 100 miles for trials, perfect £38

V.S., 1910 model, 7-9 h.p., two speeds, Nala gear, Truffault spring forks, finished cream, Bosch magneto, very fine sidecar mount, just been thoroughly overhauled £39

SCOTT, two-stroke, two speeds, free engine, spring forks, Palmer tyres, water-cooled head, spring footboards £25

MATCHLESS, 1910 model, 8 h.p., side valves, J.A.P. engine, car tyre rear wheel, cream finish, very fast, admirable sidecar mount, special price £35

REX, 1907 model, 5 h.p., twin-cylinder, free engine, spring forks, enamel and plating as new, a bargain £16

N.S.U., 1908 model, 5½ h.p., twin, very low built, magneto, two speeds, free eogine, admirable sidecar machine £26

HUMBER, 1911 model, 3½ h.p., two speeds, free engine, handle starting, had very little and very careful usage £37

F.N., 1909 model, four-cylinder, spring forks, Bosch magneto, shaft drive, complete with rigid sidecar, fine turnout £30

REX, 1908 model, 3½ h.p., two speeds, handle starting, Bosch magneto, spring forks, fine sidecar mount £22

N.S.U., 1908 model, 3½ h.p., very low built, spring forks, magneto £20

PHOENIX, quad car, 8 h.p., Fafnir engine, two speeds, wheel steering, reverse, Bosch magneto £30

V.S., 1908 model, 5 h.p., twin, just been overhauled, Truffault forks, Bosch magneto, for spot cash £25

PEUGEOT, 7-9 h.p., very low built, Bosch magneto, pan seat, 2¼in. tyres, very powerful .. £26

ARIEL, 1910 model, 3½ h.p., free engine, M.O.V., Bosch magneto, very fine solo mount £30

REX, sidette, 1911 model, 7 h.p., two speeds, Bosch magneto, handle starting, coach-built, sidecar £52

REX, 6 h.p., **Speed King,** magneto, spring forks, very fine machine £50

MATCHLESS, 4 h.p., 1911 model, grey finish, Palmer Cord tyres, not done 50 miles £38

KERRY-ABINGDON, 3½ h.p., 1910 Clutch Model, handle-bar control, padded saddle, very good condition £32

N.S.U., 3 h.p., spring forks, studded tyres, magneto ignition, cream finish £18

HUMBER, 1909½ model, 3½ h.p., two speeds, handle starting, very fine sidecar mount .. £31

REX, 1911 model, 7 h.p., two speeds, handle starting, spring forks, Bosch magneto, very fine sidecar mount £49

MINERVA, 4½ h.p. twin, M.O.V., steel-studded rear tyre, spring forks, just been overhauled, plated and re-enamelled £21

TRIUMPH, 1909 model, magneto, spring forks, very fine solo mount £30

REX, 1908, 5 h.p., 2-speed, De Luxe, magneto, spring forks, complete with sidecar £31

T.A.C., 1911 model, 7 h.p., four-cylinder, three speeds, handle starting, worm drive, magneto £45

TRIUMPH, 1909 model, 3½ h.p., two speeds, free engine, Bosch magneto, complete with Lucas lamp, Millford sidecar £49

REX, 1910 model, 5 h.p., two speeds, magneto, spring forks, very fast and good sidecar machine £40

We have numerous other machines for disposal. Send us your requirements. Cash or exchange.

MAUDES MOTOR MART,

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(LISTS POST FREE)

SCOTT'S
HALIFAX,
UNEQUALLED
IN THE NORTH FOR
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Write us your requirements; we will do our best to meet you.

ALL MACHINES GUARANTEED AND ACTUALLY IN STOCK.

RUDGE, 1912 standard £48
RUDGE, 1912 standard £48
RUDGE, Multi-gear Model, delivered 1st March.
ROYAL ENFIELD, 1911 model, two speeds, handle starting, a beauty £38
TRIUMPH, 1910 (June), condition as new, complete with P. and H. lamp and generator, horn, all accessories £40
RUDGE, free engine, 1911, Palmer Cord covers, fine condition £45
BRADBURY, standard 1911, unscratched, elaborate condition £39
RUDGE, Racing Model, 1911, all improvements, very speedy, first-class condition £40
N.S.U., 4½ h.p., twin, 2-speed gear, Bosch magneto, very fast £24
N.S.U., 3½ h.p., 1908, magneto, h.b.c., good and sound throughout £21
HUMBER, 1909, 3½ h.p., two speeds, very powerful.
N.S.U., 3 h.p., magneto, all improvements .. £18
QUADRANT, 3½ h.p., take a sidecar, good condition £12
REX, 1911, brand new twin-cylinder, Bosch aluminium footboards, all improvements £38
REX, 5 h.p., 1909, spring forks, adjustable pulleys £26
REX DE LUXE, 1909, 5-6 h.p., 2-speed gear, variable pulley £32
REX DE LUXE, 5-6 h.p., Bosch, spring forks, two speeds, handle starting £28
ADVANCE, 6 h.p., magneto, h.b.c., twin cylinder, powerful £17
PORTLAND, Peugeot engine, 3½ h.p., 1911 model, Bosch magneto, rubber non-skids, machine little and carefully used £32
MINERVA, 8 h.p., Roc 2-speed, handle starting, torpedo tank, grey finish, very elaborate and smart, complete with sidecar £47 10
CENTAUR, P. & M., two speeds, complete with sidecar, splendid running £25
REX, 5-6 h.p., 1911, M.O. valves, two speeds, free engine, Binks' carburetter, sidecar, good tyres to all wheels, splendid order throughout £42 10
LLOYDS, 2 h.p., smartly finished £8
DE DION, Phœnix 2-speed gear, low and racy £10
REX, 2 h.p., spray carburetter £7

CASH, CREDIT, or EXCHANGE TERMS TO SUIT YOUR POCKET. WRITE US.

MISCELLANEOUS.

1911 Brown and Barlow Carburetter 25/-
Mills-Fulford Sidecar, in splendid condition £5 0
Post Horns, Lucas pattern, very loud and musical 12/6
Generators, burn five hours 5/6
New Fuller Midget Coil 7/3
Wide Mudguards, 3½in., with stays 2/3
" " 4½in. " 2/11
Long Handle-bars, dropped ends 6/-
Miller Sidecar, quick-detachable lugs £4 5
Portland Sidecar, as new £4 10
New Goggles, usually sold at 2/6 ..... 1/6
New Bosch Plugs 3/6

SCOTT'S,
Victoria Motor House,
POWELL STREET, HALIFAX.
Telephone—433 National.
Telegrams—"SCOTT, Powell Street, Halifax."

MOTOR BICYCLES FOR SALE.

B.S.A. 1911 Free Engine Model, with Millford sidecar, complete outfit, equal to new: £55, or nearest cash offer.—Sharman, Market Place, Brackley.

REX, 1910, 6h.p. twin, free engine, spring forks, Palmers, condition grand; bargain, £27/10; must sell.—Lancaster, 103, Heeley Rd., Selly Oak.

TRIUMPH, 3h.p., magneto, h.b.c., July, 1911, piston and cylinder, lamp horn, excellent condition, any trial; £20.—27, Hendon Rd., Sparkhill, Birmingham.

ENFIELD, £20; Douglas, £25; new 1911 3½h.p. Zenith, 50 guineas; new 1911 2-speed Bradbury £49.—A lot of bargains at Paskell's, 62, High St., Leicester.

ENFIELD, 2½h.p., lightweight motor cycle, 1911, in perfect condition, Dunlop tyres, complete, horn, tools, etc.; £25.—C. Bailey, dairyman, 56, Dryden St., Kettering.

MOTOR Cycle, Singer engine, magneto, spring forks, Triumph tank and handle-bars, new tyres, sound condition; £16.—Henry Harvey and Sons, 3, Ironmonger Row, Coventry.

TRIUMPH, Oct., 1907, 1911 B. and B., Bosch, good condition, recently overhauled, lamp, horn, tools, and spares; £22, or best; Garner whistle.—D. Robertson, 31, Ashover Rd., Leicester.

1909-10 Triumph, Bosch, B. and B. variable jet, Palmer cords, lamp, generator, horn and spares, condition like new, £30.—Tyrns, c/o Brown and Barlow, Ltd., Westwood Rd., Witton, Birmingham.

3½h.p. Rudge, free engine, bought September, 1911, only done 800 miles. Miller mud shields, Jones speedometer, Lucas lamp and generator, 1912 carburetter; £45.—Morgan, c/o Phœnician, Ltd., Finch Rd., Handsworth.

1911 Premier, 3½h.p., free engine, 2-speed Milleanium, Whittle, drip feed lubrication, Garner whistle, horn, tools, etc., perfect condition, only done 1,700 miles; cost £58, sell £45; buying twin.—B. Meggitt, 7-8, Station St., Mansfield.

1911 5h.p. T.T. Matchless overhead valves, not ridden 300 miles, in excellent order, £42. 1911 3½h.p. Humber, new July, 2-speed gear, free engine, splendid condition, £39; 1910 3½h.p. Triumph, very little used and in good order; £29.—8, Shakespeare St., Nottingham.

SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon and Bedford.

1912 Bradbury, free engine model, in stock; first cheque £54/10 secures.—Willmott Bros., Norwich.

1912 Rover, free engine model, £55/5; also 2 h.p. twin Centaur, £42; both in stock.—Willmott Bros., Norwich.

LAMBERT, Thetford, for early deliveries of 1912 Triumphs, Bradburys, Matchless, Humbers, Rudges, B.S.A., etc.

F.N. Lightweight, 1910, XL'All saddle, lamp, horn, spares, oil-skins; £20; owner going abroad.—Eye, 38, Green St., Cambridge.

BROWN, 2½-3h.p., Palmer and Moseley tyres, Whittle, B. and B., Hellesens, fast and genuine; £8, or near.—W. James, Waterworks, Ipswich.

3½h.p. Free Engine Humber, h.b.c., Amac, overhauled, enamelled, also forecar combination, excellent order; bargain, £10/10, offers. — Brearley, Brandon, Suffolk.

TWO New Triumphs, in crates; offers wanted for a new F.E. Rudge, F.E. Rover, Enfield, 3½o.p. Minerva frame and wheels, suit inclined engine.—Ewen, King's Lynn.

B.S.A.! B.S.A.! B.S.A.! — Early deliveries of all models of these celebrated machines; second-hand machines part payment.—A. F. Garnham and Co., sole agents, Ipswich.

1912 L.M.C. Motor Cycles; immediate delivery; catalogue and best terms.—W. E. Sneezum, 14, Fore St., Ipswich. Sole agent Ipswich and district, including Felixstowe, Walton, Woodbridge, Melton, Wickham Market, Framlingham, Needham Market, etc.

1912 3½h.p. Zenith, 1912 3½h.p. Rover F.E., 3½h.p. Bat 2-speed, 2½h.p. Motosacoche 1912, ready for delivery; 8h.p. Bat, new Aug., £48; 1911 2 h.p. Motosacoche, £26; 3 h.p. Zenith, 1911, £45; 3½h.p. F.E. Rover, £45; 3½h.p. Bradbury, 1911, N.S.U. 2-speed, £38; 1907 Triumph, £22; 5h.p. N.S.U. 2-speed and sidecar, £25.—Knaster and Cox, 29, Green St., Cambridge.

SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

BOOK Your Order early for Clynos. At present I can guarantee delivery this month.—Below.

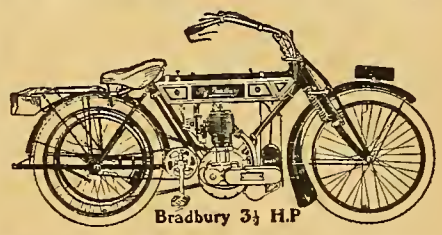
IMMEDIATE Delivery 1912 3½h.p. and 6h.p. Zenith. Triumph, Rudge, B.S.A., Singer, Humber, New Hudson.—Clarke's Garage, Port Talbot.

3½h.p. Free Engine 1910 Ariel Motor, brand new; to clear £35.—Jones, Holven, Crossbands, Llanon.

FOR Earliest Deliveries of Triumph, Humber, Enfields, Singer, Premier, apply at once, Griffiths, Cycle Emporium, Llanelly.

Collier's Motories,
Westgate, Halifax,
ENGLAND.

Early deliveries of 1912 Bradbury machines.


Bradbury 3½ H.P

Exchanges Quoted. Distance no objection.

SECOND-HAND MACHINES.
CASH, EXCHANGE, OR EASY PAYMENTS.

1911 7 h.p. T.A.C., three speeds £45 0
1911 Twin Two-speed **REX DE LUXE** £47 10
6 h.p. Twin **ZEDEL,** Bosch, B. & B., spring forks £23 10
1910 7 h.p. Twin **REX,** M.O.V. £37 10
FAFNIR, Bosch, h.b.c., Indian red, Druids £19 10
Magneto **TRIUMPH,** spring forks, very smart £25 10
Twin **REX DE LUXE** and Montgomery sidecar .. £35 0
REX, 1910, 3½ h.p., "hot stuff" £29 10
5½ h.p. Two-speed Twin **REX DE LUXE** £29 10
5 h.p. 1910 Twin **REX,** special machine £29 10
4½ h.p. Four-cylinder **F.N.,** magneto £19 19
2½ h.p. **KERRY,** runs well, spring forks £10 10
1910 3½ h.p. T.T. **REX,** very fast £27 10
TRIUMPH, 1908, very good £28 10
3 h.p. **HUMBER,** chain drive £7 10
1909 3½ h.p. **REX DE LUXE,** two speeds £32 10
1908 3½ h.p. Magneto **REX,** spring forks £22 10
1907 3½ h.p. Magneto **REX,** spring forks £19 19
3½ h.p. Tourist **REX,** brand new £29 10
1910 Twin **REX DE LUXE,** two speeds £42 10
New Twin **REX,** Cantilever seat ..... 36 Gns
Twin **REX DE LUXE** and sidecar £27 10
MOTO-REVE, magneto, Druids £19 19
MOTOSACOCHE Lightweight £14 10
3½ h.p. **MINERVA,** M.O.V. £14 10
F.N. Lightweight, magneto, spring forks £19 19
REX, 3½ h.p., spring forks £15 10
1911 3½ h.p. Tourist **REX** £32 10
1911 Twin **REX DE LUXE** £46 10
1911 Single-cylinder Two-speed **REX,** 300 miles .. £32 10

A CALL WILL REPAY YOU.

THE "POPULAR" 1911 RIGID SIDECAR, £4-19-9



Backed by 10 years' experience.
Every car guaranteed 12 months.

"Popular," Clipper or Continental tyre £4 19 9
"Superbe" type, with best tyre, apron, etc. £6 6 0
Ditto, with reversible child's seat £7 0 0
Ditto, with best coach-built body £7 12 6

Improved Quick Detachable Joints are fitted to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

Discount to Trade. Exchanges entertained.

50 Brand New Machines at nearly second-hand prices. Accessories free, and expenses paid to cash buyers. Come at once and get first choice.

MOTOR BICYCLES FOR SALE

2¼h.p. Enfield, twin, grand running order, £21; 3h.p. Ariel, in perfect running order, £13.—George Rees, Cross Hands, Llanelly.

MOTO-REVE, 2h.p., late 1909 twin, magneto, Continental front, Clincher back, running order; £18.—R. S. Lucy, Aveley House, Stourport.

TRIUMPH, 2½h.p., fine condition throughout, recently overhauled; any trial here; accept £12/10.—Mayall, 80, Clensmore, Kidderminster, Worcestershire.

TRIUMPH, 1907¼, Bosch, B. and B. carburetter, h.b.c., fitted Triumph 1911 hand.e-bars, Mabon new model free engine clutch, XL saddle, Palmer cords, new Riches, good running order and condition; £28/10.—Barnett, 9, Rainbow Hill Terrace, Worcester.

TRIUMPH, 1910, free engine, exceptionally good condition, new Palmer cord back, new Hutchinson front, £40; Triumph, 1910, free engine, good condition, £37/10; Enfield, twin, 1910, 2¼h.p., £18/10; 191? free engine B.S.A., and 2¼h.p. Enfield, in stock.—Ivor Roberts, Oxford St., Swansea.

SECTION VII.

Gloucester, Oxford, Buckingham, Berks Wilts, and Hants, and Channel Islands.

2¾h.p. Enfield, new July; £45.—McBride, Lucknam, Chippenham.

DOUGLAS, 2¾h.p., brand new tyres, just overhauled; £25.—J. C. Hunt, Headbourne Worthy House, Winchester.

P. AND M., 1911, 3½h.p., new Kempshall tyre, perfect order. — Davenport Vernon and Co., High Wycombe.

SCOTT, 1912, for immediate delivery, not unpacked. —Williams and Co., Scott agents, Portland St., Cheltenham.

SINGER, 3½h.p., 1911-12, Cowey, Palmer cords; £49/10; take Douglas part exchange.—145, Fisherton St., Salisbury.

IMMEDIATE Deliveries.—Write, Gibb, Gough and Son, Gloucester. Sole agents for Douglas, Bradbury, Premier, Rover.

N.S.U., 3½h.p., late model, perfect condition, equal new, lamp, spare belt, and tyre; £23.—Claypoole, 63, Queen Sq., Bristol.

1910 Douglas, good running order, nearly new belt, Kempshall back tyre, strong puller; £24.—Heybourn Motors, Maidenhead.

1911 (late) T.T. Roadster Triumph, unscratched, h.b.c. to magneto, knee grips, numerous spares; £43.—S., 94, High St., Oxford.

RUDGE and Bradbury Models, for prompt delivery; trial runs; exchanges entertained; send for lists.—Agent, Barnes, Colnbrook, Bucks.

1912 2-speed 3½h.p. Humber, due delivery February; buying car instead.—Cash offers to No. 9,480, *The Motor Cycle* Offices, Coventry.

3½h.p. Triumph and Sidecar, condition as new, all accessories and spares; £40, or nearest offer.—Seden, 27, Chapel St., Newport, I. of W.

F.N., 3h.p., Bosch magneto, latest F.N. spring forke, Service belt, excellent condition throughout; any examination; £14/10.—63, Norrey's Av., Oxford.

MOTOSACOCHE, 1909, 1¾h.p., magneto, spring seat-pillar, free engine attachment; price £10.—Box L5,805, *The Motor Cycle* Offices, 20, Tudor St., E.C.

4½h.p. Twin Minerva, magneto, B. and B., just overhauled, new Minerva parts fitted, lamp, horn, spares; £16/10.—Jacob, Noel Cottages, Bletchley, Bucks.

2¼h.p. Enfield, late 1910, lamp and generator, tyres good, excellent condition, spare valve, etc.; £23.—Can be seen at Midland Motor Garage, Cowley Rd., Oxford.

REX, 3½h.p., 1910, magneto, B. and B., h.b.c., new belt and tyres, spare Whittle belt, recently overhauled, excellent condition; £28. — Carse, Alderbury, Salisbury.

TORPEDO Lightweight, 2¾h.p., new August, Precision engine, perfect condition, only run 500 miles; price only £26, bargain. — Dutton, 69, Oxford St., Southampton.

N.S.U., 3½h.p., just overhauled, new magneto and B. and B. carburetter, h.b.c., footboards, complete with lamp, horn, and spares; £20.—Malcolm, R.A. Mess, North Camp, Aldershot.

2¾h.p. Douglas, late 1910, splendid condition, £25. 2¼ also 2¾h.p. Douglas, late 1911, trial machine, 2-speed gear, uncratched £35/10.—O. Bridges, Mount Hill, Kingswood Bristol.

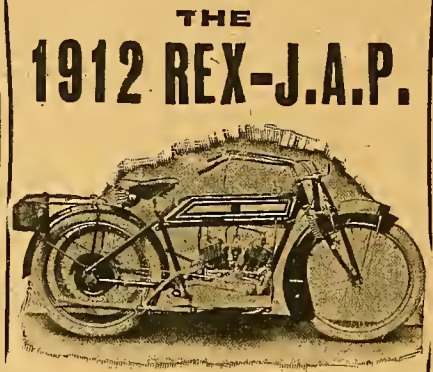
HUMBER, 1911, 3½h.p., 2-speed, free engine, run 1,500 miles, new Lyko belt, E.R.S. lamp, nearly new Continental non-skid, £38; Montgomery sidecar, £4.—Hanley, Haven, Headley, Hants.

INDIAN, 5h.p., 2-speed, free engine, in perfect condition Rom back tyre, Bowden auxiliary, Jones lamp, speedometer, horn, pedal syren, all accessories; £45.—Rivett Ford, Snakeleigh House, Loudwater, Bucks.

BAT, 8h.p., fitted with N.S.U. 2-speed gear, new Easter, 1911 cost nearly £70, back tyre new, front condition very good; accept £50, or nearest; only selling to get 1912 model; trial welcomed.—Rogers, Bank, Marlborough.

THE

1912 REX-J.A.P.



The Motor Cycle You Should Buy!

Several things enter into the success of a Motor Cycle when used for Sidecar work. One of these is the Power and Flexibility of the Engine—another is the Frame—another is the Design—another is the system of Springing—and last, but not least, the Wheels, Rims, and Tyres. Ask an expert to examine the 1912 REX-J.A.P. and he will pronounce it perfect.

Features of the REX-J.A.P. which will appeal to the discriminating Buyer are the

ENGINE—the world-famous J.A.P., with mechanically operated Side-by-Side Valves.

FRAME—Specially strengthened—constructed of double-butted tubes throughout, with brazed-on lugs for Sidecar.

SPRINGING—Efficient Spring Fork (made under "Druid" license), and Spring Cantilever Seat.

LUBRICATION—Automatic, with Auxiliary Hand Pump.

CONTROL—The Rex-Jap can be stopped and re-started on any hill, or in traffic, without taking hands off handlebar.

TYRES—650 x 65 Dunlop Grooved Voiturette Cover on back wheel, and extra heavy 26 x 2½ Studded Dunlop Non-Skid on front wheel.

We shall be pleased to send you Catalogue, describing the many exclusive features of these unique machines, upon request.

AGENTS—We have several districts still open. Write for terms.

COLONIAL AGENTS—Write for prices and Agency Terms of REX-J.A.P. special Colonial Models.

THE PREMIER MOTOR CO., Ltd.,

Aston Road,
BIRMINGHAM.

Telegrams: "Primus, Birmingham."
Telephone: Central 4310.

MOTOR BICYCLES FOR SALE.

TRIUMPHS, 1910 standard model, 1907-8 ditto, a 1912 free engine ditto, not unpacked; also 1¾h.p., lightweight, magneto, £13; and 2h.p. Quadra B. and B., all good order.—Triumph agency, 26, Sa St., Windsor.

3½h.p. late 1908 Triumph, in excellent condition, n tyre back, lamp and horn, bargain, £28; 1910 Douglas, Cowey speedometer, horn and lamp, n back tyre and belt, engine overhauled by makers, £2 —Collins, Bridge St., Andover.

IN Stock, one F.E. 3½h.p. Triumph, one F.E. 3½ Rudge, one F.E. 3½h.p Rudge, one 2¾h.p. L Premier, all four 1912 models; also one new 1911 h.p. Lincoln Elk, one second-hand 2¾h.p twin Mo Reve; what offers?—Randall, Andover.

1912 Matchless Motors; early deliveries 6h.p. clut model, 60 guineas; 1912 Hazlewood motors fr stock, 3 speeds, free engine, 47 guineas; catalogues, p ticulars free; 1911 Rudge, July 320 miles, as new, sp valves, tools, £40.—Balfours, Motor Works, Banbury

P. and M., 3½h.p., 1909, 2-speed, free engine, spl did condition, long footboard, extra back s attachment, new 2½ Kempshall heavy non-skid, spee meter with trip recorder, guinea whistle, all spares, e looks like new; £38; or without all extras, £34.— 11, West Wycombe Rd., High Wycombe.

SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Ke and Sussex.

WILTON Cycle Co., Victoria, S.W.

WILTON.—Sole S.W. agents for Clyno and Matchle early deliveries.

WILTON.—Special agents for Bradbury and Rudg deliveries from stock.

WILTON.—1911 Triumphs, as new, clutch mode with accessories, £45, £48; another, with si car, £48.

WILTON.—1911 Triumph Standard, as new, accessories and spares; £40.

WILTON.—1911 Bradbury Standard, as new; £38

WILTON.—1911 Bradbury, standard, with accessori and Chater-Lea sidecar; £43.

WILTON.—1911 Singer, clutch model, with Jo speedometer, lamp, etc., and Millford sidecar £50, as new.

WILTON.—1911 Clynos, 2 months old; £55.

WILTON.—1911 Rex T.T., 5h.p., as new; £38.

WILTON.—1910 Rex, 5h.p., 2-speed and free engi just overhauled; £35.

WILTON.—1911 F.N., 5-6h.p., 4 cyls., with acc series; £40.

WILTON.—F.N.'s, 4½h.p., 4 cyls.; £20 and £22 ea

WILTON.—1911 F.N., 2¾h.p., single-cyl., 2-speed ge with all accessories, in fine order; £36.

WILTON.—1909 Humber, 2-speed, 3½h.p., in splen condition, new tyres, accessories, etc.; £30.

WILTON.—1909 N.S.U., 2¾h.p., electric ignition;

WILTON.—1911 Humber 2h.p. lightweight, epl did order; £27/10; another, £25/10.

WILTON.—1911 Moto-Reve, 2¾h.p., brand new; £

WILTON.—Sarolea, 5h.p., Chater-Lea machine, borne 4-speed gear, Whittle belt etc., £30; w sidecar, £35.

WILTON.—3½h.p. Minerva, in excellent condition, w all accessories, electric ignition; £9.

WILTON.—2¾h.p. Kerry, overhauled; £8.

WILTON.—6h.p. tricar, water-cooled, 2-speed ge chain drive, magneto, etc.; £20.

WILTON.—Sole S.W. representatives for Clyno mote deliveries February.

WILTON.—Sole S.W. representatives for Matchl motors; deliveries January and February.

WILTON.—Special agents for Bradburys, standard a 2-speed belt models in stock.

WILTON.—Early deliveries of Clyno, Matchless, a Wilton sidecars; lists free.

WILTON — Exchanges and instalments arrang Please write for forms.

WILTON Cycle Co., 110, Wilton Rd., Victoria, L don, S.W. Tel.: 5115 Victoria.

B.S.A. 1912 2-speed Models in stock.—Rivett, Leyto stone.

B.S.A. 1912 Free Engine Models in stock.—Rive Leytonstone.

B.S.A. 1912 Fixed Engine Models in stock.—Rive Leytonstone.

MOTOR Supplies.—Up-to-date stock at Rivett's, 2 High Rd., Leytonstone.

MOTOR BICYCLES FOR SALE.

UADRANTS! Quadrants! Quadrants!

ASS'S Motor Mart, 5, Warren St., Euston Rd., W., sole agents for the famous Quadrant motor cycles; changes entertained; book at once for early delivery; alogue upon application.

RADBURY, 3½h.p., 1911, excellent condition, very little wear; £40.—Cass's, below.

OUGLAS, 2¾h.p., 1911, 2-speed and clutch, splendid condition, accessories; £39.—Cass's, below.

.N., 5-6h.p., 1911, 4 cyls., new last May; £35.—Cass's, below.

OTO-REVE, 2h.p., 1911, 36-guinea model, has had very little use; £22.—Cass's, below.

REMIER, 3½h.p., 1911, new engine, machine in perfect condition; £38.—Cass's, below.

ORPEDO, 2½h.p., brand new, Amac carburetter, Precision engine; £37.—Cass'e, be ow.

RIUMPH, 3½h.p., 2-speed and free engine, h.b.c., speedometer, accessories; £27.—Cass's, below.

.S., 7-9h.p., 1910, speed model, accessories; £35.—Cass'e, below.

ATCHLESS and Coach-built Sidecar, 6h p., 1911, 2-speed, two months old; reason for selling, ier buying car; accessories; £65.—Cass's, below.

EX, 7h.p., 1911, fitted with Chater-Lea sidecar, accessories; £55.—Cass's, below.

ASS'S Motor Mart, 5, Warren St., Euston Rd., W (opposite Warren Street Tube Station). Tel.: 3624 ysia.

RNO, 3½h.p., 1912 T.T. models in stock; £45; old machine part payment.

RNO, 3½h.p., 1912 Tourist, in stock; £45; old machine part payment; gold medal 24 hours M.C.C. l.

RNO, 2¾h.p., 1912, in stock, gold medal M.C.C. 24 hours; 39 guineas.

RNO, 2¼h.p., lightweight, in stock, splendid non-freak machine; nothing better for town use; 36 neas.

RNO.—Any of above machines on easy payment syste n.—Arno Agency, 2, The Parade, Kilburn, Maida e, N.W.

IMEDIATE Delivery Quadrants, Centaurs, Bradbury, Triump Jap, Humbers, etc.—Below.

ARLY Delivery, Triumph, Indian, Rex, Zenith, Corah, Rudge, Bat, Rover, etc.—Below.

ARGE Stock of Second-hand Machines; cash, exchanges, gradual payments. — Applebee Bros. urch Hill, Walthamstow. 'Phone: 517 Walthamstow

ROYDON.—1912 Enfields in stock: no waiting.—Call and see the agents, 86, South End, Croydon.

ROYDON.—1912 Hobarts, all models, immediate delivery.—Agents, 86, South End, Croydon.

ROYDON.—1912 Levis, 2-stroke; a trial run will convince; immediate delivery.—86, South End ydon

ROYDON.—Send for lists of second-hand machines; exchanges entertained.—The Croydon Motor Mart, South End, Croydon. Tel.: P.O. 797.

ARKERS, Kensington.—3½h.p. Triumph (1912 improvements), free engine model: £55; in stock.

ARKERS, Kensington.—3½h.p. Singer, free engine model: £55; in stock.

ARKERS, Kensington.—3½h.p. Premier, free engine model; £54/17; in stock.

ARKERS, Kensington.—3½h.p. Humber, free engine 2-speed gear: £52/10; in stock.

ARKERS, Kensington.—2h.p. Humber, lightweight, £37; in stock.

NY of above by easy payments, 5% extra.—John Barker and Co., High St., Kensington.

OVERS, 3-speed, clutch or fixed engine, in stock —Chatwin and Hartley, King St., Richmond.

RIELS, variable gear, and T.T. models: immediate delivery.—Chatwin and Hartley, King St., Richmond

EX, 5-7h.p. twin, magneto; 18 guineas.—R.N., 113 Cavendish Rd., S.W.

1h.p. Rex, h.b.c., good going order; £6/10.—G. 2 Walker, Birchington, Kent.

1h.p. Minerva Cycle, h.b.c., £8.—W. Bassett, Bone-2 mill, Hadlow Down, Uckfield, Sussex.

1h.p. Triumph, 1909, as new; £30. — Hardcastle, 2 Masons Arms, East St., Walworth, S.E.

1h.p. Kerry-Abingdon, perfect, speedometer, spares; 2 nearest £30.—8, Mayfield Place, Eastbourne.

1h.p. Brown, adjustable pulley, h.b.c., just over-2 hauled; £14.—Young, 42, Dawes Rd., Fulham.

NFIELD, 2¼h.p., 1910, beautiful condition; £27.—"Lower," 77, Boundary Rd., St. John's Wood.

1h.p. Calthorpe, 1911, T.T. model, brand new; £35. 2 bargain.—Storey's, 1, Endell St., Long Acre, W.C.

EW 1911 Clutch Triumph, in crate; £51.—9,485, *The Motor Cycle* Offices, 20, Tudor St., E.C.

911 Douglas, excellent condition, splendid hill climber, all spares; £30.—69, The Grove, Ealing

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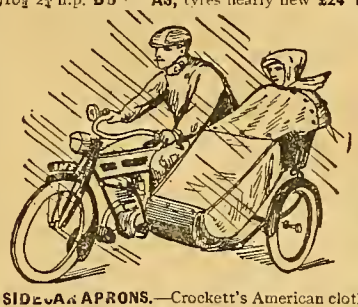
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1911 3½ h.p. F.E. TRIUMPH, and Millford sidecar, lamp, horn, etc., little used .. £49 0
1911 3½ h.p. TRIUMPH, touring model .. £39 0
1910½ 3½ h.p. F.E. TRIUMPH, grand condition, lamp and horn, etc. £39 0
1911 3½ h.p. BRADBURY, 2-speed, and sidecar, fine order £46 0
1911 4 h.p. PORTLAND, J.A.P. engine, P. and M. 2-speed gear, nearly new £40 0
1911 2½ h.p. A.J.S. Lightweight, perfect condition £29 0
1911 2¾ h.p. DOUGLAS, Model E. 2-speed, starting handle, little used £39 10
1911 5 h.p. KEX Sidette, fine combination, great bargain £50 0
1911 3½ h.p. P. & M., 2-speed, hardly used £45 0
1910½ 3½ h.p. BRADBURY, very fast, splendid condition £32 10
1910½ 2¾ h.p. DOUGLAS, tyres nearly new £24 15



SIDECAR APRONS.—Crockett's American cloth, 7/6. Best duck waterproof, 10/6.

STORM APRONS.—Completely protect passenger. Suitable for all weathers. Can be detached and carried under seat when not in use. Price 25/-. Second quality, 18/-.

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SIDECAR LAMPS.—Self-contained acetylene. Very neat, strong, and efficient. Price 8/6.

WATERPROOF CLOTHING.—Taylor's Mackintosh Suits for all weathers. Double-breasted, double texture, wind cuffs, complete with trouser overalls to cover waist (no seat) Price 33/9.

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MOTOR BICYCLES FOR SALE.

ZENITH, 1912 models; immediate delivery; no waiting; trade supplied.—Rey, 5, Heath St., Hampstead.

PREMIER, 3½h.p., 1910, perfect condition, little used; £25.—Saunderson, 20, Clissold Rd., Clissold Park, N.

ZENITHS, Zeniths, Zeniths, 1912 models in stock; exchanges arranged.—1, Endell St., Long Acre, W.C.

RUDGE, free engine, new August; cost £60, 48 guineas; offers. — Collbran, Coombe, Wimbledon Park.

F.N., late 1909, 5-6h.p., 4-cyl., magneto, spring forks, nice order; £22/10.—68, Elmsleigh Rd., Wandsworth.

3½h.p. Triumph, 1909, condition splendid, tyres good, spare belt; £27.—5, Circus Rd., St. John's Wood.

3½h.p. Kerry-Abingdon, practically new, valuable spares; £28, offers.—91, Melbourne Rd., Eastbourne.

2¾h.p., F.N. engine, spring forks, magneto, good running order; £11.—Chaplin, Southern Hospital, Dartford.

New Hudsons, Triumphs, Bradburys; order now for early deliveries.—Godfrees, 124, Romford Rd., Stratford.

3½h.p. Triumph, new condition, fast and reliable, original tyres, spares, lamp, horn, etc.: £38.—Thorn, Marden, Kent.

4h.p. Chater-Lea, new tyres, good condition, running order; £15.—4, Lolesworth Buildings, Commercial St., London, E.

FOR Sale, 3 h.p. Centaur motor cycle, in perfect condition: genuine bargain, £8.—C. Hogger, Runcella, Harlow, Essex.

3h.p. Rex, magneto, running order; wants slight repair; £8/10, near offer.—Jones, 55, Eastbury Grove, Chiswick.

£22/10.—Twin Kerry, 5h.p., Bosch magneto, new Clincher non-skids; bargain.—Hart, 206, London Rd., Twickenham.

1¾h.p. Magneto Lightweight, good tyres, Brown and Barlow carburetter; sacrifice, £3/10.—H. Body, Biddenden, Kent.

2¾h.p. F.N. Lightweight, £7/10; 2¼h.p. Quadrant, £6/10; must sell; exchange. — 11, Bulstrode Parade, Hounslow.

2½h.p. Pullman, low, powerful lightweight, torpedo tank, sound condition; bargain, £7/15.—35, St. Stephen's Rd., Bow.

TRIUMPH, 1910¾, not ridden 1,000, as new, overhauled Triumphs, complete, perfect todrer; £37.—Dighy, Mersea, Essex

MOTOR Cycle, 3h.p., Automotor engine, 28in.×2in. wheels, tyres fair, running order.—Oliver, 59, Victoria St., Maidstone.

N.S.U., 3h.p., magneto, free engine, tyres good condition; bargain, £19/10.—Garaged at 73, Church St., Camberwell Green.

WANDSWORTH. — Zenith-Gradua, latest 1911, 3½-4h.p. J.A.P., m.o.v., magneto, like new; sacrifice, 38gns.—Below.

WANDSWORTH.—F.N., latest 1911 model, 6h.p., magneto, drip feed, like new, guaranteed; £36.—Below.

WANDSWORTH.—Humber, latest 1911, 3½h.p., m.o.v., magneto, 2 speeds, Druids, only soiled; £38/10.—Below.

WANDSWORTH.—Brand new Chater-Lea, 8h.p. J.A.P., m.o.v., magneto, 650×65 Dunlops; great bargain, £45.—Below.

WANDSWORTH.—Rex de Luxe, late 1909, 5-6h.p. twin, magneto, spring forks, h.b.c., perfect; £22/10.—Below.

WANDSWORTH.—V.S., 5-6h.p. twin, magneto, Truffault forks, guaranteed as new, faultless, extra; £29/15.—Below.

WANDSWORTH.—Roc, 5-6h.p. twin Peugeot engine, magneto, 2 speeds, as new; 30gns.—Below.

WANDSWORTH. — F.N., 4-cyl., magneto, spring forks, fine tyres; great bargain, £19/19.—Below.

WANDSWORTH.—Roc, 4h.p., m.o.v., magneto, 2 speeds, h.b.c., adjustable pulley, nice order; £25.—Below.

WANDSWORTH.—Minerva, 3½h.p., m.o.v.; cheap, £8/15; exchanges. — Wandsworth Motor Exchange, Ebner St., Wandsworth Station.

F.N., 4½h.p., 4-cyl. magneto, all in perfect running order; bargain, £12/10. — Lennox Holman, 27, Clements Lane, London.

1909 Triumph, splendid condition, Lucas headlight, Palmer cords; £30, or exchange T.T. Triumph.—106, Church St., Chelsea.

N.S.U., 2¾h.p., Chater No. 9, magneto, h.b.c., in new condition; bargain, £16/10. — Westleigh Motor Works, Ashford, Middlesex.

KERRY-ABINGDON, 3½h.p., late 1910 Whittle, Roma back wire, adjustable pulley, condition perfect, like new; £26/10, no offers.—61, Grand Parade, Harringay, N.

MOTOR BICYCLES FOR SALE.

4½h.p. Twin Minerva, m.o.i.v., Chater, h.b.c., Roms, Whittle, good order; sell, £15. — Garrett, 92, Isledon Rd., Finsbury Park.

BRADBURY, 1911, fitted with Lucas guinea horn and Whittle belt; £33; no offers.—Moss, 1, St. George's Mews, Primrose Hill.

6h.p Lurquin, 1910. Chater-Lea frame, new condition, accumulator ignition; nearest £19. — 71, Pulteney Rd., South Woodford.

3h.p. Kerry, perfect condition, new tyres and belt; £12, or offers; appointment.—Arnold, 95, Upper Milton Rd., Gillingham, Kent.

NORTON, 1912, 5h.p. twin, Roc 2 speeds and clutch, now ready for delivery.—Moto-Reve Co., Ltd., 183, The Vale, Acton, London, W.

BROWN, 3½h.p., 1908, just been thoroughly overhauled in our works; £11, a bargain. — Soans, Dunn and Jones, Bromley, Kent.

1911 Clutch Triumph, picked machine, under 2,000 miles; cost £55, lowest £46/10. — Baker, The Nook, Woodfield Rd., Leigh-on-Sea.

TRIUMPH, 3½h.p., B. and B., Bosch, new cylinder and piston July, excellent condition; £20.—Burchell, Palmerston Rd., Buckhurst Hill.

DOUGLAS. 1911, 2 speeds, free engine, handle starting, footboards, nearly new, run under 300 miles; £36.—T. Ford, Haileyhury, Hertford.

MOTOSACOCHE, 1910½, magneto, Druids, Whittle, horn, headlight, footrests, accessories; perfect. £20.—Parsons, 28, Abingdon St., S.W.

HUMBER, 3½h.p., and sidecar, 2-speed, Bosch, h.b.c., new tyres and belt, excellent order; £30.—Payne, 160, Manor Park Rd., Harlesden.

ROC, 4h.p., and sidecar, free engine, Bosch magneto, B. and B. carburetter, tyres in good condition; £24.—63, High St., Walthamstow, Essex.

3½h.p. Peugeot. T.T. model, absolutely new; purchaser cannot take delivery; £48 machine, take £42.—Wells, 15, Elfreda Parade, Woodford Green.

4½h.p. Twin, Mabon clutch, low position, needs little attention; £8/10, or exchange good sidecar.—Redpath, 56, Meyrick Crescent, Colchester.

MOTOSACOCHE, 1¼h.p., accumulator ignition, in good running order; bargain, £8/10.—Apply, Motosacoche, Ltd., 65, Holborn Viaduct, London.

STREATHAM.—4h.p Roc and sidecar, fitted with Roc 2-speed gear and free engine, Bosch magneto, in splendid order and condition; £29, worth £35.

STREATHAM.—3½h.p. N.S.U., on Chater-Lea frame, magneto, wants a belt, in good order; only £12/10.

STREATHAM.—2¾h.p. Minerva, magneto (Bosch), low position, long handle-bars, spring forks, B. and B. carburetter; £15, or near offer.

STREATHAM.—3½h.p. Ariel, 1911 model; cost £52/10; fitted with Palmer cord tyres, butted tubes, Simms magneto, Druid spring forks, variable gear, and free engine, only run 3,000 miles; £33/10, or near offer.

ARTHUR MYLAM and Co., 42, High Rd., Streatham, S.W., the motor cycle depot of Streatham.

F.N., latest 1911, 4-cyl., 5-6h.p., shaft driven, very silent, nearly new, tools, accessories; £30.—48, Plough Lane, near Haysden Rd., Wimbledon.

1912 3½h.p. L.M.C., new, unridden, free engine, part exchange good combination, or sell £45.—Box 9,483, *The Motor Cycle* Offices, Coventry.

B.S.A. Fixed and Free Engines in stock, Triumph early delivery; liberal exchanges.—Call and inspect same at Chivers, 55, Wilton Rd., Victoria, S.W.

BRADBURY, late 1911, had little use, P. and H. lamp, spares, tubes unpunctured; £37, or near offer.—Masonic Arms, Bounces Rd., Edmonton.

EAGLES.—N.S.U., 2¾h.p., single-cyl., new last Oct., only ridden 200 miles, Bosch magneto, latest spring frame, 2 speeds, and free engine; £35, as new.

EAGLES.—Motosacoche lightweight, Bosch magneto, Druid forks, free engine, Whittle belt, Palmer tyres; £18/10.

EAGLES.—N.S.U., 3h.p., single-cyl., new 1910 magneto, dropped frame, new condition; £18.

EAGLES.—F.N., 4-cyl., 5-6h.p., 1911 model, as new, latest improvements, automatic carburetter, drip lubrication; £38; exchange lower power.

EAGLES.—Triumph, 1910, free engine model, had little use, equal to new; £39/10.

EAGLES.—N.S.U., 3½h.p. model de luxe, 1910, Bosch magneto, 2 speeds, free engine, only run 1,800 miles, speedometer, etc.; £34/10.

EAGLES.—Douglas twin, 2¾h.p., late 1910, Rom tyres, Brooks padded saddle, fine condition; £25.

EAGLES.—Motosacoche lightweight, Hellesen ignition, Whittle belt, fine condition; bargain, £9/15.

EAGLES and Co., High St., Acton.—N.S.U. West London district agency. Early delivery of 1912 models; liberal allowances for machines in part pay ment. Tel.: 556 Chiswick.

TWIN Rex de Luxe, 1910-11, B. and B., Bosch, engine overhauled, as new, guaranteed; sell, or exchange 1911 Douglas and cash.—72, South Ealing Rd. W.

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MOTOR BICYCLES FOR SALE.

CHATER-LEA, 3½h.p., fast, reliable, all h.b.c., good condition; trial in sidecar; £13; F.E. twin wanted —4, Torrington Terrace, Green Lane, Seven Kings.

CLEMENT-GARRARD Lightweight, 2-speed, ignition, h.b.c., new Clinchers, studded back, good order; £9.—Woodlands, Addiscombe Grove, Croydon.

1909 Triumph, overhauled September last, complete tools, many spares, luggage bags and belt carrier £25.—Apply, Roope, 6, Kew Gardens Rd., Kew, Surrey.

3h.p. Hobart, low position, 2 accumulators and tools tyres perfect; bargain, £8/10.—Garaged, Oglande Works, 1, Choumert Rd., Peckham. 'Phone: 744 New Cross.

2¼h.p. T.T. Pattern Lightweight, new Michelins and belt, Amac, torpedo, accumulator, fast, low, h.b.c. perfect condition; £12.—Barnard, 113, High Rd., Wil lesden.

TRIUMPH, 1909, first-rate order, lamp, generator horn, several extras, spare valve complete, 2 pistons rings, plug, etc., tools; £29 lowest.—Crooks, Camberley Surrey.

IF You Want Bargains in second-hand motor cycles you can get them at Wauchope's.—Wauchope's 9, Shoe Lane, Fleet St., London, E.C., just off Ludgate Circus.

EDMUNDS and Wadden, Weybridge.—Immediate delivery all best makes of motor cycles; cash, exchange, or easy terms. The house for genuine bargains Tel.: 343.

1912 Bradbury, free engine, not been used; owner paid deposit, and must take delivery; will accept first best cash offer.—Bloomfield, Bloomfield Cottages Walton-on-Naze.

DOUGLAS, 1911, 2-speed, and clutch, Xl'all saddle handle-bar magneto control, horn, spares, splendid order, comfortable and economical; £37 cash.—Woolley 37, Lewes Rd., Brighton.

BRADBURY 1912 models, Douglas 1912 models Triumph 1912 models, Premier 1912 models; deliveries now, from stock; offers, exchanges entertained —Walkers, Motor Depot, Harwich.

WALKER'S Bargains.—1911 2-speed Douglas, as new £35· 1911 twin Moto-Reve, as new, £22; 1909 twin Moto-Reve, £15; 1910 twin Rex, £22; others from £7; all guaranteed bargains; offers, exchanges entertained.—Walker's, Motor Depot, Harwich.

CHATER-LEA-SIMMS, 3½h.p., m.o.i.v., magneto h.b.c., rear sprung, new Dunlops, lamp, and spares, including motor suit; bargain, £16.—J.B., 43 Lanadowne Rd., Dalston, N.E.

1¾h.p. Motosacoche, Whittle belt, free engine, adjustable pulley, battery ignition, thoroughly overhauled makers October; £12/10, or near offer.—Blundy 26, Philip Rd., Peckham Rye, S.E.

TRIUMPH, 1909, in splendid condition, recently overhauled, new Dunlop rear, spare tubes, lamp horn, spares, a really good machine; £27, a bargain —Barker, 24a, Lidfield Rd., London, N.

1910 Triumph, perfect running condition, many spares, property of naval officer, not run 3,000 miles, new last March; £33.—Address, Box L5,771, *The Motor Cycle* Offices, 20, Tudor St., E.C.

1912 3½h.p. Free Engine Singer, 3½h.p. Zenith, 3½h.p. free engine Rover, sole agents for Matchless Triumph, Swifts, Enfields, B.S.A., Alldays, and Ariels —Walbro' Engineering Co., Saffron Walden.

MINERVA, 2¾h.p., in splendid condition, magneto 1910 Amac, spring forks, only requires seeing £22, or near offer; can be seen any evening after 7 o'clock.—72, Spruce Hills Rd., Walthamstow.

8h.p. Matchless, late 1911, V.S., 2-speed gear, exhaust whistle, Cowey speedometer, P.R.S. lamp, horn 10-guinea rigid sidecar, good tyres all round, enamelled black; £65.—Sterling's, 2a, Sidney Rd., Stockwell.

TRIUMPH, late 1909, in excellent condition, all accessories, with rigid sidecar; £52 for quick sale —Sterling's, 2a, Sidney Rd., Stockwell.

3½h.p. Humber, 2-speed, late 1909 model, lamp horn, tools, accessories complete, including spare tube, in perfect condition; £29/10. — Woolger 123, Nightingale Lane, Wandsworth Common.

PREMIER, 1911, 3½h.p., done 2,400 miles, speedometer, head lamp, 2 new Dunlops, perfect condition.—Can be seen at 2, Milner St., Chelsea, or within 25 miles by appointment. Price 35 guineas.

BRAND New 3h.p. J.A.P., twin, mechanical valves 1912 engine, complete with Bosch magneto, guaranteed as received from makers; £21, no offers; owner bought car.—John, 39, Bloomsbury Sq., London, W.C.

3½h.p. Minerva, free engine, 8-40 m.p.h., 85 m.p.g. 1911 B. and B., spring forks, thoroughly overhauled by makers, and renewals include covers, tubes belt, piston, tappets, bushes, cams, repairs clutch; £16 offers.—Wilson, 46, Grove Hill Rd., Camberwell, London

SYDENHAM.—Splendid little Minerva, 2¾h.p., new copper tank, Bosch 1911, B. and B., new Whittle tyres excellent, ready for any trial; 16 guineas. Agent Bradbury and Rudge; guaranteed deliveries now.—Sydenham Autocar Co.

KKK'NUTS, Kk'nuts, K'nuts. — Special free engine Rudge, August, 1911, will do 60, back rest, lamp horn, watch, etc.; buying T.T. Rudge for track work —another fast machine; real 'ot stuff; £45.—30, Fulham Rd. 830 Kensington.

MOTOR BICYCLES FOR SALE.

h.p. Antoine, m.o.v., Chater-Lea fittings, low frame, 26×2¼ Palmer and Continental, ⅛ belt, 20 amp cumulator, very powerful and fast, splendid condi- n, all accessories, £12/10; with wicker sidecar, 5/10; bargain; trial.—45, Charles St., E.

h.p. Twin, Chater-Lea frame, spring forks, copper torpedo tanks, exceptionally powerful machine, n.t 200 miles, perfect running condition, also new spare er and 2 batt eaded tubes; sacrifice; £25.—Box 791, *The Motor Cycle* Offices, 20, Tudor St., E.C.

.A.P., 4h.p., late 1910, Chater-Lea frame, and side- car, accessories and spares, reliable and no trouble, rgain at £26, cost over £60; am going in for mot r , and would like to near of a second-hand modern eater for about £100.—L. Best, 778, Fulham Rd., W.

HERE'S the Bargain of 1912.—3½h.p. T.T. L.M.C., 1911, very fast, in perfect condition, specially ked engine, 4-guinea Bleriot headlamp and generator, est C.A.P. carburetter, all tools, valve, new cover; rifice, £34.—9,495, *The Motor Cycle* Offices, Cov- try.

1911 2-speed Kerry-Abingdon, like new, £37; 1910 ditto, in perfect order, £31; 1911 Bradbury ndard, splendid machine, £55; 1910 Standard iumph, £34; 1910 clutch Triumph, a real good e, £40; 1909 clutch Triumph, just overhauled, £33; 10 Moto-Reve, £21. — Batchelor, Clarence St., ngston.

TOTTENHAM. — 1912 models, definite deliveries; Bradburys, 2-speed, T.T. and F.E.; Humbers, htweight twin, 3 speeds, 3½h.p. 2-speed 3½h.p. standard iumphs. February: early deliveries Matchless; Bats; d A.C. Sociables delivery March; Clyncs in stock; cash exchange.

TOTTENHAM.—1911 models; shop-soiled Triumph, standard model; 1911 Rudge-Whitworth, F.E.; 11 Bradbury, 2-speed, F.E.; 1911 Bradbury, F.E.; 11 Bradbury, standard model: what offers?

TOTTENHAM.—Motosacoche, 1910, just overhauled by makers thoroughly; £24.

TOTTENHAM.—Fafnir, 4½h.p., Simplex, new engine and magneto, Whittle belt; £25.

TOTTENHAM.—Twin Sarolea, 5h.p., Bosch magneto, re-bored, re-bushed, and new pistons fitted; £20.

TOTTENHAM.—Twin N.S.U., Whittle, B. magneto, low built, spring forks, Chater-Lea sidecar; £27

TOTTENHAM.—Roc, 1910, 4h.p., 2-speed, and free engine, Whittle belt, spring forks; £36.

TOTTENHAM.—Humber, 3½h.p., 1910, 2-speed, F.E.; £35.

TOTTENHAM.—1911 Humber, 2-speed, F.E.; £38; nearly new.—Stamford Hill Motor Co., 128, High l., Tottenham 'Phone: 1982 Tottenham.

PREMIER Motor Cycles.—A few 1911 Premiers, used for demonstration, to clear, bargains; guaranteed: ll, or send for particulars, 20, Holborn Viaduct. Pre- ier 1912 models, 2¾h.p. lightweight, £36; immediate livery; trials arranged; Mille-Fulford cars, F.R.S. and cas lamps, in stock, also Turner sidecar, cheap.—Pre- ier Cycle Co., Ltd., 20, Holborn Viaduct.

MINERVA, 3h.p., painted French grey, very low hnild torpedo tank, B. and B., 1911 h.b.c. carburetter, w Stanley belt and piston rings, brand new back ver, front one unpunctured, good accumulator and coil, d spare dry battery, Lucas lamp, guaranteed in splen- d running order; a bargain, £14; owner selling through -health.—B.V., P.O., Maypole, Bexley, Kent.

M.C.H.—1911 3½h.p. T.T. Rudge, as new; £38. M.C.H.—1911 2¾h.p. 2-speed Douglas, model E.; 9. M.C.H.—1911 5h.p. T.T. Bat, very fast; £42 .C.H.—1911 3½h.p. standard Triumph, Clinchers, bad ttle use; £38. M.C.H.—1910 3½h.p. Triumph, nice ndition; £34. M.C.H.—1910 2¾h.p. Douglas, p ating id enamel as new; £26.—The Motor Cycle House, 69 eather Lane, Holborn, London, E.C. Tel.: 6432 olborn.

1912 New Hudson, Premier, Enfield, Bradbury Rover, Humber, and Triumph motor cycles for rly delivery; Matchless in 6 weeks from order; cash easy terms; exchanges for any machine arranged. est value allowed; Chater-Lea Duo cars built to order, peed gear conversions, overhauling, and repairing carried ut; all work guaranteed; moderate charges; estimates adly given; 10 years' motor cycle experience.—Wallace fotor Cycle Co., 36, Clarence St., Kingston-on-Thames

SECTION IX.

Somerset, Devon, Dorset, and Cornwall.

1912 Scott; delivery 1st March; standard model; £65.—Barton, Shaftesbury.

1912 Premier, 2-speed model, 3½h.p. single; £58; in stock, crated.—Barton, Shaftesbury.

DOUGLAS, 1912, all models; any date delivery given, list post free.—Moffat, Yeovil.

4h.p. Twin, magneto, not done 3,000 miles; £19; exchange 7-9 accumulator.—Lopp, Trenault, Egloskerry.

DOUGLAS, 1910, little used, splendid condition, spare belt, tools, accessories; £25.—Lewin, 21, High St., Barnstaple.

BRADBURY, 1912 model, delivery now; £48.—Sole agency for Plymouth district, Devonshire's, Torpoint, Cornwall. Several second-hand machines.

FOR BARGAINS

YOU cannot do better than try

NYE'S

"The Nicest Firm in London"

(Vide a client's letter).

January is proving itself a very damp and dismal month, but such weather has its compensations. Many folks would rather stay at home than come out. In consequence, there are many more BARGAINS to be picked up NOW than when the sun shines. YOU should call, if possible, and see one of our representatives, choose what you want, and we will listen to any reasonable offer or part exchange YOU have to suggest.

If any of the following goods are of use to YOU, call or write AT ONCE.

	Sale Price
New Millenium 2-speed and Free Engine, Hub, Gear, and Wheel, 26 × 2¼in. ..	**£10 10**
Shop-soiled 4-note Testaphone Horn, large size, cost £3	**26/-**
1911 Mills & Fulford Sidecar, cane body, latest canoe shape, with side door, nearly new; cost £6	**45/-**
1912 Sidecar Body, wicker (new); cost £2	**26/-**
P. & M. Gear, 2 speeds, good condition; cost £9	**£5 5**
1 F.R.S. Lamp and Bracket; cost 35/- ..	**6/-**
1 Head Light, Lucas pattern, motor cycle size; cost 30/-	**9/-**
1 Stewart Speedometer, run 1,000 miles only; cost £3 3s.	**35/-**
1 1912 Gowey, nearly new; cost £4 4s. ..	**£3 10**
1 Antoine Pattern Engine, running order, to clear	**35/-**
1 M.M.C., 3½ h.p., wants contact breaker	**28/-**
1 4 h.p. 1911 8S × 8S J.A.P., M.O.V., as new; cost £13 10s.	**£11**
1 Pair Duocar Radiators	**10/6**
1 Pair 28 × 2¼ Wheels	**3 6**
1 Pair of nearly new Wood Milne Tyres, 26 × 2¼in. ..... each	**30/-**
1 20-amp. 4-volt Accumulator (new), guaranteed; cost 10/6	**8/6**
1 60-amp. 4-volt Accumulator (new), guaranteed; cost 60/-	**28/6**

AND MANY OTHER BARGAINS.

SEND FOR TO-DAY'S LIST.

NYE'S LIBERAL EXCHANGES.—Your old machine and cash for a new 1912 Model. Early deliveries.

NYE'S can give early delivery of—

RUDGES (from stock), **PREMIERS** (stock), **ZENITHS** (stock), **DOUGLAS 2-SPEED** (stock), **MOTO-REVE** (stock), **F.N. 4-cyl.** (stock), **MATCHLESS** (six weeks' time), **CLYNO** (May), **MORGAN Two-seater** (March), **BRADBURY** (stock), **LINCOLN ELK** (stock), **S.I.A.M.T.** (stock), **B.S.A.** (March), **etc., etc.**

Place your order NOW. Nye's Exchange Form free by return of post.

SPECIAL LONDON AGENTS for the PEDLEY Tyre and Belting. The finest tyre on the market. **Price** (26 × 2¼) **48/-** each. Belting cheapest and best in the world. ⅜in. **1/9** per foot, ½in. **1/7**, ⅝in. **2/3**. Trade supplied. Lists by return post.

NYE'S are buyers of good second-hand motor cycles and accessories. **Prices must be seen** for cash only.

NYE'S offer the following half-dozen motor cycles at bargain prices. NYE'S Second-hand List on application.

1911 **ZENITH,** 4 h.p. model, nearly new condition **£42**

(This machine is a real bargain; please inspect.)

1911 3½ h.p. 3-speed **NEW HUDSON,** cash only **£49**

1900 5-6 h.p. 2-speed **V.S.,** spring forks, Bosch magneto, excellent running order only **£30**

1910 **TRIUMPH,** in most excellent condition only **£33**

1909 **TRIUMPH,** in most excellent condition only **£29**

1907 **TRIUMPH,** in good running order **£20**

Call and see the first English motor cycle invented. Now on view at NYE'S. Of great interest to all motor cyclists. About fifteen years old.

Only address—

NYE'S NEW SHOWROOMS,
16, Hampstead Road,
Tottenham Court Road, LONDON.
(Near Maples.)

Trams and 'buses pass the doors. Tube to Warren Street Station.

NOTE.—*Telephone temporarily disconnected owing to change of address.*

MOTOR BICYCLES FOR SALE.

DAN GUY, Weymouth.—1912 free engine clutch model Triumph, £55. 1912 Bradbury, 2-speed gear, £55; 1912 4h.p. Zenith-Gradua, £55/13; all in stock.

DAN GUY, Weymouth.—Indian, free, clutch model, 1911, 4h.p., absolutely as new, unscratched, and not ridden 500 miles, guaranteed; £42.

DAN GUY, Weymouth.—Enfield, 2-speed gear model, chain drive, unscratched, and guaranteed not ridden 50 miles; £42.

DAN GUY, Weymouth.—Douglas, 1910, Roc 2-speed gear, splendid order; open to any examination or trial; speedometer, lamp, and accessories; £32.

DAN GUY, Weymouth.—Douglas, 1911, model D, very little used and in perfect condition, lamp and spares; £32.

DAN GUY, Weymouth.—Triumph, 1910, free, clutch model, all spares, lamp, and engine overhauled and guaranteed; £35.

DAN GUY, Weymouth.—Triumph, 1910 model, Mabon clutch, Jones speedometer, lamp, and all accessories; £37/10.

DAN GUY, Weymouth.—Triumph, 1909, roadster, engine recently overhauled by makers; open to expert examination; £30.

DAN GUY, Weymouth.—Rudge-Whitworth, 1911, free engine model, machine had very little use, and is in guaranteed order, Lucas headlight and spares; £42.

DAN GUY, Weymouth.—Matchless, 1911 model, 8h.p. J.A.P., 2-speed gear, free engine, guaranteed; £55.

DAN GUY, Weymouth.—Motosacoche, accumulator ignition, engine thoroughly overhauled; £10, or offers.

SECTION X.

Scotland.

1912 T.T. Triumph Roadster, for immediate delivery. —Christie Brotners, agents and repairers, St. Andrew's.

ABERDEEN and District Agent for Levis lightweight, Matchless, Scott, and A.J.S., Cumming, 165, Holburn Street.

ZENITHS, just delivered, 3½h.p. model, and 6h.p. twin model: first cheque secures.—Rossleigh, 250, Buchanan St., Glasgow.

MATCHLESS, just delivered, 6h.p. twin, sidecar model, 2-speed, twin belt, for immediate delivery.—Rossleigh, 250, Buchahan St., Glasgow.

DOUGLAS.—Three late 1910 models, excellent condition, lamps, horns, spare tubes, etc.; £26, £27/10, £28.—Rossleigh's, 250, Buchanan St., Glasgow.

1911 Free Engine Premier, done 500, quite new, and sidecar; cost £60, best offer over 43 guineas.—McIntyre, tailor, Kirkcaldy.

1911 Standard Roadster Triumph, perfect condition, Clinchers, all accessories; trials arranged; offers. —McLaren, The Laurels, Kirkcaldy.

MINERVA, twin-cyl., 4½h.p., with or without sidecor, in good order; £25/10, or near offer; seen and tried any time.—Pollock, 49, Deanhaugh St., Edinburgh.

MOTO-REVE, 2¾h.p., magneto, spring forks, running order, good condition; £14; genuine; deposit, approval.—William Paterson, 30, Market St., Montrose.

INDIAN, green, 5h.p. engine, overhauled at works last autumn, new pistons, connecting rods, and explosion head fitted, perfect condition; £30 nett cash; no offers.—Archibald, Kingston Bakery, Glasgow.

DON'T Book Orders for long date delivery. I undertake to deliver any British made motor cycle in 10 days. Big prices allowed in exchange. 30 second-hand machines in stock, also sidecars; Rex and Singer from stock.—Farrow, 32, Cowcaddens St., Glasgow.

IF You Want to Buy or want to sell a motor bicycle, tricar, sidecar, or anything in connection with the motor trade, you should at once call at Dickie's, one of the largest motor exchange places in Scotland.—Dickie's Garage, 68, Bothwell Circus, Glasgow.

ALEXANDER'S Motor Exchange, 272-274, Great Western Rd., Glasgow, agents for Indian, B.S.A., Bat, Rex, Rex-Jap, Trump, Royal Enfield, Williamson, Rolfe, S.I.A.M.T., Levis 2-stroke, Norton, Lincoln Elk, Canoelet sidecar: Scotland's largest motor cycle dealers; lists on application.

ALEXANDER'S Motor Exchange, 113 and 115, Lothian Rd., Edinburgh.—Agents for Indian, Douglas, B.S.A., Zenith, Rex, Trump, Rex-Jap, P. and M., Royal Enfield, Norton, Bradbury, Williamson, S.I.A.M.T., Levis 2-stroke, Rolfe, Lincoln Elk; liberal exchange offers; over 100 motor cycles in stock; Scotland's motor cycle experts and largest dealers; send for lists.

EDINBURGH.—Scotland's motor cycle experts and largest sellers. We are now booking orders for 1912 models; Indian, Douglas, Zenith, B.S.A., Premier, Rex, Rex-Jap, P. and M., Lincoln Elk, N.S.U., Moto-Reve, Norton, James, Roc, Enfield, Trump, Bradbury, Kerry, Williamson; liberal exchange offers and fair treatment.—Alexander's Motor Exchange, Lothian Rd., Edinburgh.

CORDINGLEY, Haslingden.

"The best man in the trade for motor cycle deals." Immediate delivery of all the following from stock. If sold will guarantee a date for delivery. Think what this means to you. No waiting. No worry or disappointment. "THE MACHINE YOU WANT AT THE TIME YOU WANT IT." If you have a good machine that you want to exchange, please do not forget that I will send you a price that I can allow, and will allow, if machine found as described. Hurry along. Remember, first come first served. Satisfaction guaranteed or money returned in full.

1912 Models in stock. Can be packed and sent to any address at a moment's notice. Crates not charged for.

	List Price
CLYNO, 5-6 h.p., 2-speed	£68 5
CLYNO, as above, with Clyno sidecar	£85 5
ENFIELD, 6 h.p., 2-speed, with sidecar	£84 0
ENFIELD, 2¾ h.p., handle starting, two speeds, free engine, footboards	£52 10
BRADBURY, 3½ h.p., 2-speed model	£55 0
BRADBURY, 3½ h.p., free engine model	£54 10
BRADBURY, 3½ h.p., standard	£48 0
RUDGE, 3½ h.p., free engine model	£55 0
RUDGE, 3½ h.p., specially tuned, T.T.	£48 15
NEW HUDSON, 2¼ h.p., three speeds, Model 8B With Can ele. sidecar fitted, extra	£59 17 £12 12
NEW HUDSON, 3½-4 h.p., Model 2B	£63 0
NEW HUDSON, 2¾ h.p., 3-speed, Model 4B	£49 7
SINGER, 4 h.p., bracket gear model, 2-speed, clutch, fitted with Millford Radial Castor sidecar, complete	£82 10
SINGER, 3½ h.p., 3-speed gear model	£58 15
SINGER, 3½ h.p., free engine model	£55 0
SINGER, 2½ h.p., 3-speed model	£49 0
PREMIER, 3½ h.p., clutch model	£54 17
PREMIER, 3¾ h.p., twin, sidecar machine, two speeds, free engine	£63 0
PREMIER, 2½ h.p., lightweight	£36 0
PREMIER, 3½ h.p., 3-speed gear	£58 0
ROVER, 3½ h.p., 3-speed gear model, specially built for sidecar work	£60 15
ROVER, 3½ h.p., free engine model	£55 6
B.S.A., 3½ h.p., standard model	£50 0
B.S.A., 3½ h.p., free engine model	£56 10
B.S.A., 3½ h.p., 2-speed gear	£60 0
DOUGLAS, 2¾ h.p., Model K	£50 0
DOUGLAS, 2¾ h.p., Model H	£47 0
DOUGLAS, 2¾ h.p., Model G	£41 0
CENTAUR, 3½ h.p., Model Superb	£52 10
CENTAUR, 2 h.p., 3-speed gear	£47 10
JAMES, 3½ h.p., chain drive, with Canoelet sidecar	£72 0

Also immediate deliveries of all models of **any first-class make.**

THIS WEEK'S TIT-BIT.

Brand New 1911 Model 3½ h.p. **BRADBURY,** standard model, not shop-soiled or scratched; list price, £48; special bargain; price **£38 0**

HIGH-CLASS SECOND-HAND MOTOR CYCLES.

1911 3½ h.p. **TRIUMPH,** Clutch Model, and practically new, only run about 500 miles, fitted with Lucas headlights, generator, horn, carbide carrier, tools, spares, etc., complete. The best second-hand machine we ever had; cost over £66; clear **£47 10**

1911 **DOUGLAS,** 2¾ h.p., only run 200 miles **£33 0**

1911 3½ h.p. **TRIUMPH,** perfect **£35 0**

1910 3½ h.p. **BRADBURY,** T.T. model, a gift **£32 0**

1911 3½ h.p. **IVY-PRECISION,** lamp, generator, etc. **£33 0**

1911 3½ h.p. **RUDGE,** splendid order **£36 0**

1910 **SCOTT,** new tyres, B.E. tubes, good order .. **£35 0**

1909 **VINDEC SPECIAL,** two speeds, magneto, complete with sidecar **£29 0**

1909 3½ h.p. **MINERVA,** magneto **£17 0**

1911 7 h.p. **SPEED KING REX,** as new **£38 0**

MOTOSACOCHE, 1¾ h.p., 1910, free engine model **£21 0**

1908 **QUADRANT,** 3½ h.p., Bosch magneto, h.b. control, spring forks **£18 0**

Every Motor Cyclist should have OUR Sidecar List.

STANDARD, £4 10s. SPECIAL, £5 5s.
DE LUXE, £6 6s.

CANOELET, DUNKLEY, MILLFORD, etc., supplied to order promptly.

I am Sole District Agent for—
RUDGE, BRADBURY, CLYNO, ENFIELD, CENTAUR, PREMIER, ROVER, B.S.A., DOUGLAS, NEW HUDSON, SINGER, and JAMES.

And can also supply
TRIUMPH, ZENITH, SCOTT, MATCHLESS, F.N., HOBART, etc., at lowest prices.

200 1912 MODELS FOR GUARANTEED DELIVERIES.

OUR SPECIALITY, "EXCHANGES"

Extended Payments arranged for any machine at slightly increased cost.

N.B.—You cannot possibly have got the best terms for any machine unless you have been in touch with me. Write at once to "the recognised North of England Motor Cycle people."

J. S. CORDINGLEY,
The Motor Cycle Mart,
HASLINGDEN, Lancs.

Wires: "Cordingley, Haslingden." 'Phone: 2Y, Haslingden.

MOTOR BICYCLES FOR SALE.

1912 Motor Cycle Deliveries.—Zenith January, Kerry-Abingdon January, Calcott lightweight January, Rover February, New Hudson February; sidecars and second-hand machines always in stock; exchanges entertained; send for catalogues.—Dundee Motor and Cycle Co., Nethergate, Dundee.

SECTION XI.

Ireland and Isle of Man.

3½ h.p. Rex, 2-speed, £20; 2h.p. Motosacoche, magneto, £12.—119, Donegall St., Belfast.

ROYAL Enfield Motor, 2¾h.p., new last August, fresh condition, splendid hill-climber; bargain, £30.—Ruddell, Ballymena.

MOTOR TRICYCLES AND RUNABOUTS.

ORLEANS Runabout, 2 speeds, Dunlops, low, comfortable, good condition; £20, or offer. — 290, Ewell Rd., Surbiton.

1911 10h.p. Bedelia, used for demonstration, hood, screen and lamps; any trial or examination; £85, or offer.—Dan Guy, Weymouth.

CRESCENT Runabout, 1911 model, only done about 300 miles, new condition; trial in Birmingham (by appointment); £80.—Harman, 235, Charles Rd., Small Heath, Birmingham.

QUADCARS.

DUOCAR, twin water-cooled Fafnir, 2-speed, reverse, centre chain drive.—"Albacore," Inverness Av., Westcliff-on-Sea.

MONOCAR, 8h.p., coach-built body, water-cooled, Buchet engine, 3 speeds, wind screen; £35; photo and particulars.—Dr. Wilson, Louth.

TRAILERS.

MILLFORD Motor Trailer, good condition; cost 11 guineas, sell 30/-, genuine bargain.—Andrew, 22, Montague Rd., Richmond.

TRICARS FOR SALE.

TRICAR (Humber), excellent condition; £10.—Field, Motor Works, Camberley.

LIGHT Tricar, 3½h.p. Humber, 2-speed, free; £10, or exchange.—Franklin, draper, Kingston.

TRICAR, 10h.p. Rexette, £25; exchange car, cash adjustment.—105, Church Rd., Willesden.

A.C.U. Owners should write Bass, Insurance Broker, Bishop's Stortford, for particulars of special policies

4½ h.p. Riley, 3½h.p. Triumph: £10 to clear.—Stamford Hill Motor Co., 128, High Rd., South Tottenham. 'Phone: 1982 Tottenham.

5-6h.p. Twin Tricar, perfect condition, tyres brand new, B. and B., h.b.c.; 100 miles trial given; £20.—Marines, Netheravon Rd., Chiswick.

HUMBER Tricar, 3½h.p., mechanical condition, faultless, good tyres and tubes, belt drive; £15, offers.—Oseman, Ashmounts Stables, Redington Rd., Hampstead, N.W.

TRIMO Forecar, 5h.p., twin Bercley, Bosch magneto, 2-speed, pedal clutch, handle starting, Palmers, first-rate condition; any trial; £16, or offer.—C. J. Lander, grocer, Ryde.

A.C. Speed Sociable, 1910 model, hood, screen, front brakes, lamps, generator, horn, spare covers, butt-end tube, tool kit, and accessories; price £70.—Salisbury, Gable End, Harpenden.

SOCIABLE 9h.p. Twin Riley, w.c., 3 speeds, reverse, wheel steering, hood, wind screen, good tyres, spares: £37, or exchange; trial, appointment.—Edwardes, 92, Camberwell New Rd., S.E.

4½ h.p. Rover Tricar, w.c., wheel steering, coach-built, 2 speeds, etc., 1911 B. and B. fitted, just been overhauled at cost of £9, good tyres; any trial; £18.—Sidney Jeffery, The Hill Farm, Exning, Newmarket.

5 h.p. Wolf Tricar, water-cooled, 2 speeds, gear box, clutch, chain drive, handle starting, thorough good condition; cost £75, bargain £26, or exchange with cash for runabout.—4, Alexandra Gardens, Muswell Hill, N.

4½ h.p. Water-cooled Stevens Engined Sociable Tricar, beautifully upholstered, wheel steering, 2 speeds and free, car control, three new tyres, three lamps, all equals new; £35; buying car; photo, particulars.—Matthews, Southam, near Rugby.

SIDECARS AND FORECARS.

SIDECAR, with Palmer cord, nearly new; £4/10.—G. Walker, Birchington, Kent.

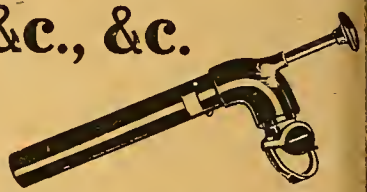
£3/10.—Chater-Lea sidecar, run 50 miles; sacrifice.—Hart, 206, London Rd., Twickenham.

GIRDER Frame Sidecars, unique designs, from £8.—F.N. Repairs Dept., Highbury Barn, N.

MILLFORD 1911 Art Cane Sidecar, and good spare tyre; £6/10.—15, Ranelagh Gardens, Barnes.

SIDECARS, brand new, beautifully upholstered, fit any make; £3/10.—Rey, 5, Heath St., Hampstead

1oz. of Fact, &c., &c.



THE FACTS ARE:

Clients all over the world are so delighted that they cannot help writing to tell us so. Orders are pouring in faster than ever. **Quality** and **Utility** have told their story.

THE

GARNER

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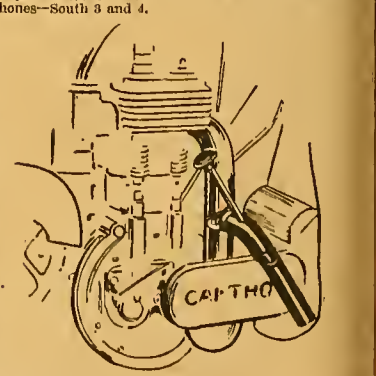
are selling in Thousands.

Have you one of The Thousands? If not, seize on one. Enhance your pleasure. Be immune from danger. Be **Up-to-date** and **Be Quick.**

THE GARNER IS EASY TO FIT.

PRICES—
12/6 N.P., 15/6 Black Plated
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THE MOTOR CYCLE

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Who will Adopt the Quadcar?

THE light form of motor car built on what is known as motor cycle lines is undeniably a motor car. It is recognised by the Government as such, as it is compelled to carry car numbers and to be registered as a motor car. The law does not define a motor cycle, but the Local Government Board does in a rough and ready sort of way by inferring that a motor cycle may not exceed 3 cwts. nor have more than three wheels. Now a quadcar can have no less than four wheels, and is difficult, if not impossible, to keep within the weight limit, and it is therefore practically certain that it conforms to neither of these conditions. A motor cycle is a motor car within the meaning of the Motor Car Acts except as regards registration, licensing, and carrying rear lights. It is absolved from having big number plates, car registration fees, a reverse, and so forth. [The L.G.B. in an order made in March last year exempts all motor vehicles from a reverse gear provided they did not exceed 7 cwts.] Since this is so, why is the Auto Cycle Union asked to encourage trials for a type of vehicle which is clearly not under its ægis? It is in our opinion indisputably the duty of the Royal Automobile Club to work for the development of these machines. They are cars, and in consequence they should be looked after by men who know what is to be expected of four-wheeled vehicles. The Auto Cycle Union has enough to do with its motor bicycle and motor bicycle and sidecar trials without worrying about what does not strictly concern it. The R.A.C., on the other hand, has not organised a road trial in which several makes of vehicles competed at once for some time, and therefore there is all the more reason it should do so now a new type of motor car has appeared. To build a cheap motor car is the very easiest thing in the world, but to make it good and lasting is an altogether different matter. Should the R.A.C. fall in with our suggestions and organise a trial for these machines and find observers, the quadcar industry would receive a fillip of which its members have not yet even dreamed, and by the end of the year we should have a light and cheap four-wheeler of which we might be justly proud. In the event of the R.A.C. ultimately deciding to take the quadcar under its wing, it ought to do more than say it will look after the new vehicle. Suitable trials should be at once arranged. It would be better for the A.C.U. to take up these vehicles at once and allow them to participate in the motor cycle trials, but in a separate class, than for the R.A.C., after undertaking to protect their interests, subsequently to neglect them. This journal will do all it can to encourage the quadcar at present by describing different makes and reporting their doings, even though the A.C.U. does not encourage their development. But if the A.C.U. has not, the Manufacturers' Union has seen the matter in the same light as ourselves, as quadcars were not accepted in the Olympia Motor Cycle Show.

To make a start, why doesn't the maker of a quadcar enter one of his vehicles for a R.A.C. trial? All he has to do is to write to the R.A.C. Technical Secretary, Pall Mall, S.W., and state that he wants his machine tested under observation, when he will receive full particulars. He may suggest any sort of test which occurs to him, and, if he gets through, the world at large will know that his performance is hall marked in such a manner as to leave no shadow of doubt as to its worth.



A Week-end on a Sociable.

AN account of a week-end extending over Saturday and Sunday would doubtless be interesting to the users of the popular A.C. sociable, who by this time should be somewhat numerous, judging from the numbers to be seen on the road. It might also be of some use to the pace purveyors who sprint about the country on a raging 7 h.p. monster with a skeleton of a sidecar attached and a palpitating passenger ensconced therein.

The machine is one of last year's pattern, not fitted with a hood or screen, but provided with the substantial carrier supplied by the makers. This carrier, by the way, is perfectly capable of taking a second passenger if a board be made to fit over the bars of which it is made and the same provided with a cushion. The passenger sits sideways, and I am told that it is quite comfortable in spite of the fact that there is no support for the back. The effect of this attachment on the machine is only appreciable on hills, and that to a very small extent—on the level there is no appreciable lowering of the speed, but, on the other hand, a considerable steadying effect on the steering.

Improvement to Carburetter.

Another deviation from standard has been made, this being the conversion of the automatic carburetter to semi-automatic. Users of the A.C. will know that the air supply of the carburetter is regulated by a choke tube which moves up and down with the throttle, so that with a larger opening of the throttle there is a corresponding increase in the air supply. I found that with the throttle almost shut on a down grade the engine did not get nearly enough air, whereas when open to the full extent on a hill it got too much when running slow, necessitating recourse to the low gear to obviate knocking. I have now made the choke tube a sliding fit in the throttle barrel, and can regulate its position therein by means of an ordinary Bowden lever and wire. As a result the carburetter is just as automatic as ever, with the added advantage that I can regulate the air when a perfect mixture is of importance. Another improvement I have fitted to the engine is an exhaust lifter made from a stout strip of wrought iron and actuated by means of a Bowden cable and a small pedal. This attachment enables me to coast down any hill of a moderate gradient and to start the engine up at the bottom, to say nothing of the advantage of being able to start the engine without cranking. Of course for this last a pusher other than the driver is necessary, but as the engine can be started on top gear at a pace not more than four miles an hour this is no great hardship for the passenger, to whom this duty is relegated as a rule.

To return to the tour. We started at 10.30 a.m. on the Saturday, and soon arrived at Fareham. Here we adjusted the clutch, a very simple matter—one of giving a half turn to three screws with a pocket-knife. One cannot give the A.C. clutch too much praise. It can be slammed in without any injurious effects, and one is able actually to change up on a hill from a low gear of 12½ to 1 to a top gear of 5 to 1.

We speedily made our way to Romsey at an average of 20 m.p.h.; in fact, we did one mile at an average of twenty-five, and that over a road none too good. After leaving Romsey we had to climb a hill which proved too much for our little jigger's top gear, although we managed to get very near the top. The low gear was then engaged, and we caught up and passed a car which was rattling up on its first speed.

The New Forest Roads.

The run through the New Forest was marred by the awful pot-holes, the road being one stretch of holes, with the unfortunate back wheel hopping from one summit to the other, making things somewhat uncomfortable and necessitating a reduction of the speed to about seventeen miles an hour. The scenery was as usual fine, as anyone who knows the district is aware, and we thought it would be a good idea to discuss the sandwiches and fruit we had brought with us. We gathered here some holly with plenty of berries on it, and I believe this is held to be a sign of a coming hard winter. After an inspection of the Rufus Stone (an iron box enclosing the remains of the stone), we put on speed and glided along with the engine doing its 1,300 revolutions per minute quite comfortably. As we did not want to pass through Poole with its watered tramlines, we turned off at the fork to Wimborne, and ultimately came out on the other road to Poole. Turning off once more, we ran on at a spanking pace to Wareham, that quiet little town on the Frome, but not so quiet in the days of the Civil War, when the inhabitants proved such thorns in the sides of the Parliamentarians who were busy at Corfe Castle demolishing it that it was seriously considered whether it would be advisable to raze the town to the ground. The town, although of only two or three thousand inhabitants, rejoices in a Mayor and Corporation, relics of the days when it was a seaport.

We had originally intended to stay at West Lulworth for the night, but as there was still plenty of daylight we decided to go on to Weymouth and see what sort of a place it was. The road from Wareham to Weymouth is not of the best, and so our attention was practically confined to steering the tricar over the pot-holes. Our pre-occupation was not so great

A Week-end on a Sociable.—

that we missed the white horse on the hill above Weymouth or the blackberries growing in the hedge. The berries were absolutely the best I have ever tasted, being quite as large as raspberries, and some with a flavour quite unlike what one had been used to. Weymouth proved to be the usual sort of seaside place, so we did not stop, but, after perambulating the town with the engine just working on top gear, we ran on to Portland, the A.C. taking the hill out of Weymouth in fine style.

The Evening at Portland.

The road along Chesil Beach is one of the best I have met with in the South of England, the surface being



The White Horse, near Weymouth.

hard macadam and quite fit for a speed trial; in fact, we were told by the only visible representative of the civil power at Portland that he had timed a car over the whole length of the road in two minutes. Risking arrest as German spies, we took several photographs of the harbour and the citadel, and proceeded, as it was getting dark, to Fortune's Well, the little town at the foot of the rocks. While prospecting for an hotel, we came upon a street with something of a rise and put the engine at it. On the low gear, with the engine steadily beating and the chain giving its musical purr, we went up that piece of 1 in 5 as though it were not there, what time the inhabitants rushed out to their doors to see what manner of motor this was to tackle that street. Finding no hotel to suit us, we ran to the bottom again, and ultimately put up at the one in the square, where we soon had a wash and a good meal. The main street of Fortune's Well has itself a gradient of 1 in 4 for some little distance, and leads up to the top of Portland Island. We followed this road, and after much climbing found ourselves in the region of the citadel. There being nothing much to see owing to the darkness and feeling cold owing to the breeze which had sprung up, we retracted our steps, and, after taking a different course, found ourselves overlooking the town, which had the appearance of a fairy garden with the lights twinkling far below. As we sat there, very distinctly came up the strains of the Salvation Army Band, though somewhat softened in tone and consequently more acceptable. We could hear, also very distinctly, the people talking in the streets and see the lights of Weymouth in the distance. On the following morning, after we had discharged a very reasonable bill (11s. for the two of us, including rooms, meat supper, and breakfast, and accommodation for the tricar), we sallied forth once more to see if we could do the High Street. This was easily accomplished on the low gear, and we sought fresh hills of a similar calibre (1 in 4). These we could not find, there being none, so we went on and explored the island, which appears to be simply one mass of quarries and not a patch of anything else. one mass of quarries and not a patch of anything else.

A Pretty Cove.

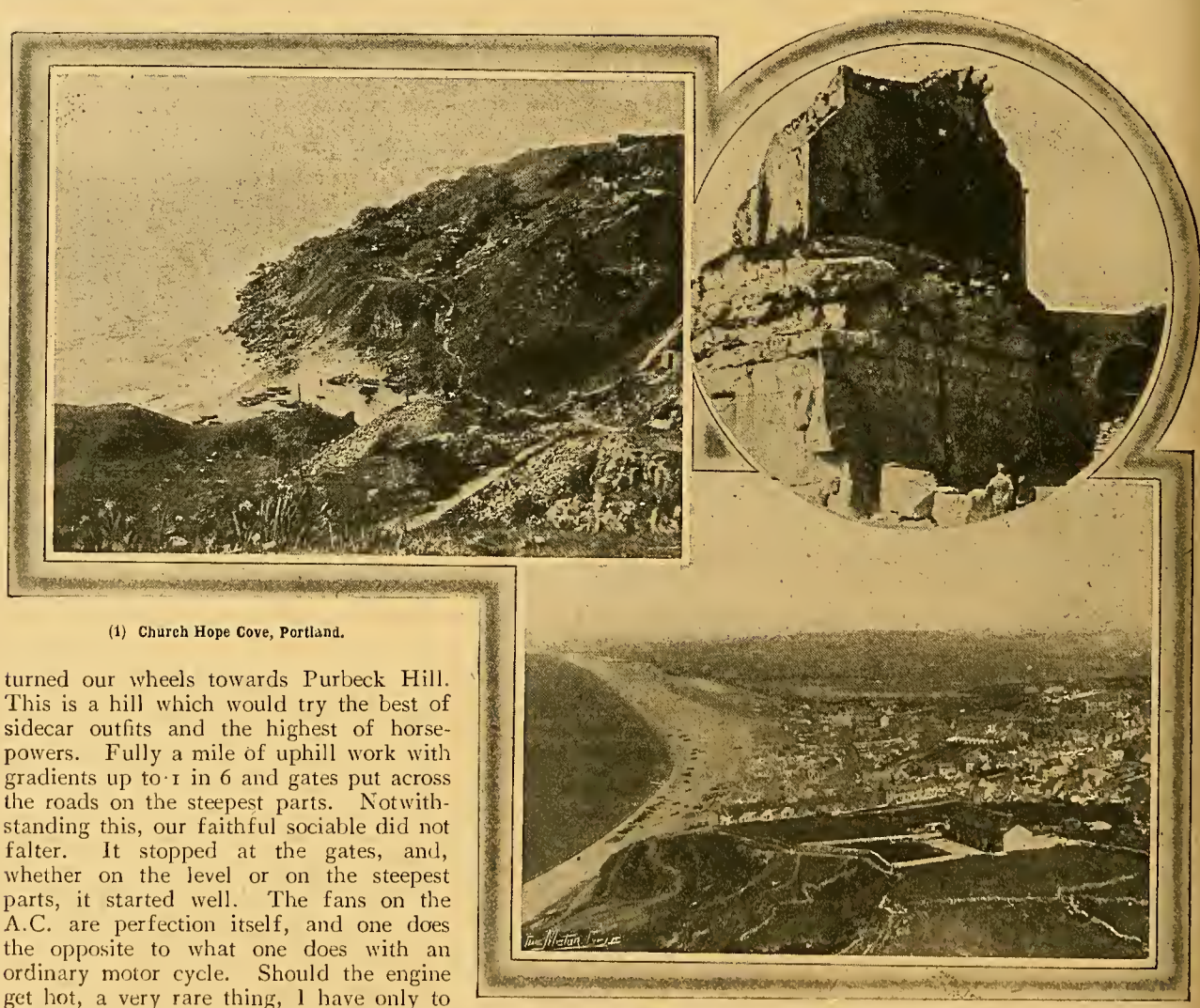
On our way round the Bill we came upon a road marked "To Church Hope Cove." We decided to investigate, and, when too late, found that the road was merely a path leading down on to a platform of rock overlooking one of the loveliest coves I have seen. The path went down beside a tower perched on a huge rock looking out over the Channel, and was probably in its day a watch tower. We took several photographs here, and with some labour turned the tricar round and got on to the road again. Having seen as much of Portland as we wanted to, we returned along Chesil Beach to Weymouth, where petrol was



Lulworth Cove. Famous years ago as a smugglers' retreat.

A Week-end on a Sociable.—

taken in, and a long conversation ensued with another owner of an A.C. Having compared notes with him, we departed for West Lulworth. On the way there a Douglas and a Triumph passed us, and we immediately gave chase, holding on to them until we came to the turning for Lulworth. Here we lost our way, and after much perambulation of narrow lanes with bad surfaces and the opening of many gates, we arrived at the cove. We did not stay here long, but turned our wheels towards Purbeck Hill. This is a hill which would try the best of sidecar outfits and the highest of horse-powers. Fully a mile of uphill work with gradients up to 1 in 6 and gates put across the roads on the steepest parts. Notwithstanding this, our faithful sociable did not falter. It stopped at the gates, and, whether on the level or on the steepest parts, it started well. The fans on the A.C. are perfection itself, and one does the opposite to what one does with an ordinary motor cycle. Should the engine get hot, a very rare thing, I have only to give it a few hundred yards of low gear work, and it is ready to change up again.



(1) Church Hope Cove, Portland.

(2) The watch tower at Church Hope Cove, Portland.
(3) Fortune's Well and Chesil Beach, Portland.

Purbeck Hill and Corfe Castle.

The view from Purbeck Hill is grand, extending for miles to the landward and affording splendid views of the rock-bound coast. Proceeding down the hill and along the valley for some distance, we came upon Corfe Castle, perched in solitary but magnificent ruins on the summit of a huge mound between two ranges of hills. The work of the Parliamentary sappers is clearly visible in the fantastic angles assumed by some of the towers and the huge fragments of masonry at the foot of the mound. In its day the Castle must have been a very tower of strength.

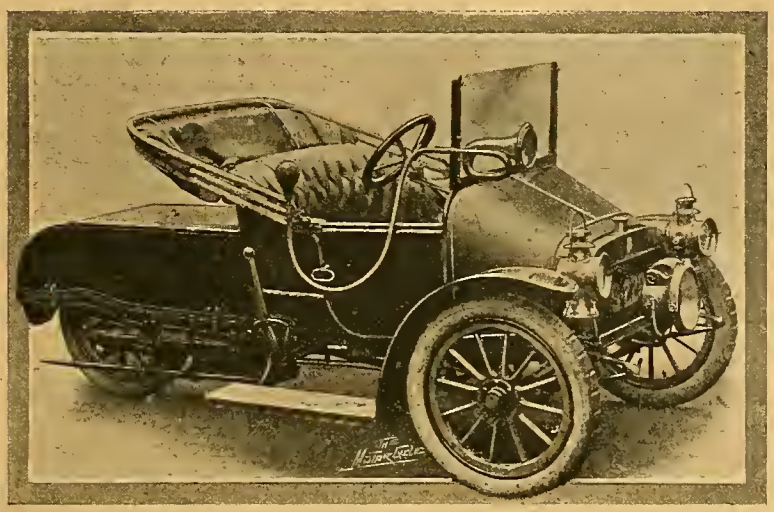
The road back to Wareham is splendid—smooth, wide, and straight. From Wareham we went on to Christchurch, skirting Bournemouth, and thence to Lyndhurst.

From Lyndhurst onwards we had no trouble at all, and made a good average of 20 m.p.h. for the distance. We arrived at Portsmouth just before lighting up time, having had one of the best times of our lives. Beyond adjusting the clutch once and changing the valve caps round to stop misfiring we had no trouble whatever. This speaks well for a machine scaling upwards of 7 cwts. with two up and baggage and an engine only 90 mm. × 102 mm. The reason why the caps were changed was because I was experimenting to see what effect having the plug over the exhaust had. I found that there was some missing at any speed and rather more when the throttle was open on hills. Perhaps a tour over the ground we covered would convince some of the single gear merchants that some form of change-speed gear is desirable if a strenuous course of hard work is to be avoided.

"AIR-COOLED."

A Run on the C.M.C. Carette.

IT was a cold, frosty day with a fine powder of snow falling; consequently it was with somewhat mixed feelings that we accepted Mr. Crouch's offer of a run on one of his little three-wheelers. The machine we tried was a low, grey, rakish - looking vehicle about to be delivered to a customer



A 6-7 h.p. C.M.C. Carette fitted with hood and screen.

The twin-cylinder water - cooled engine started at the first pull over of the handle, and we slid away, getting into top speed within twenty yards of our office. The first thing to strike us was the silence of the machine, only a slight "puffle" from the exhaust being audible. Other slight noises, such as chain rattle and valve clicks, seem to flow away behind, and do not worry the passengers.

Later on we traversed some bad road surfaces, and were agreeably surprised at the absence of shock, even bad pot holes being passed without discomfort. Though we were never in need of the lowest gear, Mr. Crouch dropped down to first and second to demonstrate the quietness of the gear box, and even on reverse no unpleasant noise was noticed. Once we stopped to exercise ourselves to get warm, and employed our time in looking round the power unit. Here we noticed several minor improvements, the most important of which is a neat metal guard which prevents mud being thrown on to the engine and transmission.

Restarting, we ascended a steady rise on top speed with the engine pulling well at slow speed.

Two important points struck us particularly, viz., the absence of roll, so common in tricars, and the particularly easy steering. The latter is carried out by means of a wheel connected to a simple rack and pinion gear carried high up out of the mud and dust.

Altogether we were delighted with our experience and the behaviour of the machine. The engine ran faultlessly throughout, and the smooth action of the clutch and brakes and absence of vibration are points which have left us with an excellent impression of the C.M.C. Carette.

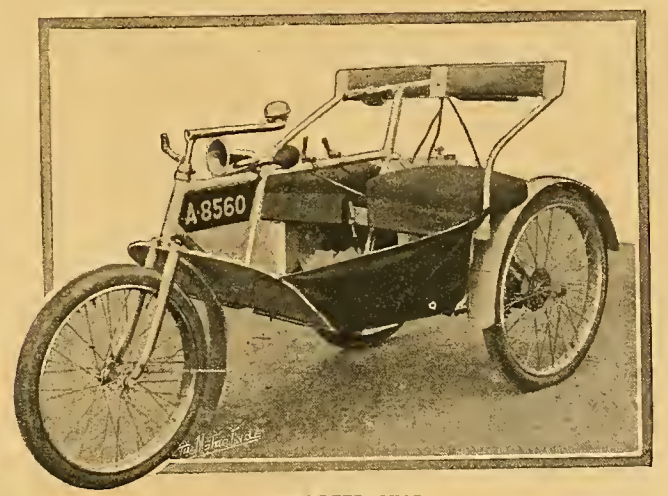
A Converted De Dion Quad.

THE photograph shows one of the original De Dion quads that has been converted to an up-to-date two-seated runabout by a Catford motor cyclist, the alterations being carried out entirely by himself at a small private workshop.

The original De Dion engine, transmission, tanks, wheels, and even frame tubes and lugs were used. In place of the quad seating and steering, however, two side-by-side seats with a single steering wheel are provided. Two push-pedals are fitted. One pedal operates the band brakes and the other the throttle of the Dion carburetter. The ignition and air levers are fitted handy to the driver on the top tube. The exhaust lifter is fitted at the end of the long tiller, and the machine can be steered from either seat! It is said to be considerably lighter than in its original form.

Although a free engine would be an improvement, its owner states that it is not absolutely necessary, the engine being tuned to start fairly easily. It is in regular use, and is considered quite satisfactory for a runabout, and even with a passenger will climb a good many hills under favourable conditions, the gear being about 7 to 1.

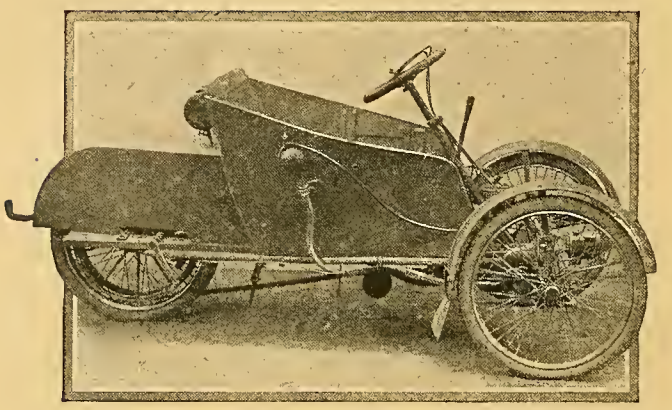
The engine and gearing appear to be in very good condition, and the machine is not so noisy as some bicycles. There is a space under the seats for carrying tools and spares, and the whole machine is finished aluminium colour.



A CONVERTED QUAD.

This makes a handy little runabout which can be steered from either seat.

A Light Three-wheeler.



A Converted Tricar.

WE illustrate on this page what is probably the lightest side-by-side seated three-wheeler on the road. It was originally a tricar, and in this condition saw much service. The owner, however, who is a Triumph tester, realising the sociability and comfort of side-by-side seats, converted the machine as depicted in the photograph, using the old tricar frame. Naturally on such a frame the body is not a wide one, the passenger and driver having, in fact, to squeeze into position, which after all is not such a disadvantage this cold weather! The engine is a 3½ h.p. air-cooled on standard lines, and drives through a long Whittle belt, a hub plate clutch being fitted in the rear wheel. Though only a single gear is employed, the machine carries its double load quite satisfactorily on ordinary roads. The long lever noticeable in the photograph actuates the clutch.

Definition of Quadcars and Runabouts.

AS we have already announced, the Motor Cycling Club has decided to award two silver cups in the London-Edinburgh run—one for the best performance on a motor cycle and sidecar, and one for quadcars and runabouts with three or four wheels. The committee is undecided respecting the definition of a quadcar or runabout, and no wonder. It is extremely difficult to differentiate between quadcars, runabouts, and the smallest types of voiturettes by a written description. In other words, if one attempted to define the quadcar by any other method than weight and price, we think it would result in considerable confusion. With a view of arriving at some definite opinion respecting the weights of those quadcars and runabouts already on the market, we have been in communication with some of the manufacturers of these machines, and below are the stated weights of their vehicles when unladen, *i.e.*, without petrol, oil, and spares, but otherwise ready for the road. The average weight of fifteen different vehicles works out at 5 cwts. 1 qr.

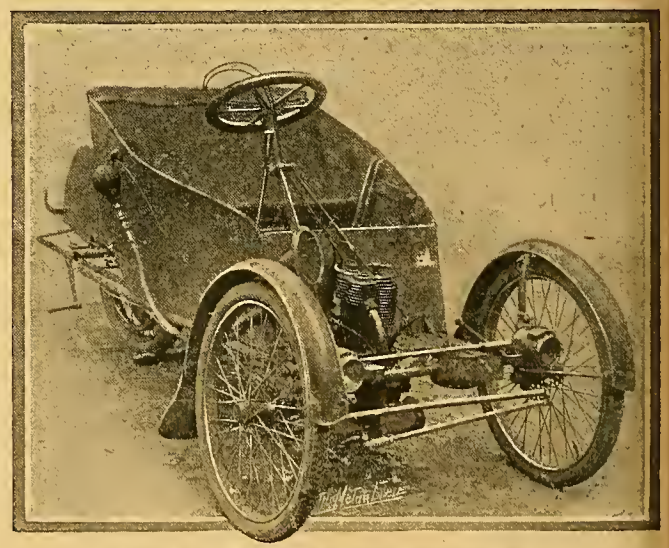
WEIGHTS OF RUNABOUTS ON THE BRITISH MARKET.

	cwts.	qrs.	lbs.
A.C. Sociable	4	2	0
Autotrix Runabout	3	2	4
Bedelia	2	2	20
C.M.C. Carette	5	3	0
Enfield Autorette	6	2	0
Eric Tourer	8	0	0
G.N. Runabout	4	0	0
Morgan Runabout, without hood and screen	3	0	0
Morgan Runabout, with hood and screen, lamp, tools, and large tyre	3	3	0
Phänomobile (two seater)	5	2	0
P.M.C. Runabout	5	1	0
Rollo Quadcar	6	0	0
Sabella Runabout	4	3	0
Tyseley Runabout (three wheels) ...	6	2	0
,, ,, (four wheels) ...	7	1	0

We therefore reiterate that the definition of a quadcar or runabout with three or four wheels should be of one weight and price, and that vehicles exceeding 600 lbs. and £100 should not be eligible for the special awards.

We do not see any other way out of the difficulty, and we think that a weight definition will act beneficially in many ways. Manufacturers whose machines are slightly in excess of the defined limit will receive an incentive to reduce the weight of their machines, and also to simplify them and thus reduce the price if they should be listed at over £100. However, it should be made quite clear in the regulations for the above event, and similar competitions in which special awards are made for this type of vehicle that they must be of the standard type, and that no reduction of weight must take place by the removal of any portion of the essential equipment of the vehicle, that is to say, the standard body, wings, etc., as supplied to the public should be fitted, but unless the vehicle is supplied with hood and screen as standard the weight should be reckoned without these accessories.

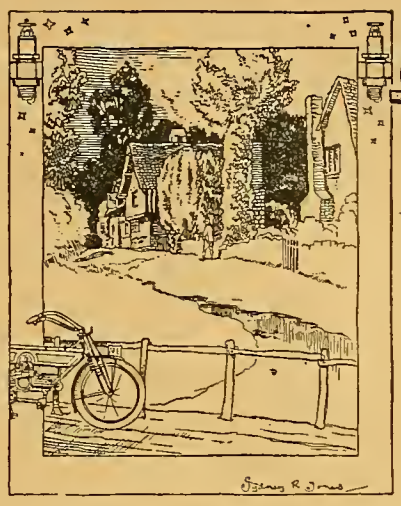
In fixing a weight limitation it is, of course, necessary for each vehicle to be weighed either at the start or close of a competition, which somewhat complicates matters, particularly as the London-Edinburgh entry is always a large one, and the officials have as much as they can do to control the competitors.



Another view of the light three-wheeler referred to above.

Questions & Replies

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply.



Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Counter-shaft Two-speed Gear.

(1.) I should esteem it a favour to have your opinion of Bowden counter-shaft two-speed gear for my 1912 Triumph with sidecar. I have a reliable machine and do not want to spoil it. (2). Do you think the Bowden will be quite reliable? (3.) Is there any danger of slipping on top or low gear on steep hills with sidecar?—J.E.C.

(1.) We have a high opinion of the gear mentioned in your letter, and think it would suit your purposes admirably. (2.) There is no reason why it should not be reliable. (3.) If properly adjusted there should be no slipping.

A Long Exhaust Pipe.

I intend to replace my present exhaust pipe and silencer by a long exhaust pipe only, flattened at the end. (1.) What should be the length of the pipe, engine 240 cubic centimetres, and pipe must be ¾ inch internal diameter, and to what size should I flatten the end of the pipe? (2.) Is copper a suitable metal for the pipe? (3.) How should I set my exhaust valve (automatic inlet) for greatest hill-climbing power (not speed)? (4.) What is the best amount of opening for the inlet valve? —C.H.L.

(1.) The length of the pipe should be from the exhaust port to the rear axle, or just beyond. The size, of course, is regulated by the diameter of the exhaust pipe. Flatten the end to about ½in. (2.) No, copper is not suitable; steel is better. (3.) Set the exhaust valve to close dead on the top of the exhaust stroke. (4.) The inlet valve should open about 3-32in.

When to Retard Ignition.

Am I right at slowest speed, four to six miles an hour, keeping ignition lever on tank fully advanced always on a 1910 f.e. Triumph? I believe this agrees with makers' advice, but a local engineer suggests that at slow speeds a fully advanced spark is more strain on engine bearings than a retarded one. Would this be so, and why? Personally, I ride always fully advanced at all speeds and hills. Excepting when using sidecar up a steep hill, I never retard spark, and then it is usually the last thing I do, reducing air first. Is this right, or would you say retard spark lever at commencement of a hill when using sidecar? I should like to know the reason for or against advanced lever position at slow speeds, so that I can appreciate its effects on the bearings of engine, etc.—A.I.M.

It is quite true that at slow speeds the fully advanced spark is more strain on the engine bearings, as the explosion is taking place prematurely, and the piston has often to work up against its force. This is more especially true in the case of accumulator ignition, but, as the intensity of the magneto spark varies with the speed, the comparatively feeble spark producing slower combustion causes the magneto to have an automatic retarding effect. On the other hand, if the magneto is set in at all an advanced position, it is not advisable to drive with full advance at slow speeds. If you can do so without the engine knocking, it simply means that you lose efficiency by not being able to advance the spark more when you are travelling fast. However, the setting of your spark may be quite correct for ordinary purposes, and we should not advise you to alter it.

A New Carburetter.

I am writing to ask your opinion on an entirely new carburetter. I may say that after a great deal of experimenting I have succeeded in making one as follows: Petrol controlled from handle-bar or on carburetter separately, and it may be cut right off or otherwise, either way, and it is fed by gravity or pressure. The petrol lever on handle-bar opens an extra air valve if desired. There is no possibility of petrol blowing back. It is perfectly automatic after being set to suit any engine, and engine may be driven on throttle? There are no sticking valves, and it has a straight way through. It has given marvellous results fitted to a 5 h.p. T.T. Matchless. At the present moment the above carburetter reposes quite out of sight in one of my waistcoat pockets.—J.H.W.

We are very much interested to hear about your carburetter, and we shall be very glad to receive details and drawings. If you protect the article, which will cost one guinea, we could publish full details if we consider it would prove to be of general interest.



Miss Welstead (driving) and Mrs. A. G. Alsford, both members of the Bournemouth Motor Cycle Club, on a 3½ h.p. Scott with Millford sidecar.

Twin v. Single.

(1.) Is a 6 h.p. twin motor cycle as reliable as a 3½ h.p. single, both machines being fitted with change speed gears? Also shall I be courting trouble if I purchase a twin? (2.) I require the machine for sidecar work, and intend having a 6 h.p. Zenith.—G.W.S.

(1.) A twin is practically as reliable, but slightly more complicated than a single; in the hands of a careful driver there is no reason why great satisfaction should not be obtained therefrom. In fact, for sidecar work we consider that a twin is superior. (2.) We should say that the 6 h.p. machine referred to in your letter would suit your purpose admirably.

Foot Starting and Half Compression.

I am a rider of a 1911 3½ h.p. free engine Rover (Triumph free engine hub), and as I ride in all weathers, and have had some considerable trouble owing to the free-wheel of the pedal gear working full of dirt, etc., and refusing to act. I am anxious to fix a more satisfactory means of starting, and also to convert my machine into a two or three-speed one (1.) Do you advise a counter-shaft gear or an Armstrong three-speed hub? (2.) What makers market a counter-shaft gear suitable for fixing to any make of machine, and which is in your opinion the best and least liable to accident from back-firing in the engine? (3.) Do you consider the Amac half-compression device a useful addition to a machine?—G.E.M.

(1.) Either a good counter-shaft gear or the Armstrong three-speed gear would suit your purpose. (2.) Messrs. Bowden Wire, Limited, 37, Pratt Street, Camden Town, N.W., make a good counter-shaft gear which incorporates a foot-starting device. (3.) Yes, we consider the device in question to be useful.

Sidecar Requirements.

I contemplate purchasing a sidecar combination and am attracted by a well-known 6 h.p. twin, 77½ × 95, capacity 896 c.c., belt driven. I have no desire whatever for high speed, and do not anticipate having to climb freak hills, but I want to take a substantial and comfortable sidecar. (1.) Would this machine, which is fitted with a long exhaust pipe to rear, be quiet when driven at 15-18 m.p.h.? (2.) Would it be more silent at this speed than a 3½ h.p. single and sidecar? (3.) Would such a high-powered machine run easily at slow speed, and be simple to handle? (4.) What should be the petrol consumption compared with that of a 3½ h.p. single and sidecar? (5.) Would the belt drive be satisfactory for the slow speed named? (6.) Judging by the capacity, surely the machine is more than 6 h.p.? (7.) Would you recommend a less powerful machine in view of my desire for silence, moderate speeds and comfort?—W.M.S.

(1.) The machine would be quiet at low speeds. (2.) It would be more silent than a single cylinder. (3.) Yes. There would be no difficulty about driving at slow speed. (4.) The petrol consumption would be about twenty to thirty miles less to the gallon than a single cylinder, say 50 to 60 m.p.g. (5.) The question of belt or chain drive is a matter of personal choice, but we lean towards the chain for passenger work. (6.) The machine should develop 9 h.p. (7.) We should recommend you to adhere to the machine mentioned, as it is a comfort to have a little power in hand going up hills.

Detachable Wheels for Motor Cycles.

A friend of mine has shown me an invention which he recently patented. I was contemplating joining with him in the exploiting of the patent if I could come to terms with him. However, before doing this I should like to know your opinion as to whether the idea is new, or whether from your experience you can say the idea has been previously adopted. The invention is in connection with the construction of the hub and axle parts of wheels for motor cycles and sidecars, whereby any wheel can be interchanged so that the front wheel may be put at the back or *vice versa*. One of the chief points is that it can be done in a couple of minutes, and that the change does not interfere in any way with the driving wheel or the brake bands attached to the back wheel. These remain absolutely rigid. The idea also renders practicable a spare wheel for bicycles and sidecars. The invention seems to me exceedingly practicable, and has been used by the inventor for several weeks, and the cycle has covered many hundreds of miles. If the invention is good on account of its novelty, I think it has great prospects of success, but as you are conversant with the details of motor cycle inventions, I should be obliged if you would let me know whether in your opinion there is any danger of prior inventors claiming to have utilised the idea.—G.H.H.

We should say that a device of the type mentioned in your letter would be most desirable, and would be worth exploiting. We do not think that the patent has been anticipated, but to find this out definitely you would have to put the matter in the hands of a patent agent and have a proper search instituted. We are very much interested by the idea, and shall be glad to hear further details as soon as you can conveniently send them.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"T.A." (Burnley),—2¼ h.p. and 5-6 h.p. F.N. Reliability of clutch and shaft transmission.

"H.H.T." (Melton Mowbray).—2¾ h.p. Enfield and 2½ h.p. A.J.S. Two speeds and free engine.

"W.E.H." (Salisbury).—Casso and other decarbonisers.

"P.W." (North Finchley).—3½ h.p. Zenith-Gradua with sidecar.

"A." (Waltham).—Mabon variable gear fitted to 3½ h.p. machine; with and without sidecar.

"J.D." (Cardiff).—Albion two-speed hub and free engine clutch.

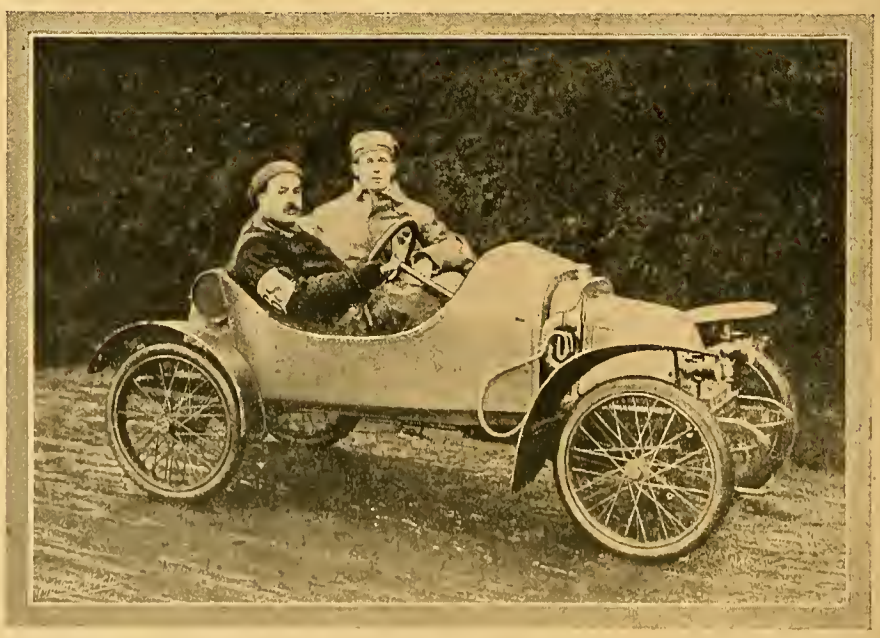
"J.W.S." (Chislehurst).—3½ h.p. and 8 h.p. Campions.

"J.E.M." (Stonebroom). — 3 h.p. Lincoln-Elk clutch model.

"R.E.H." (Stafford).—Binks carburetter, easy starting, and steady pulling with 7-8 h.p. motor cycle and sidecar, reliability and consumption.

"G.S." (Ilford).—Armstrong and Bowden gears with 3½ h.p. and sidecar.

"F.J.S." (Willesden).—P.M.C. motorette for all-weather use by commercial traveller.



The Ponette quadcar with M. Averies Ponette at the wheel. This miniature four-wheeler has a water-cooled single cylinder engine of 7 h.p., and is of smart appearance. It was described in detail in our issue of November 30th, page 1331.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

How to Exhibit a Badge.

Sir,—Referring to the paragraph recently published on position of an A.A. badge on a motor cycle, I suggest that the front number plate is the best place for the badge, as it is quite clear of other things, is illuminated by the lamp, and is easily fixed with two bolts through the number plate. P.

The Manufacturers' Union and Misleading Advertisements.

Sir,—The Advertising Committee of this Union are aware of the damaging effects to the trade, and particularly to the retail trade, of misleading cycle and motor cycle advertisements in the "Wants" columns of the daily press, in which cycles are falsely described and fictitious values quoted, whereby the public are deceived.

The Advertising Committee will be much obliged to receive instances of such misleading "Wants" advertisements from any cycle agent or interested party, with a view to vigorous measures being taken to bring the offending advertisers to justice.

Communications should be addressed to the Secretary, Masonic Buildings, Coventry. ALF. BEDNELL.

Winter Runs.

Sir,—In answer to Mr. Kimber's enquiry in the issue of January 25th, regarding the condition of riders of A.C. Sociables and similar machines in the Exeter run, I think my experience may be of interest. Although not a competitor in the Exeter run, I undertook quite as bad a journey from the point of view of rain, snow, and filthy roads.

I took delivery of a new machine at the works of Messrs. Auto-carriers, at Thames Ditton, on January 6th, and I may say that when I arrived in the morning the finishing touches were being put to it. Taking it straight from the finishers' hands, I set out on my 200 miles journey to Hull. Now, although it rained nearly the whole of the way, my wife and I were able to keep clean, dry, and comfortable without the aid of waterproofs or any hideous disguise. We also had to traverse several yards of water near Peterborough owing to taking the wrong road in the town. The mudguarding is splendidly carried out, and it is surprising how clean the machine keeps. I also think it a splendid testimony to the care of the manufacturers that the machine did the whole journey without a single adjustment.

With best wishes for the prosperity of your interesting and useful journal, ROBERT AKESTER.

Freeing of Seized Pistons—Drastic Methods.

Sir,—The following may be of interest to your numerous readers. A motor cyclist in Ceylon, who has not been one for long, recently started on a twenty miles ride. After doing some two-thirds of it he noticed that the machine was beginning to run somewhat stiffly, and investigation showed that his supply of lubricating oil had become exhausted. As there was no chance of replenishing his supply, he decided to get as far as possible under power. When he was within a mile or two of Matara, his destination, the piston finally struck work, and he had to push in the remainder of the distance. It then only remained for him to free his piston.

Knowing that heat expands and cold contracts metal, he wired into Colombo (100 miles) for a cwt. of ice. This arrived the next day, but in the excitement of the moment the motor cyclist got a little mixed, and having carefully packed the outside of the cylinder with the ice, poured boiling water on the top of the piston *viâ* the compression tap. This not having the desired effect of freeing the piston, he had to devise a fresh method. Remembering having seen that a mixture of kerosene oil and baking powder had a rising effect he decided to apply this principle, and obtaining the necessary ingredients, poured them into a crank case through the drain tap, and anxiously waited for the piston to be forced up the cylinder. Strange to say, not even this drastic treatment caused the refractory piston to shift, and it became evident to the owner that something vigorous must be done. The piston could not be made to rise, but possibly it could be induced to descend. The question was, by what means.

After mature consideration, he procured a revolver, and, removing the compression tap, discharged six rounds of blank in rapid succession on to the top of the piston, which remained in exactly the same position. It now became evident that this was a particularly obstinate case, and he reluctantly had to admit defeat, and sent the machine into Colombo for further treatment. C 663.

Diyatalawa, Ceylon.

A Method of Truing Worn Pulleys.

Sir,—The troubles of belt owners have been aired with such unfailing regularity that we have decided to give our experience of similar troubles, the primary cause, and its obvious remedy. New machines leave the works equipped with correctly angled pulleys of, say, $\frac{5}{8}$in., $\frac{3}{8}$in., $\frac{7}{8}$in., and 1in. gap. The troubles for the first few thousand miles are practically nil, but once real trouble sets in the amateur condemns belts as unreliable, and sighs for the chain drive as the only solution of the difficulty. We look minutely into the matter and find that the belt rim is, practically speaking, still $\frac{7}{8}$in. in section and of correct angle, whereas the engine pulley is now $\frac{15}{16}$in. and of most distorted contour, often developing a distinct ridge. Slipping takes place, and the now gritty belt allows rapid wear to supervene by reason of its grinding action being as it were automatically exaggerated the longer it runs. A careful examination of the belt reveals (1) incorrect angle, and (2) shrinkage of $\frac{1}{16}$in. or more, due to the combined effect of stretch and wear. This gives us a $\frac{13}{16}$in. belt running in a distorted $\frac{15}{16}$in. pulley, a difference of $\frac{1}{8}$in. True, there is still a wedging action, due to the belt following its wear in the pulley, but a wedging drive is detrimental and results in proportionate absorption of power. Ninety per cent. seek to overcome the difficulty by either ordering a new belt or skimming the pulleys. The latter method is temporarily satisfactory, but results in a lowered gear, and in quite a short time the belt naturally finds the bottom of the pulley. A new belt of the original dimension ($\frac{7}{8}$in.), being of correct angle, is liable to slip in the untrue pulley, and truing the pulley as before stated is unreliable. Of course, a new pulley would speedily rectify matters, but if motorists would only have their pulleys skimmed up true and get a belt made $\frac{1}{16}$in. larger than the original they would be astonished at the result.

To restore distorted pulleys to their correct angle without expense or detaching proceed thus: Jack up cycle on stand and detach belt only while engine is hot. Get a friend to sit or lean on the saddle to keep machine rigid. Place a wood or other block and an old file (preferably flat) near at hand. Start up the engine by placing belt loosely over the pulley, drawing taut, and then smartly pulling the underside with the left hand, the right hand retaining the tension of the top portion. The engine having started up, place the block close up to the pulley, so that the top of the block is about level with pulley-shaft. Turn the file edgeways, using the cutting edge, and in five minutes both faces can be perfectly trued *in situ*. COMET CYCLE CO.

Engine Position.

Sir,—With regard to the article by "B.S." on the above subject in your issue of the 25th ult., I beg to point out that his remarks on distribution of weight are entirely wrong, and are not borne out by experience.

Equal distribution of weight does not minimise the tendency of a motor cycle to skid. In fact, the greater the load on the driving wheel, the less the liability to skid, and the consequent longer life of the back tyre.

That Scott machines hold up on grease is a fact, but it is not connected with the inclined engine, nor the forward position of same, but is due to the weight distribution, which in the first place is lower down than on a standard machine, and, secondly, the gear box, chain drive, petrol tank, magneto, etc., are all weighted on the back wheel, and consequently there is a greater proportion of weight on this wheel, giving the above result.

The machine I manufacture, which has been illustrated in your paper on a previous occasion, is a 2½ h.p. model, and the engine is carefully slung nearer the back wheel than the front, with the marked results of non-tendency to skid, and long life of the back tyre.

All the two-speed machines are much steadier in grease, owing simply to the greater weight on the driving wheel.

Another big factor in the behaviour of a machine is the rider. I have ridden behind Jack Marshall on a T.T. Triumph with plain round Dunlop tyres, through twenty miles of treacherous roads and many miles of tramlines, and his back wheel has not shown the slightest variation from its true track. REG. SAMSON.

Lubrication Systems.

Sir,—"Amateur" falls into a common error in assuming that there is any "oil drag" with inside flywheels. If an abnormal supply of oil is given to the engine, some little drag might take place, but this could not be sufficient to affect materially the power developed.

For instance, when a charge of oil is injected on the road most engines will accelerate; if oil drag of any magnitude occurred, one would naturally expect the engine momentarily to slow down. What actually happens is that the oil in the crank case is taken up by the flywheels at starting; as speed increases, this is scattered over the internal parts of the engine which, offering a large area, retain a considerable quantity of oil. At highest engine speeds the oil is broken up into minute particles and forms a miniature fog or "Scotch mist" inside the case. No further oil is taken up by the flywheels until a sufficient quantity has drained down the sides of the crank case to touch the flywheels again. A moment's thought will show that under normal conditions very little oil indeed will remain at the bottom of the case for the flywheels to run in.

We submit that the external flywheel engine for motor cycle purposes has greater disadvantages than the imaginary power loss caused by oil drag on the internal flywheel engine.

We are quite in agreement with "Amateur" on the other matters he mentions. Our experience is that large area plain bearings are now being demanded in preference to the existing types of single row non-adjustable ball bearings.

Generally speaking, we believe the buying public are now beginning to realise a fact that was proved years ago, viz., that this type of bearing is only suitable for light loads at high speeds. THE CONDOR MOTOR CO.

Sir,—Your correspondent, "Amateur," raises some interesting points on lubrication, etc. There is no doubt, as he says, that internal flywheels fling the oil away from the big end bearing, but not only this, if a sufficient level of oil were kept in the crank case for the big end to dip into, the flywheels would drench the cylinder with an excess of oil, and rapid carbonisation would result. It is a most difficult matter in a motor cycle engine to give both cylinder and bearings their required amount of oil; the quantity in the crank case (about one pumpful) sufficient for the cylinder is totally inadequate for the bearings. The direct system of lubricating the gudgeon pin and big end by an oil pipe to the cylinder wall seems a step in the right direction.

It is certain, in my opinion, that motor cycle engines will in future have to be either water-cooled or properly lubricated by a definite system, as on cars. The modern high compression single develops so much heat that its bearings simply cannot be expected to stand the strain.

I do not think there is much in what "Amateur" says about the friction of internal flywheels in the oil. Turning the engine round by hand is all very well, but what about two or three thousand r.p.m.? At running speeds the flywheels will not be ploughing their way through a sump of oil; they will be flinging it about. Not only this, but crank cases get hot enough to reduce the viscosity of even a heavy oil enormously.

One point on lubrication I have not seen mentioned is this. In modern side by side m.o.v. engines the valve pocket capacity is large, and consequently the piston has to come very high up in the cylinder in order to get a sufficiently high compression, and in my engine (1911 type) the piston pushes the oil over into the valve pocket and all over the valves, stems, and guides. A domed piston should be an improvement, as it would not need to come so high up in the cylinder. An oily valve was unknown on my previous machine (a.o.i.v.), as the piston did not come up level with the valve pocket.

I agree with "Amateur" *re* plain bearings. During seven years I have never yet had a ball bearing engine, and do not want one. It is interesting in this connection to note that one firm, Messrs. J. A. Prestwich and Co., fit and recommend plain bearings in their engines, using ball bearings in the racing engines. A friend of mine ordered plain bearings on a machine in which plain or ball bearings were fitted as desired, an extra charge being made for the latter. Unknown to him, the machine was delivered with ball bearings, and this was only discovered when, after nine hundred miles, there was considerable play in the mainshaft. The makers then fitted plain bearings free of charge!

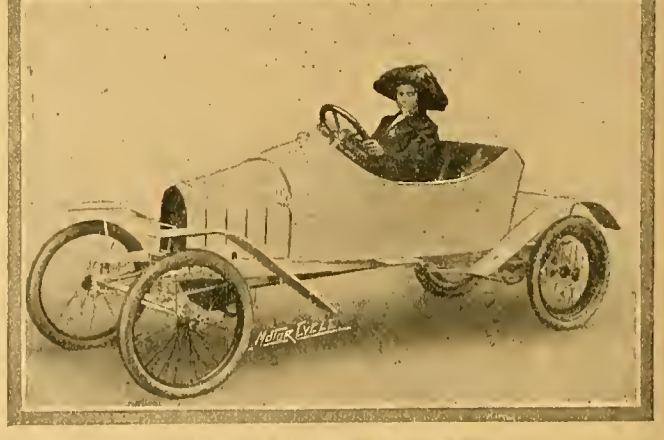
S. H. CROW.

Delivery of New Machines.

Sir,—If my own experience may be taken as generally representing that of others there must be, I am sure, a large sum total of discontent among your readers. Shortly after the Olympia Show I placed an order with a prominent firm of manufacturers for a machine costing between £60 and £70, after being assured by their manager in London that delivery could be effected within a fortnight, or, at the very outside, three weeks. As a matter of fact, the machine is not delivered yet, and not only that, but all I can obtain in the way of information is an offhand suggestion that it "must" come to hand within a few days.

The firm has locked up something between £15 and £20 of my money, and I have up to the present nothing but empty promises to show for it. Those firms who are enterprising enough to be ready with their machines directly the year turns are the ones to support, and I consider it amounts to rank dishonesty to take a man's money and then keep shilly-shallying about for weeks and denying him any satisfaction in the matter of delivery.

It would, of course, be another thing altogether if from the very first one were told that delivery before February, for instance, were impossible, but to quote December definitely, knowing, as they must have done, that such a thing was impossible is, I think, to say the least of it, a contemptible and dishonest action. DISGUSTED.



A fair driver of a 1912 model L.M. quadcar.

Clean Counties.

Sir,—In your last issue you ask for information about a trap between Trumpington and Cambridge in 1911.

On Coronation Day, riding from London to Ely, I found a warning on the A.A. bulletin board about a trap on that stretch of road, but, personally, I passed through it at twenty-two miles an hour in safety.

K. T. GEMMELL.

Two-stroke Engines.

Sir,—Referring to the article on two-stroke engines in last week's issue, we would point out that, although we "do not claim any phenomenal speed" in our catalogue, this does not imply that our engines cannot be speeded up; 3,000 r.p.m. can be obtained without the slightest difficulty. As a matter of fact the machine that ran in the Gloucester Trial easily does forty miles per hour on a gear of 4¾ to 1 (*i.e.*, engine speed of 2,500 r.p.m.), and this speed was attained within the first two hours of the machine's life on the road.

We cannot altogether agree with the writer's remarks re the relative benefit of three and two port engines; practice shows the two port to be more efficient, and further there is considerably less liability of crank case firing—in fact, although we fit a relief valve to our crank case, we find it is rarely required, and then only in the case of extremely careless driving or using too weak a mixture. With a correctly designed engine back firing does not occur from any other cause.

Although we have made thousands of stationary engines, we have never yet resorted to gauzes which we notice seem to be essential in some three-port engines. We congratulate the writer on his very lucid article, but should like him to have some practical experience with our engines, and would also state that his drawing is not a correct illustration of our patent inlet valve. STUART TURNER, LTD.

[The sketch of the inlet valve referred to in the above letter was purely diagrammatic, and the valve was merely inserted to show its position.—ED.]

Multi-pole Sparking Plugs.

Sir,—Under the above heading, Mr. W. J. Lancaster writes that he has carried out some experiments in which he has used the Lodge double-pole sparking plugs in connection with the Bosch magneto, and states that up to date he has not had any trouble with the magneto. This, we quite think, is true, as he admits that in order to get easier starting he has had to reduce the gap between the two points inside the combustion chamber to a space so small that the points are almost touching. This in itself is an admission that the magneto is not capable of doing the work imposed upon it, otherwise it could fire two gaps of the normal opening as does the Bosch magneto, which is designed and manufactured for two-spark ignition, and which is capable of effecting such ignition without calling into use special types of plugs.

With these facts in view, where is the necessity to experiment with any other apparatus, when the Bosch Magneto Co. issue tested and guaranteed reliable articles for the purpose.

The letter written by Mr. W. J. Lancaster only emphasises what we have previously stated, and we further wish strongly to recommend owners of magnetos, whether Bosch or other makes, designed for single spark ignition not to impose upon them double the work, as by this means satisfactory results are not obtainable, although it may be possible slightly to improve upon the effect which is produced by single ignition; in any case, nobody can hope to produce the effect of the two-spark ignition.

THE BOSCH MAGNETO CO., LTD.
ARTHUR E. BENNETT, technical manager.

Sir,—With reference to the above, I first tried the Lodge plugs about two years ago, chiefly with a view to getting extra speed and power for that year's T.T. I used, at one period, as many as three plugs in one cylinder with a marked increase in power and apparently no detriment to the magneto, which was a Simms. I have never used these plugs with a Bosch magneto, but I have no doubt that the Bosch Company will admit that if a Simms magneto will stand three plugs in series, a Bosch should also be able to stand the strain.

With regard to ease of starting, I found that in my case (a 3½ h.p. Norton) it did not render starting any more difficult, being able to start my engine from cold with the three plugs in series with the first pull of the back wheel. I did not, however, use the plugs in the race, as I found the vibration at high speeds was too much for the construction of these plugs, but I have no doubt that they would give excellent results under ordinary touring conditions.

P. BREWSTER.

Sir,—In the issue of January 4th, a letter appeared asking both the Bosch Co. and ourselves to state whether the use of the Lodge double-pole plug does or does not have any ill effect on the magneto. We at once replied in the following issue, saying that we were anxious to prove clearly to readers of *The Motor Cycle* that the extra power obtained by the use of our double-pole plug was in no way secured at the expense of the magneto, and explaining that the best possible way we could convince them was for us to ask any users of both to be so good as to report their actual experiences.

In each of the three issues which have been published since January 11th, a letter has appeared on the subject, each from a different writer, all being users of both Lodge double-pole plugs and Bosch magnetos; and the report in every case has been exactly what we had anticipated, viz., that not the smallest difference is made to the magneto, while the power of the engine is considerably increased.

Not a single letter has appeared uttering a word to the contrary, so that we think this correspondence should finally settle the question and put an end to the quite unfounded suggestion that a double-pole plug might throw some detrimental strain on the magneto.

LODGE BROS. AND CO.

War Office Test at Brooklands.

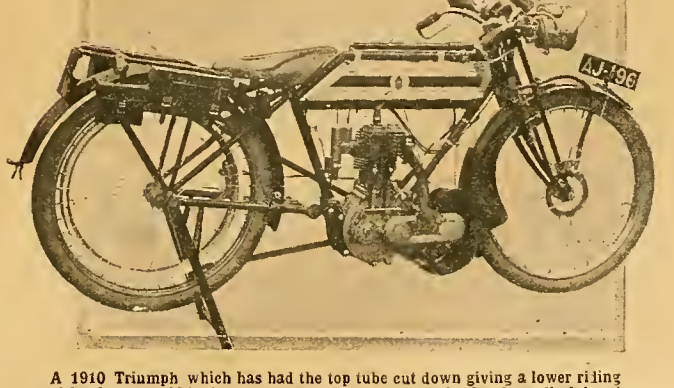
Sir,—I notice in your report of the War Office test at Brooklands you state that the Zenith was the only machine which apparently satisfied the War Office officials.

I was rather surprised to read this, as according to the times in your report the Douglas was the only machine that complied with the War Office requirements which are as follow: Machines with about 500 c.c. 45 m.p.h. and machines with about 350 c.c. 40 m.p.h. W. W. DOUGLAS.

Sir,—Referring to your report of the War Office tests at Brooklands, I should like to point out that I was officially timed by a War Office official to accomplish the two laps in approximately 3m. 50s. per lap. Further, I did not run into the bank whilst ascending the test hill, but in attempting to turn round after having started up the engine.

It will be noticed that no machine accomplished a speed of 45 m.p.h. This was due partly to the low gears in use, but more particularly to the atmospheric conditions. It was foggy and intensely cold, and carburation was very much affected at high speed. HUGH GIBSON.

[We offer our apologies to Messrs. Douglas Bros. for the error. It is quite true that the War Office standard set for engines up to 350 c.c. was 40 m.p.h., which average the Douglas machine ridden by G. L. Fletcher handsomely exceeded. No times having been announced officially, it is impossible for us to confirm or deny Mr. Gibson's statement. His claimed speed is 42.5 m.p.h.—ED.]



A 1910 Triumph which has had the top tube cut down giving a lower riding position by about 2½ inches. Of course the tank capacity has been diminished as a result.

Silence.

Sir.—I notice a good deal of talk going on at present about noisy m cycles. About five years ago I made a silencer on the principle of cooling the hot gases. However, after it was used I found it was even better than I expected, for it not only cooled the gases, but it did away with practically all pressure in the silencer. The principle will be best understood from the accompanying



sketch. The length of the silencer is twice the length of the engine stroke, and the diameter is the same as that of the cylinder. One-eighth holes are bored in the air tubes, so that the total area of the combined holes equals twice the area of the exhaust pipe. Better results are obtained by only having $\frac{1}{16}$in. holes, but they are rather apt to choke up, which means taking the silencer adrift—a simple operation done by removing nuts A. After using this silencer for five months, the cylinder was removed to be scraped, but it was found there was practically no deposit to scrape, and the engine never overheated, even under most trying conditions. H. D. McRAE GALLANDAY.

The Evolution of Transmission.

Sir,—I was surprised to see published in your issue of February 1st a personal attack on my veracity and motives signed by initials. In common fairness, I must ask you to explain that my letter to *The Motor Cycle* was not published *in extenso*.

As regards the details which "F.R.H." states "it would be interesting to know," they are as follow :

1. The chain was a Hans Renold.
2. The car was a single-cylinder 9 h.p. Cadillac two-seater weighing 12½ cwts.
3. The stone was a finger-shaped flint about 1in. in diameter and 3in. long.
4. The differential fitted, as in all this pattern of central drive Cadillac, was on each side of the back sproeket wheel.

Your correspondent suspects that I have an axe to grind. This I freely admit, and, further, that I have been for over thirty years grinding at it. It is the progress of cheap, efficient, and safe road transit

Since my letter was published, I have received a number of queries from interested readers, several forwarded by the courtesy of your staff. If I have failed as yet to answer all these, perhaps the writers will forgive a busy country general medical practitioner, whose daily round is rarely less than thirty-five miles, and who is exceptionally busy at the present time. Indeed, during the last snow, on one day, when the whole district was covered some inches deep with a semi-solid freezing mixture, I rode twenty-eight miles on my little 2¾ h.p. pedal-less machine, fitted with a rubber belt (because I had not a leather one in my possession). Although, naturally, there was belt slip, still it was not so bad as to prevent my climbing the 1 in 8 hill out of my village.

I purpose taking no further part in this discussion at present, as I have given honest personal experiences, signed my full name, and defy anyone to prove interested motives. CHAS. S. PATTERSON, M.B., M.R.C.S.

The English-Dutch Trial.

Sir,—I should like to put forward a suggestion for selecting the English team of motor cyclists who are to take part in the trial with the Dutch team in August. Why not throw the selection of the team open to readers of *The Motor Cycle*? I consider a good idea would be to enclose a voting form in one week's issue of the paper, inviting readers to state, by placing a cross against the names, whom they consider worthy to uphold the reputation of the old country. It would undoubtedly create enthusiasm, and cause the trial to be followed more closely by the supporters of *The Motor Cycle*. W. COOPER

Sir,—A word about the choosing of competitors for the English-Dutch trial. I think it may be assumed that all the riders who have entered are reasonably skilled, and so the choice could safely and wisely be made from the point of view of machines, and not of riders

In each class the machines chosen should not be only not of the same make, but not even of the same type. For example, in the 500 c.c. class, if three machines are to be chosen, choose, say, a Triumph or some other standard 3½ h.p. of repute, a P. and M., and a Scott. These three machines represent three distinct types.

I think this method of choice would give a team which would be as fairly representative as possible of English machines of all types.

As in the choice of a rider for the popular 3½ h.p. class there would be many riders to choose from, if the choice was not obvious you could choose by their former successes in important trials. LODGE PALMER SCOTT.

Experiments with Hydrogen Peroxide.

Sir,—In answer to your correspondent "O 5298," I should like to say that the burner I used in all my experiments on hydrogen peroxide was one of Bray's fourteen litre cycle burners, which admits of air being injected into the flame after the gas has left the burner. The gas outlet in this type consists of two fine holes which are bored obliquely in the steatite top of the burner. I believe the "Roni" burner, which has a slit instead of a hole, allows a certain amount of air to mix with the gas before leaving the burner itself. Modern burners admit of a mixture of air and gas being used.

There is, of course, a definite proportion of air and gas which will give the highest illumination power with a given burner, and those which inject more or less air than is required to satisfy this ratio are not so efficient as those allowing the theoretical mixture to be used. A. RENFRED MYHILL.

SUMMARY OF CORRESPONDENCE.

"A.K." writes in favour of rubber belts for transmission purposes, and instances a round top 1in. Dunlop belt which drove his 1909 twin Rex and sidecar a distance of 2,700 miles since last August and is now pulling well; the belt was shortened only three times in that distance.

J. Stanley White writes: Messrs. Parke Davis and Co. put up a solution of hydrogen peroxide which I find, from actual experiment, has remarkable keeping properties, and does not appear to lose its strength, even if the bottle should inadvertently remain uncorked. Its stable properties are stated to be due to small quantities of acetanilide, and the solution is as near as possible neutral.

Will "U 32" send his name and address to the Editor?



T. F. Lucas, who carried almost all before him at the Ceylon M.C.C. hill-climbs on his T.T. Triumph (see page 103, Jan. 20th).

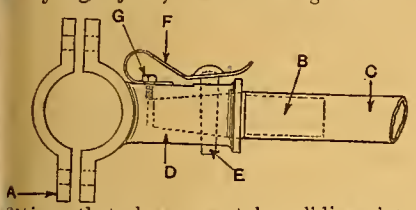
AMONG THE ACCESSORIES.

Quickly Detachable Sidecar Fittings.

We illustrate herewith a detachable coupling for sidecars. The patentee is Mr. J. Wakeman, 32, Blenheim Road, Moseley, Birmingham, who writes as follows:

"I have a set attached to my Rudge motor cycle and sidecar and I find them quite satisfactory.

"The great point I claim is that the couplings being made with a taper socket and plug are very easily connected and disconnected, and also they make a perfectly rigid joint, much more rigid than a



fitting that has one tube sliding into another, and also it allows more latitude when a sidecar is being fitted, as the couplings centre themselves as long as the plugs just enter the sockets.

"The following short description will make the principle quite clear:

"The sketch shows the down tube bracket A, with plug B, which is brazed into sidecar tube C, fitting into socket D, and held in position by a taper pin E, which is prevented from shaking out by the spring F. To take adrift, all that is required to be done is to revolve the spring F, which is pivoted on screw G, to one side, and the taper pin E can be readily withdrawn, and the conplings then fall apart. The spring F is cupped where it makes contact with the pin E, therefore it cannot vibrate out of position."

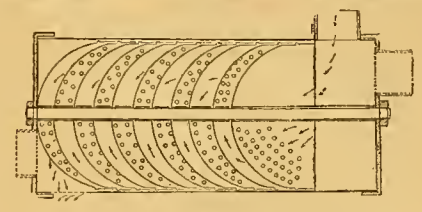
The Cairns Device.

Messrs. J. Cairns and Company, Grimshaw Street Works, Preston, have introduced one of the most ingenious sidecar fittings we have yet seen. The accompanying illustration, figs. 1 to 4, shows the device clearly. The tube A, fig. 1, forms part of the sidecar frame, while the clip B is bolted on to the bicycle frame. The bolt C, fig. 2, is provided with two arms round which the first and second fingers are placed. When it is desired to detach the sidecar all that is necessary is to place the thumb on the bolt D, and lift the spring bolt with the first and second fingers. This allows the bolt to be withdrawn from the hole in the portion F, and to slide down the inclined plane. To place the sidecar in position it is only necessary to push the joint straight on to the portion F, when the bolt slides up the inclined plane and drops into the hole. It is then securely fastened, but to make it absolutely rigid and devoid of all shake, it is necessary to screw the bolt E up against the spring with the fingers.

Fig. 4 shows the saddle-pin bolt and the diagonal sidecar stay. It will be noticed that the saddle bolt G has an inclined plane on its slotted portion. This engages with the shoulder on the bolt H. Here, again, if pressure be exerted by pressing the bolt H against the inclined surface of G engagement will be made automatically, and, in the same manner, if the nut at the bottom of the bolt H be screwed up a perfectly secure joint is made. The joints appear to be well-made and are certainly most ingenious, being one of the quickest forms of detachment which has yet been brought to our notice.

A New Clair Silencer.

The accompanying drawing shows the latest pattern of Clair silencer, sold by Messrs. J. C. Lyell and Co., 113, Great Portland Street, W. It will be noticed that, while the outward form is neater than the old type, the original feature



of the Clair patent—the nest of cups—is retained. The new model, which will be ready for delivery in three or four weeks' time, will be made in different patterns, with the inlet in various positions, as shown by dotted lines in sketch, so as to suit different types of single and twin-cylinder engines. The new model is neat and strong, and, moreover, possesses the advantage of being easily adapted to various standard makes of motor cycles.

CAIRNS' QUICKLY DETACHABLE SIDECAR FITTINGS.

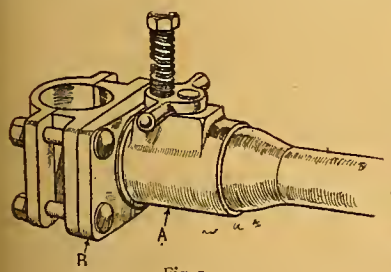


Fig. 1.

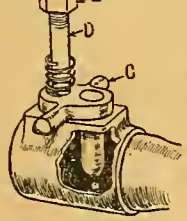


Fig. 2.

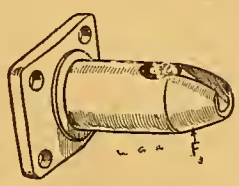


Fig. 3.

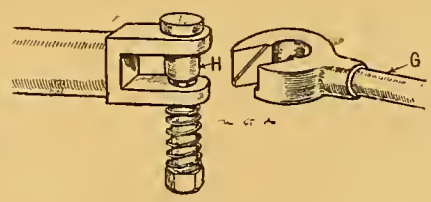


Fig. 4.

DECARBONISING MOTOR CYCLE CYLINDERS.

WE have already referred in these pages to the method employed by the Internal Combustion Engine Cleaning Co., Ltd., for removing carbon deposit from the cylinder of a petrol engine.

One day last week Mr. Sidney N. Fry, who is representing the firm in the Midlands, demonstrated to us the ease and speed with which a very dirty engine could be made absolutely clean without removing the cylinder. The apparatus employed consists of an oxygen tube and a flexible metallic connection from the oxygen tube to a short length of fine metal tubing which can be inserted through the valve cap and moved about all around the exhaust port and in the combustion space. The piston is, of course placed on the top of the stroke and both valves are closed.

Meeting of the Oxygen and Carbon.

The moment the oxygen begins to play on the surface of the carbon and a lighted taper is held inside the combustion head the meeting of the carbon and oxygen causes a roaring flame to issue through the orifice usually covered by the valve cap. Mr. Fry explained to us that the first flames were produced by the burning oil which had not quite carbonised on the piston head and cylinder. Soon the flames died down and incandescent particles of the carbon commenced to detach themselves, and were forced out by the rush of the combined flames of the burning oxygen and carbon. In a few moments both piston and cylinder were quite clean right down to the metal, and there being no longer any carbon remaining, the oxygen refused to ignite except when grease from the lighted taper was dropped on some portion of the hot valve port. One would be inclined to think that great heat applied in this way should have a detrimental effect on the exhaust valve and piston, but strangely enough the carbon deposit acts as an insulator for the metal until it is burned off, when there being no more carbon remaining the flames die out. Naturally the metal becomes fairly hot, but even immediately after the process is concluded it is possible to touch the metal with the bare hand.

Licensing Arrangements.

The process is known as "Cylclean," and the firm whose address is 3, London Wall, London, E.C., are licensing garages in each town of the United Kingdom, and providing them with the necessary outfit to enable them to undertake the cleansing of any sized cylinder.



TIME TO LIGHT LAMPS.

Feb.	8th	... ...	5.58 p.m.
,,	10th	... ...	6.1 ,,
,,	12th	... ...	6.5 ,,
,,	14th	... ...	6.9 ,,

Leicester Motor Cycle Show.

The above show was opened yesterday (Wednesday), and will close next Saturday. It is being held in the Y.M.C.A. Hall, London Road.

The Rights of Motorists.

At its last meeting the Legal Committee of the R.A.C. considered a report of a case relating to damages sustained by motor cyclists on freshly-tarred roads, in which report some strong remarks were made on the rights of motorists by the County Court Judge before whom the case was heard. It has been resolved to draw the attention of the Lord Chancellor to the nature of these remarks.

Another A.C.C.F. Hill-climb.

The Auto Cycle Club of France has decided to run another hill-climb, on the 25th inst., on a hill called Montenglaust (Coulommiers), which is about thirty miles from Paris in an easterly direction. The hill is on an unused road, and has a gradient of 1 in 9. It is best reached from Dieppe or Boulogne by taking the direct route to Compiègne. The competitors will race over two kilometres, one kilometre of which will be the hill-climb. The event is open to motor bicycles, tricars, and voiturettes.

Class 1.—255 c.c.

Class 2.—300 c.c. for singles, 350 c.c. for twins.

Class 3.—500 c.c. for singles, 600 c.c. for twins.

Tricars.—750 c.c. for singles, 1,000 c.c. for twins.

Voiturettes.—Under 750 c.c. for singles, 1,000 c.c. for twins, and 1,250 c.c. for four cylinders.

Two Important Cases.

In the High Court of Justice recently (Jones and another v. Lees), Justices Hamilton and Banks held that if a horse escapes on to the highway owing to a defective hedge and collides with a cyclist, the owner of the horse is not liable in damages to the cyclist, for at common law the owner or occupier of land adjoining a highway has no duty to keep his "inoffensive" domestic animals, or animals not known to be dangerous, off the highway. This seems pretty definite, but should the owner of an animal know the animal to be dangerous the law would be different. Another case decided in the Court of Appeal was somewhat similar. In Ellis v. Banyard, Lord Justices Vaughan Williams, Buckley, and Kennedy, held that if cattle stray on to the highway owing to a gate being left open, there being no evidence of who left the gate open, the owner of the cattle, who was also the owner of the field and gate, cannot be mulcted in damages caused to a cyclist through collision with the cattle. (Reported in Law Notes of January, 1912.)

FUTURE EVENTS

Feb. 17.—Sutton Coldfield A.C. Open One Day Trial.
Mar. 2.—A.C.U. Open One Day Trial.
,, 23.—B.M.C.R.C. Race Meeting.
,, 23—Herts. County A.C. Open Quarterly Trial.
,, 30.—Derby and District M.C.C. Open Hill-climb.
Apl. 5-8.—N.W. London and Herts. County M.C.C. Joint Trial and Open Hill-climb (Yorks.) and Ladies' Competition.
,, 8.—Westmorland M.C.C. Open Hill-climb on Brigster Brow
,, 13.—Oxford M.C.C. Open Hill-climb

SPECIAL FEATURES.

A Week-end on a Sociable.
Definition of Quadcars and Runabouts.
Inter-club Trial in Surrey and Hants.

Entries for the T.T. Races.

The following provisional entries have been received for the T.T. Races, to be held in the Isle of Man, June 28th and July 1st: C. R. and H. A. Collier (Matchless), both events, and S. A. M. Witham (three Blumfield machines). The four following have entered, but have not stated the machines they intend to ride: J. Gibson, J. T. Bashall, Harry Bashall, and D. C. Bolton.

What Some People Want.

A letter in the current issue of *The Autocar* from Mr. H. F. T. Morgan, the maker of the Morgan runabout, explains why it is inadvisable to make a motor cycle type of runabout with too luxurious a body. He says: "A heavy body entails either too little speed or too large an engine. Some people when purchasing insist upon luxurious and heavy seating. Strange requirements are sometimes suggested. I have been asked to fit a Silent Knight engine to the Morgan runabout."

C. R. Collier Declines American Offer.

We understand that C. R. Collier has received a definite offer from America guaranteeing him £20 a week in addition to prize money if he would take his Matchless motor cycle to the States and try conclusions with de Rosier and others on some of the best racing tracks across the water. The dates mentioned in the offer are May and June, but as the dates of the Tourist Trophy Races have been fixed for June 28th and July 1st, Collier has refused the offer so that he may be able to race in the Isle of Man. Bravo Collier!



Members of the South Birmingham M.C.C. who, in spite of the temperature, turned out in large numbers last Saturday on the occasion of the opening run.

M.C.C. Continental Tour.

The committee have the intention of arranging a tour in France from about the 10th to 18th August, provided sufficient support be forthcoming. It is expected the total expenses will not exceed about £10 per head.

The Motor Cycle Manufacturers' Union.

Mr. H. G. Burford having resigned his position as general manager to Humber, Ltd., has also resigned the post of chairman of the committee of the Manufacturers' Union, and his resignation has been accepted. Who will be the new chairman?

Prizes in the Six Days.

The Auto Cycle Union has been pleased to accept our offer of two silver cups as *The Motor Cycle* special prizes in connection with this year's Six Days' Trials. One of these will be awarded for the best performance by an amateur, and the other for the best performance by a trade rider, the decision to rest as usual with the judges.

List of Records.

For convenience of reference and for hanging in the office, we have had a list of British motor cycle records mounted on cardboard. We have still a limited number left, and any reader desiring a copy has only to send the postage, twopence. Agents and depot managers should find the list particularly useful.

Exceptions prove the Rule.

"N.S.U." writes regarding motor taxation, and points out that although it is the law that the driver's licence must be taken out in the licencee's resident county, his case is an exception that proves the rule. Although living in one of the Welsh counties a licence to drive was issued to him by another Welsh county authority. It is the first time we have seen a driving licence issued by any county to a motorist not resident in that county.

Increasing the Engine Power.

Before a good attendance of the A.C.U., on Thursday evening last, Mr. W. G. McMinnies read a paper entitled "Speed and Power," illustrated with lantern slides. Some interesting devices for increasing engine power were shown, such as air scoops to force the charge to the engine, increasing the power by the use of the compression of the crank case to assist the petrol flow. Devices for increasing the freedom of the exhaust included a pipe by which the gases could be drained into the crank case. Another showed the engine modified so that, besides the ordinary exhaust valve, it had another overhead exhaust valve. In the case of cylinder ports at the end of the piston stroke it was pointed out that, provided the piston was of sufficient length to cover the port when at the top of the stroke, no noticeable leakage of oil occurred. Another device intended to assist in cooling the engine consisted, in principle, of utilising the crank case compression to force cool air on to the exhaust valve. After the paper there was an interesting discussion, in which, among others, Messrs. Brooker, Karslake, Rhys, Cooper, Bashall, and Oliver took part, and many pertinent questions were raised, to which the lecturer afterwards replied.

Police Traps.

The Metropolitan police are very active in the neighbourhood of Kingston. Traps are frequently worked between Putney and Kingston, notably from the horse trough to the farm house at the foot of the hill leading from the cemetery, from Beverley Brook onwards for one furlong, working at night, and at the top of Kingston Hill and on the hill itself.

Motor Cyclists go Skating.

The bright frosty weather last Saturday was bracing, and added proof to the utility of the motor cycle. London streets were thronged with motor cyclists with skates strapped to their luggage carriers, seeking the numerous sheets of water round the Metropolis where skating was in vogue. We had a most enjoyable spin down the Portsmouth Road, which was in fine condition, and at the Hut, Wisley, there was a huge gathering of motor cycles and cars. Hal Hill, F. Thomas (the rider of the famous G.O.K.), and the brothers Bashall were disporting themselves on the ice, and enjoying the bright sunshine. Our mount was a 1911 3½ h.p. clutch Triumph, kindly placed at our disposal by Messrs. Godfrey and Applebee. It pulled splendidly, but on the return journey we experienced much lamp trouble, owing to the water freezing in the generator.

The week-end saw several well-known members of the M.C.C. taking advantage of the recent few days' severe frost. They journeyed down from town by motor cycle to Ruislip Reservoir. There a splendid stretch of ice awaited them, and skating was in full swing. Amongst the number we noticed were Messrs. Southcombe May, B. Marians, W. Cooper, and E. B. Dickson.

Coventry and Warwickshire M.C. Eighth Annual Dinner.

The above club's eighth annual dinner, which was held at the Masonic Hall, Coventry, on Friday last, was a great success. About 120 members and friends assembled, and nearly £200 worth of prizes were distributed.

Sutton Coldfield A.C. Open Reliability Trial.

Fifty-seven entries have already been received for the above trial, which will take place on the 17th inst. Entries close on the 12th inst., and a list of these is published on page 152 of this week's issue. The regulations, route, and other particulars were given last week (see page 125). The start will be at 9.30 a.m. from the Gun Barrels Hotel, Bristol Road, Birmingham.

Motor Cycle Sledging.

On the snow bound roads south of London at the week-end we saw two motor cycles, one with a sidecar, each drawing a sledge. The drivers, Messrs. M. Campbell and D. Lavender, of the Wanderers M.C.C., had one or two spills which added to the fun. On the exposed parts of the road at Cudham the drifts were so heavy as to stop motor cycles, and even cars were brought to a standstill.

Misleading Advertisements.

The Cycle and Motor Cycle Manufacturers' and Traders' Union asks us to draw readers' attention to the letter which is published in the Correspondence columns in this issue regarding the insertion of misleading advertisements in the "Wants" column of the daily press. Agents and others interested are requested to inform the secretary, Mr. Alfred Bednell, Masonic Buildings, Coventry, of any misleading advertisements brought to their notice.



SKATERS AND THE MOTOR CYCLE.

Both motor cycles and push cycles were largely used for getting to the various skating centres last week. The picture is a scene on the side of the lake on Wimbledon Common, and shows two Chater-Lea sidecars whose owners are indulging in this popular form of sport.



Inclined Engines.

The writer of the interesting article on inclined engines ignores the rather common American practice of inclining a single-cylinder engine *backwards*. In warm weather the proximity of the standard vertical single-cylinder to one's legs is rather unpleasant, but the backward tilt must accentuate this, and in addition affects weight distribution to some extent. It would be interesting to hear American manufacturers expound the reasons which induced them to adopt this design. May I further wonder why a few makers who tilt their single-cylinder engines forward do not cast the radiating fins horizontally so as to lie parallel to the ground line? One would imagine that if the fins are kept at right angles to the axis of an inclined cylinder, one fin must screen another and reduce the cooling efficiency.

Are Cut-outs Desirable?

Personally I confine the use of a cut-out to two sets of conditions, viz., climbing steep hills and threading heavy traffic. Better design would obviate the usefulness of the cut-out in climbing exceptional hills, and from this standpoint legal repression of cut-outs is certainly to be welcomed; it will accelerate the production of better engines. As regards the other circumstances, I have always asserted that a silent motor bicycle is a most dangerous vehicle in traffic. The silent car is safeguarded first by its size, which ensures its catching the eye of a pedestrian, and also by the comfort and ease with which a car is slowed, stopped, and restarted, as contrasted with a motor bicycle. I confess that in busy cities I almost invariably drive on the open cut-out in day time; the restricted throttle opening prevents really excessive noise. If the law robs me of my cut-out, I shall be compelled to make excessive use of a penetrating hooter or exhaust whistle, which will be less convenient to myself and more irritating to the public whom I so lovingly protect. The whole trouble is due to the mannerless riders who love to crackle along under all circumstances and at all speeds with a well-tuned engine and open exhaust.

Silencers in the Big Trials.

The A.C.U. regulations on the subject of silence in important trials have always been a laughing stock. On some occasions the officials have professed to seal the cut-outs; under these circumstances some riders have drilled out the normal orifices to obtain as free and noisy an exhaust as if the cut-out were permanently open, while others have adroitly hoodwinked the gentlemen with the pliers and wire, and gone through the entire trial with their cut-outs free, using them at discretion. On other occasions a general threat of disqualification for excessive noise has been deemed sufficient, and the riders have pleased themselves on the cut-out question, many eminent riders only closing the shutter when they caught sight of one of the more virile officials. As a consequence there is a distinct impression abroad that the A.C.U. are not in earnest on the matter.

If the A.C.U. are in earnest they have two fairly simple alternatives. One is to appoint as "silence judge" in their next trial a courageous independent rider, devoid of commercial interests, who shall wander about the route at his own free will, not confining his presence to half a dozen hills, where a group of cars and red flags warn the more callous competitors to be on their guard, and to base a stern system of marking on his reports. The other is to enforce a standard silencer in each class outside barrel of a given length and diameter, inside barrel ditto, no cut-out, fixed number of outlet holes in each barrel, each hole to be of a given size, all silencers to be tested at the start and at the finish.

At present the silence regulations are regarded as a huge joke; but perhaps this is the intention of the A.C.U.? In the meantime we are threatened with repressive legislation, and in certain police areas this legislation will produce many annoyances.

Chrome Leather for Belts.

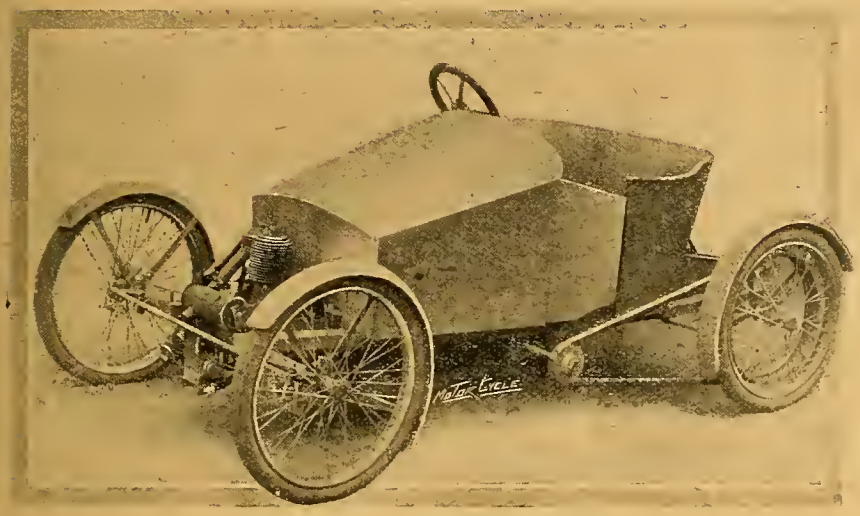
Until quite recently I had never tried a belt made of real chrome leather. A few months ago a chrome leather belt was put at my disposal. In form it was an ingenious evasion of several well-known patents, designed to give flexibility to a leather belt of large section.

If a length of the leather was left for forty-eight hours in water the substance seemed totally unaffected, and I put the belt into use with great expectations. So far as I was able to judge the belt was not subject either to glazing by grit or to slipping caused by wet; but it had two very fatal defects, in that it stretched very rapidly without any limit, and that it was brittle and kept snapping.

Now I hear of other similar belts in preparation for the market, and of one in particular which is stretched at each stage of manufacture. The hide is stretched upon purchase; when it is "raw-hide tanned," it is stretched again; again in the "chrome tanned" stage; again when cut into strips; and, finally, when it is built up into belts. This particular leather seems to defy ordinary stretching tests, when its preparation is finished, and it is not brittle, for if a strip be slit to within half an inch of its edge, it requires great force to tear the slip away.

I wonder whether a perfected chrome leather belt may solve the problem of winter transmission, so far as belt-driven machines are concerned. My experience should warn readers that some chrome belts are very, very bad if others are good. The promising belt to which I have alluded is not yet on the market, so it is useless for readers to write to me for further information.

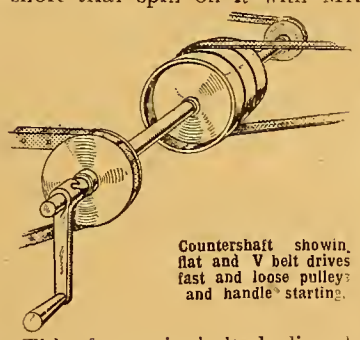
ANOTHER SPIDER QUAD.



Three-quarter view of the light quad described.

AT the present time there is being tested in the neighbourhood of Coventry a novel type of sociable quadcar, which is intended to be manufactured and sold at the price of an ordinary high grade motor cycle. Its chief features are absolute simplicity and light weight.

We have examined a rough experimental machine and have been for a short trial spin on it with Mr. Glover, the designer, and we may safely say that it seemed quite practicable, and has much promise.



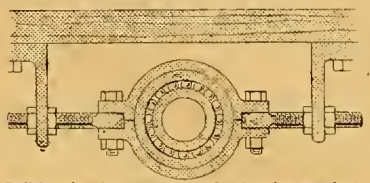
Countershaft showing flat and V belt drives fast and loose pulleys and handle starting.

The motor in use for test purposes is an ordinary 3½ h.p. air-cooled motor cycle engine, which is suspended on a short tubular frame. This frame is bolted directly to two ash boards which form the main frame, and lie with their breadth parallel to the ground.

A tubular axle is bolted rigidly to each end, and serves as a cross member. No springs are used, but the ash boards form a very fairly efficient "buck board" construction.

The Novel Transmission.

Transmission is by flat belt to a fast and loose pulley on the counter-shaft, thence by a V belt to one rear wheel. We understand that in future a two-speed on these lines will be used in conjunction with a V belt to the other rear wheel, giving a lower gear ratio. The counter-shaft is adjustable, so that the belt tension may be easily altered. A handle starter geared up to the counter-shaft by chain is employed. The

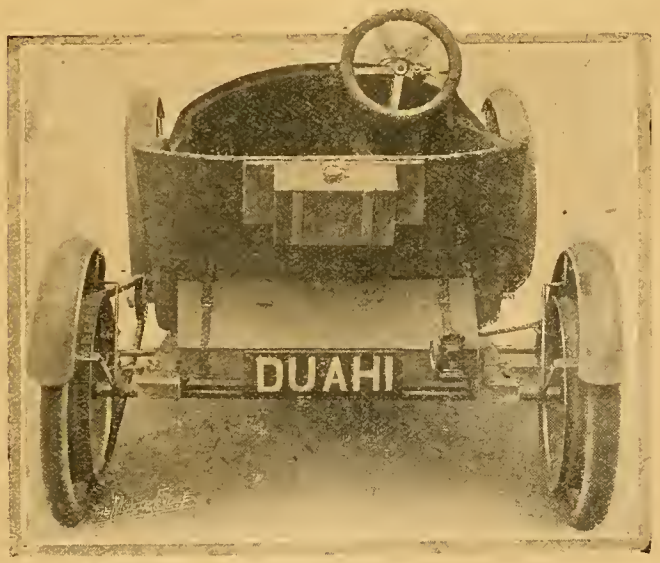


Ball bearing for counter-shaft, showing method of adjusting belt.

difficulty of fitting a body to this type of frame is overcome by slinging the body from the front and rear ends only, the rest lying well clear of the frame.

The steering is on the double reel and cotton system, the ends of the wires being sprung so as to absorb road shocks.

Although the machine we tried was only fitted with single gear and fixed point magneto, it had quite a fair turn of speed, and though we met with no severe hills, all those we tackled were surmounted with great ease. The springing is fair, and certainly more comfortable than a motor bicycle, though it must be confessed that pot-holes are at times noticeable. The makers are Messrs. Glover Bros., engineers, Spon Street, Coventry.



Rear view showing belt transmission and petrol tank at rear

One of the R.I.A.'s experts and an assistant travelled over a large number of roads in the Metropolitan area on three or four mornings last week to examine the surfaces and to ascertain the effect of frost on road dressings. As a result of these inspections, the association's expert has drawn up the following list of materials composing road surfaces arranged in order of non-slipperiness: First and best, asphalt and experimental roads deep treated with tar or bitumen; second, smooth tarred roads, *i.e.*, those that have been tarred on an existing smooth macadam surface; third, smooth untarred macadam roads; fourth, rougher and uneven untarred macadam roads; fifth, new and consequently smooth and even wood pavement: sixth and worst, old and uneven wood pavement.

THE TOURIST TROPHY RACE.

The Snaefell Course Sanctioned. Dates June 28th and July 1st. Ten Mornings' Practising.

LAST week the Highway Board of the House of Keys considered an application by the Auto Cycle Union to hold this year's Tourist Trophy Motor Cycle Races over the long course, including the ascent of Snaefell, and the application was acceded to. We mentioned in our last issue that the Tynwald Court had granted permission for the races to be held in the Isle of Man, but recommended the old short course, starting from St. John's and embracing Ballacraine, Kirk Michael, and Peel. It will be remembered that it was *The Motor Cycle* which urged the desirability of a change in the course in face of some opposition, and, further, commenced the campaign in favour of including the Snaefell Mountain climb on every circuit. How far that adopted recommendation went towards developing the ideal change-speed gear it would be impossible to over-estimate. The Auto Cycle Union officials, also realising the good brought about by the Snaefell course, wisely wired to the Isle of Man authorities last week asking if the mountain course could be used in preference to the St. John's course, and we are pleased to report that the House of Keys unanimously granted the necessary permission, and, further, arranged that the dates of the Junior and Senior T. T. Races should be fixed for June 28th and July 1st respectively.

Douglas People Delighted.

The start and finish will be at Woodlands, on the outskirts of Douglas, as before, and our Manx correspondent wires us to the effect that Douglas people are delighted with the decisions, as it will give a splendid start to the visiting season. It is regretted on the island that the Motor Cycle Manufacturers' Union should have gone so far as to interfere with the application for permission to hold the event, and the Manx people hope yet that the Manufacturers' Union may see the error of its ways and support the race.

Ten mornings' practising will be allowed, this year a time having been fixed, viz., 5 a.m. to 7.30 a.m. As heretofore, competitors may not use their machines during the daytime or on Sundays.

ENGLISH-DUTCH RELIABILITY TRIAL.

ON the 18th inst. the Dutch Motor Cycle Club will hold a council meeting to consider a suggestion that the number of the teams in this International contest be increased to nine aside. If sufficient Dutch entrants are forthcoming the club will agree to the increase in view of the popularity of the trial in this country.

Another matter is the question of charging a small entry fee for the amateur entrants. It is considered that a small fee will be a guarantee of good faith, and eliminate those who may send in their names without any actual intention of taking part in the contest when the time comes. A nominal entrance fee of five shillings is therefore under consideration.

After these matters have been settled, the question of choosing the team to represent this country will be proceeded with. Sufficient entries have been received to render the selection of a representative team possible, but more nominations are required in the amateur lightweight class. First and second reserves must also be picked, so that there may be no possibility of the British team starting with depleted ranks in case of any mishap.

D. J. Danth (2½ h.p. Grandex-Precision) and A. F. de Waal (5 h.p. A.J.S. sidecar) have notified us of their intention to join the English party.



Streatham and District and Surrey M.C.C.'s Joint Winter Reliability Trial. Competitors coming up Coast Hill, Dorking.

Winter Reliability Trial and Inter-club Competition.

Streatham and District M.C.C. v. Surrey M.C.C.



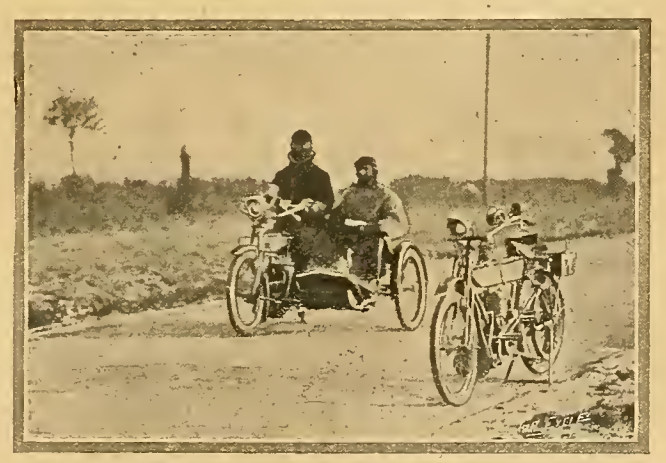
Inter-team Trial between the Surrey and Streatham and District M.C.C.'s. The start at Leatherhead.

AT 8.30 a.m. last Saturday the first man in the above event was despatched from Leatherhead, the rest following in pairs at half-minute intervals. The route lay through Dorking, Guildford, Farnham, Hock, Basingstoke, Newbury, Andover, to Winchester. Soon after leaving Dorking, Coast Hill had to be ascended. Here we passed A. J. Clayton (3½ two-speed Humber and sc.) stopped half-way up. A. J. Luce (8 Zenith and sc.) failed on this hill owing to a slipping belt; however, after descending and fitting a new one he made an excellent ascent. R. G. Mundy (2½ three speed Singer) came up excellently on second speed. Just outside Guildford F. W. Barnes (8 Zenith and sc.) was troubled with a slipping belt; however, after descending and fitting a new reaching Farnham he was again delayed owing to a puncture. He rode the same machine that he used in the French hill-climb, the cylinder seals being still intact. Before reaching Basingstoke we passed A. T. Tamplin (3½ Rudge) in trouble by the roadside. W. H. Davey (3½ Bradbury and sc.) was another competitor who suffered with belt slip, and had to stop outside Newbury. After checking at the G.P.O. the competitors had to make a non-stop to Andover, where they again had to check. On this section Hurstbourne Hill had to be ascended. C. F. Malkin (T.T. Triumph) made a splendid ascent. W. H. Davey (3½ Bradbury and sc.) ran a few yards with a slipping belt. J. Sparks (four-cylinder F.N.) failed. Vernon Taylor (multi-speed Rudge) made an excellent ascent. A. J. Clayton (3½ Humber and sc.) failed. G. F. Hunter (3½ Zenith) came up well. This section, being a non-stop, was, according to regulations, to be observed; we, however, only noticed one observer, he being on the hill. After passing through Wherwell, we found Vernon Taylor stopped, and on enquiring what his trouble was, we found that his left overall had caught in the pulley and had been pulled clean off his leg, somewhat hurting his ankle. It was some time before it could be extricated from between the pulley flange and clutch housing. A few miles on we passed Frank Smith (5-6 Clyno and sc.) with Robertson Brown his passenger busily engaged oiling sidecar springs. The next check was held at the Royal Hotel, Winchester, where lunch was served. Before reaching here G. F. Hunter (3½ Zenith) had a puncture in his wheel. After a halt of one and a half hours the competitors were despatched on their homeward journey. The route now lay through Bramdean, Chawton, Alton, Farnham, Guildford and Dorking back to Leatherhead. After leaving Bramdean a sharp turn to the left had to be taken. Here some of the competitors went wrong. While in Farnham F. W. Barnes and J. S. Flood (8 Chater-Lea and sc.) came in thinking they were leading, but learnt that somehow they had been off the route.

We only noticed one arrow during the whole run, and considering that many by-roads had to be traversed the route should have been marked very much better. J. S. Flood, whose combination appears to have a fine turn of speed, was travelling well near Guildford, when his back tyre went down, and on investigating he found that an old patch had come adrift. W. H. Davey's Bradbury and sidecar appeared to be running well by the way it climbed the hill in Guildford High Street. He came up the whole way at under 10 m.p.h. with his engine turning over at a regular speed. Many of the competitors made good time to Burford Bridge, where they stopped and had tea, after which about one mile brought them back to the Swan Hotel at Leatherhead. To qualify for a silver medal a competitor had to cover the route at a maximum speed of twenty miles per hour and a minimum of fifteen miles per hour, and make a satisfactory performance in the observed non-stop section. A bronze medal is awarded to every competitor completing the course within the prescribed time, but whose performance in the observed section is below the required standard.

In addition to those competing in the team trial many others started, but several took the wrong route—these will, of course, be disqualified. The time cards and checkers' reports have to be examined, and the final results will be published in our next issue. Below is a list of starters:

J. T. Wood (G.W.K.), W. H. Davey (3½ Bradbury and sc., N.S.U. two-speed), Vernon Taylor (3½ Rudge multi-speed), Frank Smith (5-6 Clyno and sc.), *A. T. Tamplin (3½ Rudge), *F. L. Goodacre (twin Moto-Rêve), C. F. Malkin (T.T. Triumph), A. J. Clayton (3½ Humber and sc. two-speeds), *F. Messer (3½ Bradbury and empty sc.), W. O. Oldman



One of the competitors going well along the Hog's Back, near Guildford

Winter Reliability Trial and Inter-club Competition.—



Frank Smith (5-6 h.p. Clyno and sidecar) ascending Coast Hill in the inter-team trial.

(8 Bat and sc.), A. G. Daw (2¾ Doulgas, two-speeds), J. S. Flood (8 Chater-Lea and sc.), Rex G. Mundy (2½ Singer, three-speeds), J. C. Bateson (3½ L.A.C.-Jap), T. H. Kennington (2½ New Hudson, three-speeds). Those marked * did not finish.

STREATHAM TEAM.

H. Hunter (2¾ Humber), non-stop, silver medal.
F. W. Barnes (8 Zenith and sc.), wrong route, disqualified.
S. T. Tessier (6 Bat), non-stop, silver medal.
J. W. Ayers (2½ A.J.S.), non-stop, silver medal.
G. F. Hunter (3½ Zenith), non-stop, silver medal.
P. Weatherilt (3½ Zenith), wrong route, disqualified.
Four marks.

SURREY TEAM (started one man short).

C. Feeny (3½ Triumph), non-stop, silver medal.
E. Cox (3½ Zenith), non-stop, silver medal.
A. J. Luce (8 Zenith and sc.), non-stop, silver medal.
J. Manuer Smith (3½ Triumph), non-stop, silver medal.
J. Sparks (four-cylinder F.N.), failed on Hurstbourne hill in non-stop section, bronze medal.
Four and a half marks.

Although the Surrey team started with one man short they hold the Marians cup for this year. Only five motor cyclists of the Surrey M.C.C. turned out, the Streatham and District members forming the rest of the competitors. J. T. Wood (G.W.K.) was a Surrey M.C.C. man, but could not form one of the team, as his runabout has four wheels.

While going down to Leatherhead on Friday night, we found J. S. Flood in a garage in Epsom at about 12.45 a.m. It appears that his forks broke earlier in the evening owing to a flaw in the material near the spindle. He, however, stopped and found that his front tyre was rubbing against the fork. He had fitted a pair of Chater forks from J. C. Bateson's machine. Ringing up on the 'phone, he asked Mr. E. E. Lacey, of Peckham, to bring down a pair of Druids for his friend's machine. They eventually arrived, and luckily fitted the Chater-Lea head. When this had been done we all proceeded to Leatherhead, arriving there about 2.15 a.m.

J. H. Jeffery, the energetic secretary of the Streatham and District M.C.C., went through the trial in W. H. Davey's sidecar. He had hoped to have his new 8 h.p. Morgan in time, but it was delayed on the rail. The club members are very interested to see how this machine behaves.

Many of the competitors had forgotten to take their goggles, and consequently suffered severely for their forgetfulness. There was a great deal of dust about, and this, added to the cold wind, made things very unpleasant.

The roads around Basingstoke were in a terrible condition, stones being left unrolled all over the road. Only a foot or less was left on either side, which made it very bad for the sidecarists.

Lamp generators gave a great deal of trouble through freezing up, salt and whiskey being in great demand.

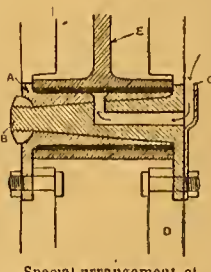
SUTTON COLDFIELD A.C. OPEN RELIABILITY TRIAL.

THE following entries were received for the above trial, which will be held on the 17th inst. The regulations were published in our last issue, and entries close on the 12th inst.

W. F. Newsome (3½ Triumph)
E. W. Cheshire (3½ Triumph)
J. Woodhouse (3½ Regal-Precision variable)
W. H. Sheldon (3½ Regal-Precision)
P. Moss (3½ Premier)
H. Brentsworth (3½ Premier)
S. H. Walden (3½ Premier)
A. A. Tye (3½ Premier)
R. Holloway (3½ Premier)
W. J. Spittle (3½ Premier)
W. D. South (3½ Rudge, variable)
S. A. Rowlandson (3½ Rudge)
T. Peck (3½ Rudge)
H. G. Church (3½ Rudge)
Vernon Taylor (3½ Rudge)
T. Silver (3½ Quadrant, three speeds and sc.)
S. Fontaine (3½ Quadrant)
N. Glassey (3½ Quadrant, three speeds and sc.)
J. St. John (3½ Quadrant, 3 s.)
M. Lake (3½ T.T. Quadrant)
Humber, Ltd. (3½ Humber)
Humber, Ltd. (2¾ Humber)
Humber, Ltd. (2¾ Humber)
V. Bushy (2¾ Humber)
P. J. Evans (3½ Humber)
A. L. Spiers (3½ Macbeth 3-sp.)
H. Jones (3½ Macbeth-Precision)
R. H. Viggers (3½ Macbeth 3-s.)
A. Winchcombe (3½ Matchless)
T. Hutton (8 Matchless, sc.)
Miss N. Hough (2¾ Douglas)
P. Phillips (2¾ Douglas)
W. W. Douglas (2¾ Douglas)
F. H. Stevenson (8 Morgan)
H. C. Pickering (2½ A.J.S.)
F. C. North (3½ Ariel, 3-sp.)
S. C. Perryman (3½ Ariel)
G. Newey (3½ Ariel)
H. G. Dixon (3½ New Hudson, three speeds)
H. Berwick (3½ New Hudson, three speeds)
Seymour Smith (3½ Norton)
P. Brewster (4½ Norton, sc.)
A. B. Wade (6 Zenith, sc.)
R. W. Duke (3½ Zenith)
H. Greaves (2¾ Enfield)
H. V. Colver (Enfield)
Harry Reed (8 Dot and sc.)
W. B. Gibb (2¾ Douglas)
L. Court (4¼ Ixion-Precision sc.)
W. R. Jones (3½ Ixion-Precision two speeds)
H. E. Perry (3½ Ixion-Jap)
H. Clark (3½ T.T. Corah)
Frank Smith (5-6 Clyno sc.)
W. H. Mahler (2½ Levis)
R. Newey (2½ Levis)
H. Goldman (3½ New Hudson)
F. A. McNab (2½ Levis)
H. Beal (3 N.S.U. 2 speeds)
H. Newman (3½ Ivy-Precision)
E. Smith (3½ Regal-Precision)
A. D. Arter (3½ James, 2-sp.)
T. Pollock (3½ James, 2-sp.)
W. H. Egginton (3½ New Hudson)
F. W. Finnemore (2¼ Veloce)
F. G. Brock (3½ Bradbury)
J. Blakeway (3¼ Precision)
H. Heaven, C. Williams, and T. Underhill.

CRANK PIN BEARING DESIGN.

The accompanying illustration shows the latest form of crank pin employed by the N.S.U. Co. It is practically self-explanatory, showing as it does that the crank pin is formed of two portions—the hollow portion A, which forms the journal of the big end bearing, and an inner portion B forming the crank pin itself. The advantages of a bearing of this type are that the bearing surface is increased without widening the overall width of the crank case, assembling is slightly facilitated, and there is not the usual likelihood of getting the flywheels out of line or twisted in making up. It will be noticed that there is an oil cup C at the side of the bearing, shown in section in the illustration, which collects the oil and conveys it direct to the bush and journal. The whole idea has been well thought out, and shows the care employed in the construction of these machines



Special arrangement of N.S.U. crank pin bearing.

Coventry and Warwickshire M.C. Annual Dinner.

A RECORD gathering of members and friends of the above club was held at the Masonic Hall, Coventry, on Friday last, the occasion being the eighth annual dinner. The diners sat at separate tables in parties of eight and upwards. At each table sat a member of the committee, the tables being named after well-known test hills, such as Barbrook Mill, Porlock, Willersey, Newnham, Mont Ventoux, Birdlip, Saintbury, Sunrising, and Edge hills. In the centre of each table stood a model triangular danger sign with the name of the hill painted on the triangle. The menu card took the form of a chart showing the enthusiasm in degrees which was expected to be reached at various points of the function. Mr. John V. Pugh presided, and among those present were the Mayor of Coventry (Colonel Wyley, V.D.), Messrs. Julian W Orde (Secretary R.A.C.), Stenson Cooke (Secretary A.A. and M.C.), F. Straight (Secretary A.C.U.). C. C. Charsley (Chief Constable), G. Sutton (Town Clerk) J E. Swindlehurst (City Engineer), H. W. Staner (*The Autocar*), Alfred Bednell (Secretary Manufacturers' Union), etc., etc.

The President, in proposing the loyal toasts, referred to his Majesty King George and the Prince of Wales as prominent motorists, and mentioned that the Prince of Wales had recently been taught to drive a motor.

"The Club," proposed by Mr. Orde, was, of course, the toast of the evening Mr. Orde referred to the various Coventry Club events which had been held during the past few years, and congratulated the club on its extraordinary prosperity during 1911. He said, in reviewing the provisional programme for 1912, that he noticed it promised to be a still more ambitious one than any previous year, nineteen events being outlined to take place during the season. He was pleased to see that no dates were definitely fixed for July, and announced that it was decided to hold the R.A.C. and A.C.U. inter-club meeting of associated bodies at Brooklands on July 27th. With the toast he coupled the names of the Mayor, Colonel Wyley, the chairman of the club, Mr. V. A. Holroyd, and the hon. secretary, Mr. Geoffrey Smith. He reminded the company of Colonel Wyley's hospitality, which he extended to the R.A.C. visitors to Coventry and Leamington in 1909, and in congratulating the club on their work, mentioned how much they were indebted to their chairman and hon. secretary.

Five Years President.

Colonel Wyley, in his reply, referred to the great interest he took in the club, of which he had been president five consecutive years. He felt sure that they had an excellent president in Mr. Pugh. Coventry had made motoring. As a representative of law and order he impressed on all motorists the importance of obeying the law, and said he thought that the best relations existed between Coventry motorists and the authorities, who were not hard on them provided they studied the convenience of other users of the road. He did not think there was anything pleasanter than being on the road, whether it was on a motor car or a motor cycle, and instanced the great amount of benefit and convenience he had derived from his membership of the Coventry Club and its association with the R.A.C. and A.C.U. At the conclusion of his speech he announced that Mr. M. J. Schulte had consented to accept the post of president for the ensuing year.

Prize Distribution.

Prizes valued at nearly £200 were then presented, which is a record for a provincial club. They have all been previously mentioned in these pages in our descriptions of the open and closed events in which the members have competed.

The Chairman also presented the R.A.C. medal to Mr. W. Grew in recognition of the signal service he had rendered to motoring and the Coventry club in particular. Mr. Grew was a founder member and the first secretary. On being called upon for a speech, the recipient acknowledged the presentation in a few words.

A Galaxy of Stars.

Mr. H. W. Staner proposing "The Visitors and Prize Donors," referred to the visitors as a "galaxy of stars." He was particularly fortunate, he said, in being allowed to propose the toast of the prize donors. His reference to the secretaries of the R.A.C. and A.A. and M.U. caused considerable amusement. He likened them to two suns revolving in not dissimilar orbits, and referred to the awful consequences of a collision between two suns, as the impact would be so great that the two masses would be resolved into incandescent gas. He coupled with the toast the name of Mr. Stenson Cooke, the secretary of the A.A. and M.U., which body he said had done a great deal to help forward the finest pastime in the world.

Mr. Stenson Cooke, in an extremely clever speech, said that he had been referred to as a "star." He believed the speaker really referred to the music halls rather than the astral bodies. He noticed that "stars" usually came on at places of amusement about 10.15 p.m., and as it was now 10.20 he thought the previous speaker's reference to him as one of the visitors was a very appropriate one. He then referred to Colonel Wyley as a "gallant soldier," and paid a tribute to the organising ability of Mr. Geoffrey Smith, the honorary secretary. A good many people, he said, thought motor clubs would come to an end when competitions ceased, but he did not agree. As long as there were dinners and visitors, in his opinion there would always be motor clubs. His reference to motor cycling as the most sporting side of motoring was received with applause. In conclusion, he said that some day he hoped to see the leading lady in Coventry's historical celebration riding a motor bicycle instead of a horse, and suggested as an appropriate costume goggles and a blush.

Mr. M J. Schulte the 1912 President.

"The Chairman" was proposed by Mr. E. Manville, who announced that the Daimler Co. would present the club with a prize for one of this year's competitions. Referring to the president's qualifications, he pointed out that there were two necessary qualifications for the post of president of a motor club—one was attention to the club's doings, and the other good sportsmanship. Mr. John V. Pugh was always to the fore in anything connected with club doings, and his sportsmanship was well-known, as he always turned up at club competitions on a motor cycle in preference to cars which he possessed. Mr. Pugh suitably replied, and referring to the coming president, Mr. M. J. Schulte, said that they could not have a better sporting president. He was not only the rider of a motor bicycle, like himself, but a driver of cars. Referring to the city authorities who were present, he said he thought there was no city in the kingdom in which the police were more tolerant to motorists provided they kept within the bounds of the law.

Mr. H. W. Staner then proposed the health of the "Town Clerk, the City Engineer, and the Chief Constable," who all replied. Mr. Charsley said that he was personally strongly opposed to police traps—a statement which was received with applause.

The toast list was interspersed with a musical programme, and the club anthem, sung by all members standing, was repeated at intervals. The singing of Auld Lang Syne wound up a most enjoyable evening, everyone voting that it was quite the most successful function the club had ever held.



Prizes value nearly £200 presented at the eighth annual dinner of the Coventry and Warwickshire Motor Club.

Club News

Newport (Mon.) and District M.C.C.

The annual general meeting will take place on the 10th inst., followed by a smoking concert. All local motorists are invited.

Middlesbrough and District M.C.C.

Fifty-five members and friends attended the annual supper and prize distribution at the Corporation Hotel on the 19th ult. Councillor A. E. Forbes occupied the chair and gave away the prizes. Then followed some speeches and a musical programme concluded the evening.

Furness M.C.C.

The annual meeting was held on the 1st inst. at headquarters (the Duke of Edinburgh Hotel). Dr. F. E. Daniel presided. Dr. E. W. Reed was re-elected president, with Dr. Daniel and Mr. S. E. Major as vice-presidents, Mr. E. E. Clow, 57, Storey Square, secretary, and Mr. P. L. Briant treasurer. The membership now numbers forty.

Ipswich and District M.C.C.

A highly interesting lecture on "Carburation" was given to the members of the above club by Mr. W. Low on January 20th at headquarters. Many thanks are due to the manufacturers of the Binks, Stewart Precision, Lukin, Cap, Senspray, B. and B., and Amac carburetters, who either sent specimens or drawings of their carburetters for inspection. The next item on the programme is a lecture entitled "Gearing and Motor Cycles," to be given by Mr. A. E. Newby on the 17th inst. at headquarters.

Purley and District M.C.C.

At the annual general meeting, held at the Greyhound, Croydon, on the 31st ult., Mr. S. F. Edge was unanimously re-elected president, and the following officers were elected: Captain, Mr. W. C. Fowler; vice-captain, Mr. H. S. Brett; treasurer, Mr. A. C. Huskinson; secretary, Mr. S. J. Tayler; competitions secretary, Mr. L. F. Ebbutt. The address of the new secretary is 19, Clifton Road, Wallington.

A slight alteration was made in the dates of the club's financial year, which will in future commence in January instead of March.

Blackpool and Fylde M.C.C.

The members' reliability trial took place on the 27th ult., the route being *viâ* Poulton, Garstang, Lancaster (check), Ingleton, Austwick (check), Settle, Clitheroe, Whalley, Preston (check), Broughton, St. Michaels. The following lost no marks, the order being arrived at by timing to seconds on the last stage: 1, T. Ball (8 Matchless sidecar); 2, R. G. Parker (2¾ Douglas); 3, C. Humber (2¾ Douglas); 4, G. F. White (3½ Bradbury); 5, T. M. Jones (5 Indian); 6, T. Wildman (2¾ Enfield). Several others lost marks on time only. There were eighteen starters. The trial was most successful, except for an unfortunate accident to Mrs. Sharples, whose sidecar collided with a lamp-post. Although badly knocked about, the lady is progressing favourably.

The British Motor Cycle Racing Club.

The annual general meeting of the B.M.C.R.C. took place at Carlton House, Regent Street, on Wednesday, 31st ult., at 7 p.m. Col. H. C. L. Holden, F.R.S., C.B., R.A., was in the chair. The proceedings were quickly carried through under the able chairmanship of Col. Holden. After the adoption of the report and balance-sheet, the following officers were re-elected: Mr. T. W. Loughborough hon secretary, Mr. A. G. Reynolds hon treasurer, and Mr. Alec Ross hon. auditor. A vote of thanks to Mr. T. W. Loughborough for his services during the past year was carried unanimously. The 1912 committee consists of the following members: Messrs. A. V. Ebblewhite, H. H. Collier, A. G. Forster, F. A. Hardy, F. A. McNab, W. Pratt, W. H. Wells, and Major F. Lindsay Lloyd, R.E.

Wimbledon M.C.C.

A run will be held from Wimbledon to Henley-on-Thames on the 11th inst. The start will take place at 10 a.m. from Wimbledon Town Hall.

Cardiff M.C.

A motor cycle section has been formed in connection with this club. Intending members should apply to Mr. T. Parry, 24, Boverton Street, Cardiff, before the 12th inst. for election at the next meeting on the 13th.

Club for North Wales.

It is desired to form a motor cycle club for riders living in Dolgelly and the surrounding districts. Those interested should apply to Mr. B. Edwards, Talrafon, Dolgelly, North Wales.

Wolverhampton M.C.C.

The annual general meeting was held on the 20th ult. Mr. W. Travers was re-elected chairman, and Mr. J. T. Ireland vice-chairman. The hon. secretary and treasurer, Mr. George Hill, was also re-elected. The hon. secretary reported during the evening that the first prize for the reliability trial to Colwyn Bay and back would be a week's stay free at Colwyn Bay any time during the season to suit the winner. The committee are anxious to make the club room at headquarters as attractive as possible, and they would be glad to receive pictures or postcards from the trade of motor cycle subjects, either sport or pastime, suitable for framing. Motor cycle catalogues and other interesting literature will be useful and acceptable.

Harrogate and District M.C.C.

On Thursday last, Mr. H. W. Fortune delivered a very interesting lecture, entitled "Incidents by the Way," to an excellent muster of members. The lecture was illustrated by over one hundred lantern slides, many of which had been lent by *The Motor Cycle*. The following gives a good idea of what pictures, etc., were shown: 1909-10-11 T.T. Races, 1911 Scottish Trials, 1910-11 A.C.U. 1,000 miles Trials, various local club events, A.C.U. Quarterly Trials, and a number of ancient motor vehicles. The technical part of the lecture related to working parts of an engine and how to keep the carburetter in good tune, also general hints on the management of the machine.



The Surrey M.C.C. has formed a section to study and develop military despatch riding and scouting. Our photograph shows the first class being held at the headquarters, Guildford. The chairman, Mr. Edward Cox, is in the centre, and the Hon. Sec. is standing next on the left.

Club News.—

Wolverhampton M.C.C.

It has been decided to hold a two-day reliability trial on March 16th and 17th to Colwyn Bay and back.

Oldham and District M.C.C.

The annual dinner took place at the Café Monico on the 23rd ult., followed by a smoking concert.

South Birmingham M.C.C.

Runs will take place on the 11th and 17th inst. from headquarters. On the 25th there will be a novices' reliability trial.

Purley and District M.C.C.

Mr. W. Pratt, the well-known exponent of the P. and M. machine, recounted some of his experiences in reliability trials on the 22nd ult. The lecture, illustrated by lantern slides supplied by *The Motor Cycle*, was most interesting and enthusiastically applauded.

Yeovil and District M.C.C.

The first annual dinner was held at the Half Moon Hotel. The chair was taken by the president (Dr. R. Hensleigh Walter). After dinner the prizes won during the past year were presented, and a very successful evening was concluded by a splendid musical programme.

Sussex M.C.C.

At a meeting held on the 25th ult. at the Fountain Hotel, Worthing, it was unanimously decided to form a club with the above title. It is proposed to form sections at different centres, also to become affiliated to the A.A. and M.U. or to the R.A.C. and A.C.U. Mr. Howard Winton, London House, Lancing, is hon. secretary *pro tem.*

Western District M.C. (London).

The annual meeting was held on the 22nd ult. Mr. E. Cubitt Sayers, J.P., was re-elected president and Mr. Ivor G. Babbage becomes treasurer. The new secretary is Mr. Maurice J. Tweedie, A.M.I.E.E., 1, Baldwyn Gardens, Acton, W., who will be very glad to hear from motorists living in Acton and Ealing and neighbourhood.

Cornwall M.C.C.

The annual dinner of above club will be held at headquarters, Red Lion Hotel, Truro, on Friday, February 9th. All motor cyclists in Cornwall are heartily invited to attend. After the dinner is over the annual general meeting will take place. Business: Presentation of prizes and certificates won during the past year, election of officers for the ensuing year, the fixing up of social runs, reliability trials and hill-climbing contests; also the deciding as to the date of the Penzance to Exeter and back run for the Raine Cup.

Derby and District M.C.C.

The annual general meeting was held at headquarters on the 24th ult. List of officers elected for 1912. Chairman, Mr. E. Clarke; captain, Mr. A. Ainsworth; vice-captains, Messrs. R. W. Spriggs and H. Baker; secretary, Mr. A. B. Bennett.

Manchester M.C.

The annual general meeting took place on the 23rd ult., when the following officers were elected: Captain of motor cycle section, Mr. J. E. Tytler; hon. treasurer, Mr. F. C. Hunt; hon. sec., Mr. G. Walker. It was decided to sever connection with the A.C.U. and R.A.C. The season's programme consists of the usual features. Nearly £60 has been promised to the prize fund.

Leicester and District M.C.C.

The annual general meeting was held at headquarters on the 26th ult., Mr. J. G. Graham occupying the chair. The report and balance sheet were duly passed and adopted. The membership now numbers eighty-three, an increase of forty over last year. Mr. G. W. Hillyard was re-elected president and Dr. C. B. Moss-Blundell vice-president. The following officers were elected for 1912: Chairman, Mr. E. G. B. Fowler; captain, Mr. J. Finlay; vice-captain, Mrs. Simpson; hon. treasurer, Mr. J. G. Graham; hon. sec., Mr. S. F. Fisher. A proposition "that no trade members serve on the committee" was rejected after much discussion; the trade members, however, in the meantime decided not to offer themselves for election.

North Middlesex M.C.C.

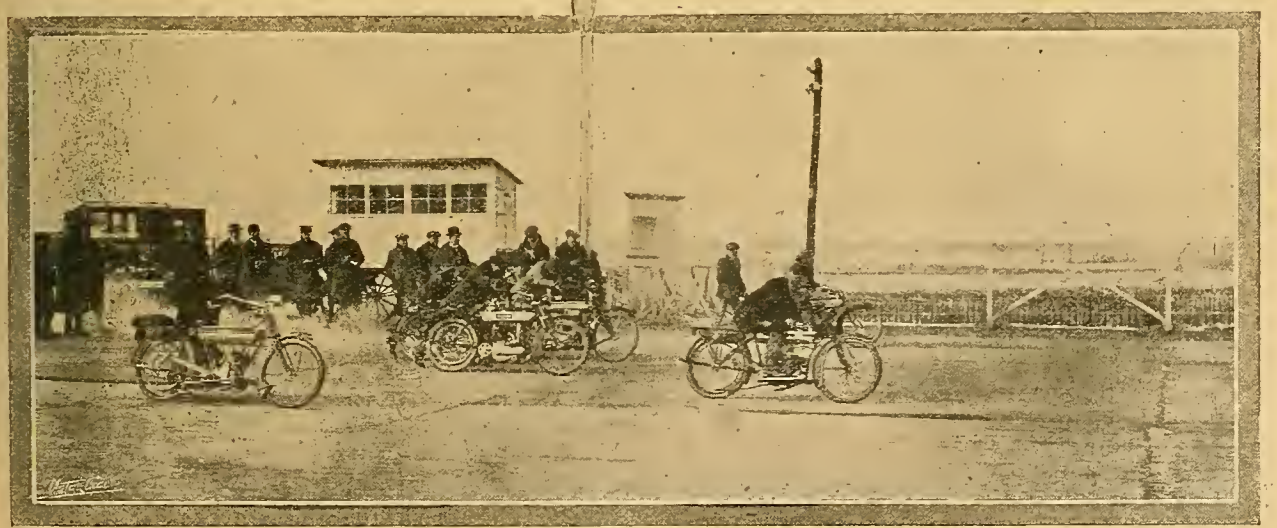
The first annual general meeting was held at headquarters Ye Olde Gatehouse, Highgate, on Friday, the 26th January. It was decided to request the Earl of Ronaldshay, M.P., to continue as president.

In accordance with the rules the following officers resigned but were all re-elected: Mr. W. H. Browne, chairman; Mr. D. Grey Blakey, "Headfield." Great North Road, Highgate, N., hon. sec.; Mr. H. C. Mills, captain.

Mr. J. A. Hilger was elected trials hon. secretary in place of Mr. A. V. Deacock (resigned), and Mr. P. Dangerfield consented to act as deputy captain in place of Mr. W. S. Bennett (resigned through illness).

The plans for the coming season were discussed, numerous competitions and social runs being arranged. The opening run is fixed for March 16th, and the first competition for members will be a 100 miles non-stop trial on March 30th. It has also been arranged to take part in the inter-team competition at Easter with the Herts. County and N.W. London Clubs.

The membership of the club now stands at ninety-five, including eight ladies.

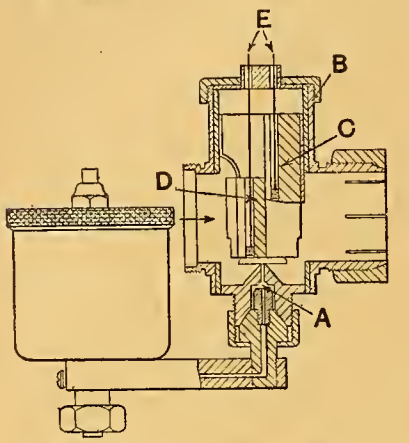


THE WAR OFFICE TEST AT BROOKLANDS, DESCRIBED IN OUR LAST ISSUE.

The above picture of the start for the speed test is an object lesson in itself, as showing the advantage a variably geared machine has in starting on the low gear. It will be seen that in the first dozen yards, G. L. Fletcher (Douglas), with P. Shaw (P. and M.) but half a wheel behind, has gained quite an appreciable lead.

[Carburetter Throttle Mechanism.

Above the jet A is a tubular chamber B in which is contained the cylindrical throttle sleeve C. This sleeve is cut

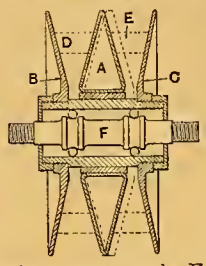


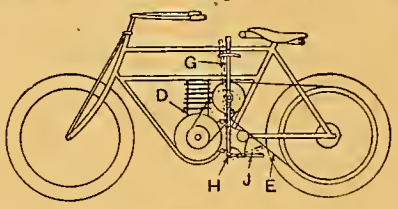
away at the points desired, and has arranged to slide within it the extra air plug D. The sleeve C and the plug D are operated by wires E, being normally moved downwards by springs which are omitted from the drawing for the sake of clearness.—F. H. de Veulle, No. 6348, 1911.

PATENTS.

A Variable Gear.

In this gear there is employed a double V pulley, the intermediate member A of which is free to slide and rotate on the sleeve to which the outer flanges B and C are attached. With this pulley are employed two belts D and E, the former driving from the engine and the latter transmitting the motion to the rear wheel. The pulley is carried on ball bearings on an axle F mounted on a lever G pivoted at H to a

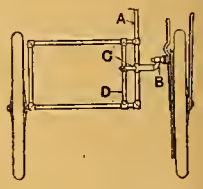




link J. As the lever G is oscillated about its pivot the belts D and E alter their positions in the grooves, affording a variation of gear. The bearings on the axle F permit movement of the pulley laterally to compensate for variation of the belt lines. A free engine is obtained by means of the link J to which the lever G is pivoted. When the link J is moved into the position shown in dotted lines one of the belts is slacked off to an extent permitting of the engine running without any motion being transmitted.—J. A. Prestwich, No. 30,168, 1910.

A Sidecar Improvement.

By this invention it is possible to bring the sidecar wheel into perfect alignment with that of the machine, and the sidecar frame may be arranged perfectly horizontal. For this purpose the main member A of the sidecar frame is connected to the bracket secured to the machine through a swivelling angle member B permitting its height to be varied. The sidecar



wheel is adjusted for alignment by sliding the frame in socket C, an auxiliary tube D being employed to provide additional strength.—W. H. Fulford and E. Howe, No. 21,050, 1911.

Trade Announcement.

The Continental Tyre and Rubber Co. announce the appointment of an additional managing director in the person of Mr. Paul Loeser, late managing director of the Continental Tyre Co., Paris. This gentleman will in future act as managing director in conjunction with Mr. Paul Brodtmann.

Catching Scorchers.

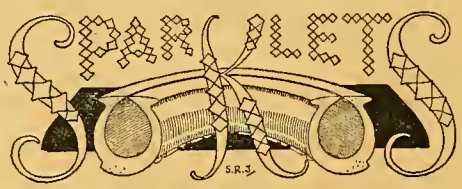
The Toronto police use British-made motor cycles on which to mount members of the force who are engaged in catching and prosecuting motorists who exceed the speed limit allowed by the law. The police authorities have just ordered three more Triumph motor bicycles from the Tangent Cycle Co., Toronto, which will make six Triumphs in use by the Toronto police.

Hill-climbing in New Zealand.

In the hill-climbing competition held by the South Canterbury Motor Cycle Club, on November 30th last, at Vague's Hill, near Timaru, George Patterson, jun. (2¾ h.p. New Hudson), was first, actually making faster time than the winning 3½ h.p.'s in both the open heavyweight and private owners' heavyweight classes, by over three seconds, and accomplishing the best performance of the day for efficiency.

A Useful Magneto Chart.

We have received from the Bosch Magneto Co. their coloured magneto chart, illustrating every detail of the DA 2 motor bicycle magneto. The chart is beautifully got up, and is of inestimable value to motor cyclists who desire to know their magnetos thoroughly. The Bosch Magneto Co., 40-42, Newman Street, Oxford Street, W., will supply secretaries of clubs who have fixed headquarters with one of these charts in an oak frame, 33in. × 30in. The different materials used in the construction of the magneto are coloured separately.



Tyre and Belt Successes.

In the Herts County 100 miles trials the following prizes were captured by users of Dunlop tyres and belts: W. F. Newsome, who topped the score sheet with 191 out of a possible 200 marks, used a Dunlop belt, while Dunlop tyres were fitted to the Humber on which Fenn secured first place in Class A, and to the Rudge ridden by B. Alan Hill, silver medallist in Class B.

A Novel Adjustable Spanner.

The spanner which forms the subject of the accompanying illustration is made by Herbert Terry and Sons, Ltd., Redditch. It will be readily seen that the jaws are partly filled with a number of packing pieces threaded together in such a way that the width of the jaws can be adjusted to suit various sized nuts. One of its advantages is that it can be used in awkward places where a larger adjustable wrench of the usual type would be inconvenient to handle.



No Cement Patches.

A new tyre patch known as the Security is now being sold by A. W. Gamage, Ltd., Holborn, E.C. The business side is covered with linen. To make the patch adhere firmly it is necessary to pull off the linen, moisten the patch with petrol, and press it on the tube, which has been first of all cleaned in the usual way. If it is warmed a little after application by holding the tube on hot lamp cowl or warm radiator additional security is ensured.

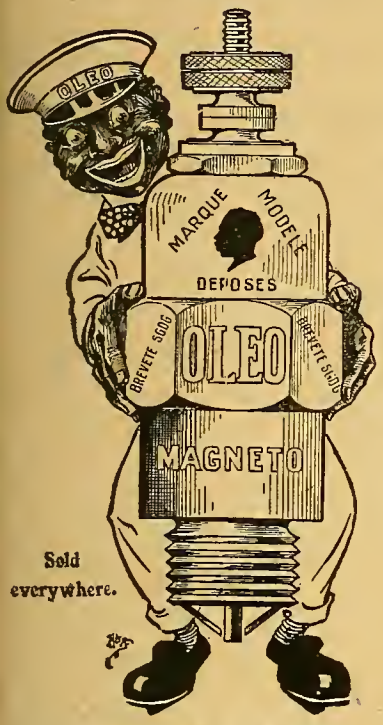
Catalogues Received.

The Wood-Milne patent steel-rubber tyres and belts for motor cycles, although only recently introduced, are already in considerable demand. The new catalogue describes and illustrates the three designs of steel-rubber motor cycle tyres for which this firm is known, also the special butt-ended air tube which has no joints in the ends, and the steel-rubber motor cycle belt which is made in all sizes from ⅝in. to 1¼in. Copies of this catalogue can be obtained from Wood-Milne, Ltd., Ribble Bank Mills, Preston.

The 1912 Rex machines are described and illustrated in a neatly compiled catalogue, giving illustrations and full detailed specifications of all these well-known motor cycles. A half-tone illustration of each model appears above the specification on each page, so that the illustration can be examined at the time the specification is read—a great convenience. Detail pictures of the Rex 1912 improvements and sectional drawings of the clutch and two-speed gear, disc hubs, and cone clutch hubs are also included. Readers who are interested in these machines should address their enquiries to the Rex Motor Manufacturing Co., Ltd., Coventry.

The Dunlop Rubber Co., Ltd., Aston, Birmingham, have issued a new catalogue of motor cycle clothing, and will be pleased to send pattern bunches of the various materials to any reader.

At your Service!



Sold everywhere.

31st December, 1911.

London-Gloucester Open Reliability Trial.

Dear Sirs,

I have the pleasure to inform you that I have been successful in qualifying for a SILVER CUP in the above.

Your plug fired PERFECTLY during the entire run in spite of MUD AND RAIN, it seemed to me PARTICULARLY SUITABLE for a high compression engine like the TRIUMPH.

Thanking you for your KIND HELP.

I am dear Sirs,
Yours faithfully,
GLYNN ROWDEN.

LEO RIPAULT & Co., 64a, Poland St., LONDON, W.



Crowned by its own Successes!

For many seasons our bands have been recognised as the entirely dependable

Motor Cycle Detachable Bands.

The prices are moderate, and the lasting qualities are unique. May we send you full particulars?

Roberts Belts are as good as their Bands —further recommendation is unnecessary. Illustrated particulars free on request.

THE ROBERTS MOTOR TYRE CO., Gripwell Works, St. Mary's Row, BIRMINGHAM.

"Ah, there's the rub"——

the starting trouble, and anxiety—

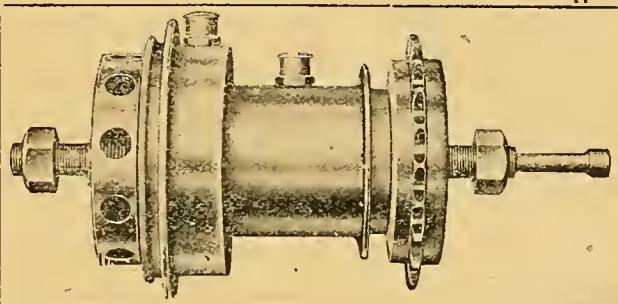
the pushing, running, puffing, panting—

the toilsomeness of the whole process, and—

the weariness that follows!

You know it—you have experienced it all, and—

You have longed to "glide away like a car."



and here's the Hub

that will make that possible.

The D.H.K.

Unlike other FREE ENGINE HUBS—

In its construction there are no complications—no springs—no plates—no multiplications—ball-races—no unnecessary parts—

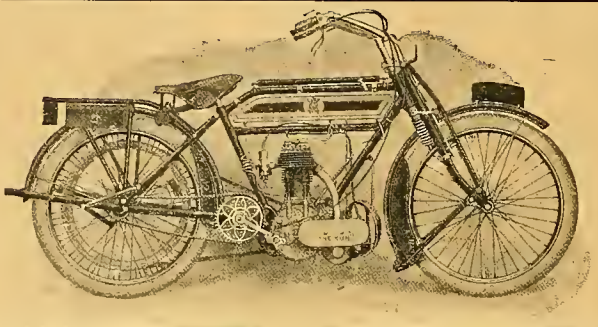
It simply runs on one set of $\frac{5}{16}$ balls—is half the weight of any other similar device—costs no more, and—

You press a lever and you're "off."

Now let's tell you more—write us.

The D.H.K. HUB CO.,
Mary Ann Street,
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"SUN PRECISION" MOTOR CYCLES



Are the outcome of 25 years' ripe experience in the manufacture of Cycles and Motor Cycles. They are made in one of Birmingham's largest cycle and motor cycle works. **We invite you to come and see them in the making.** Only the very best of everything is put into them. They have already had a royal welcome in the best quarters. You are of course aware of the hundreds of "Precision" successes.

The Sun Cycle & Fittings Co., Ltd., Birmingham.

"LINCOLN ELK" New Models, 1912.

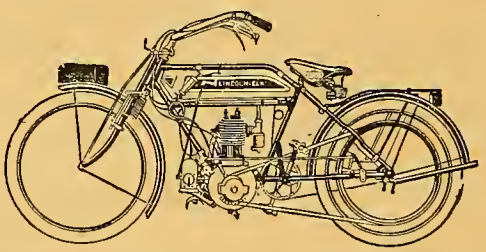
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3½ h.p., £34 - 0 - 0.
3 h.p., £30 -10 - 0.
2¼ h.p., £23 -10 - 0.

All Models fitted with Palmer Tyres, Bosch Magneto, and Footrests. "Druid" Spring Forks.

Sole London Agent:
REY,
Heath Street Motor Works,
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Hampstead, London, N.W.

E.I.C.

MOBI.



3/6
each.

Obtainable everywhere.

SAMPSON ROAD NORTH,
SPARKBROOK, BIRMINGHAM.

REVOLUTION IN CARBURETTERS.

VERY SLOW RUNNING.

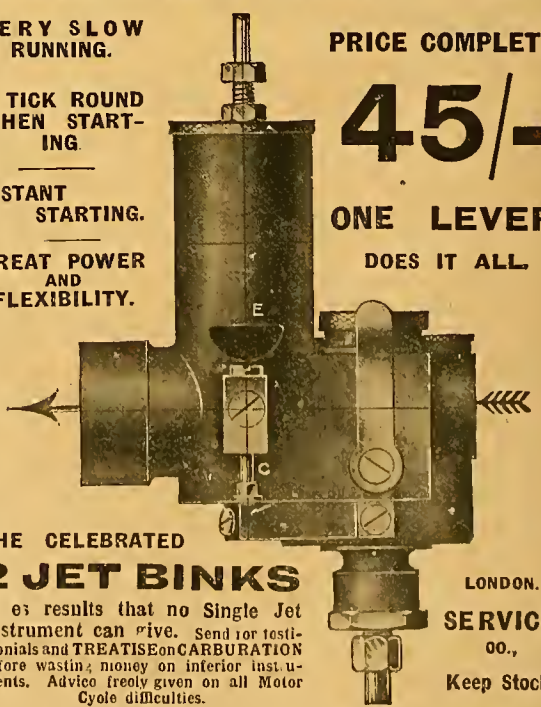
A TICK ROUND WHEN STARTING.

INSTANT STARTING.

GREAT POWER AND FLEXIBILITY.

PRICE COMPLETE
45/-

ONE LEVER DOES IT ALL.



THE CELEBRATED
2 JET BINKS

Gives results that no Single Jet Instrument can give. Send for testimonials and TREATISE on CARBURATION before wasting money on inferior instruments. Advice freely given on all Motor Cycle difficulties.

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PREMIERS. CHATER-LEA.
MATCHLESS. CLYNOS.
RUDGES.

Early Deliveries—Best Exchanges.

TRIUMPH, 1909, two speeds £37 10
PHANOMEN, 6 h.p. twin, two speeds.... £25 0
REX DE LUXE, 5 h.p., two speeds, 1909 £27 10
REX, 3½ h.p., M.O.V., low built £6 18
MINERVA, Twin 4½ h.p. spring forks.... £16 10
N.S.U., 4 h.p., single cylinder, new last Sept., ideal sidecar machine £27 10
REX DE LUXE, 5 h.p., twin, two speeds, handle starting, M.O.V., 1911 model .. £48 10
REX DE LUXE, 5 h.p., twin 2 speeds, 1910 £37 10
REX, 3½ h.p., spring forks, magneto, h.-h. control, 1909 model £22 10
N.S.U., 4 h.p., single-cylinder, new two months ago..... £28 10
REX, 3½ h.p., 1908, spring forks, magneto, h.-h. control, beautiful condition .. £16 10
N.S.U., 3½ h.p., two speeds, magneto £19 10
MOTO-REVE, 2¾ h.p., 1911, Armstrong 3-speed £27 10
QUADRANT, 3½ h.p., magneto, spring forks £16 10
PREMIER, 3½ h.p., new, 1911 model £38 0
N.S.U., 3½ h.p., M.O.V., magneto £15 10
N.S.U., 3 h.p., M.O.V., nice order £10 0
REX DE LUXE, two speeds, magneto, handle starting, h.-h. control £22 10
PREMIER 3½ h.p. 1911, 3-speed, new.... £49 10
TRIUMPH, 2¼ h.p. £6 10
HOBART, 3 h.p., vertical engine, low £4 10
ROYAL STAR, 2¼ h.p., vertical engine .. £5 10
KERRY, 2¾ h.p., 26in. wheels, vertical engine £8 10
OLYMPIC, 3¼ h.p., vertical engine, 26in. wheels £6 10
PREMIER, 3½ h.p., 1912, three-speed gear £58 0
PREMIER, 2¼ h.p., 1912, three-speed gear £47 5
QUADRANT, 3 h.p., vertical engine..... £5 10
PUSH CYCLES TAKEN IN EXCHANGE.

TRICARS.

TWIN REX, air-cooled, belt drive. Fit-all two-speed gear £14 10

CARS.

DARRACQ, 9 h.p., two-seater £15 15
EAGLE, 14 h.p. four-cylinder, five-seater, two speeds and reverse £27 10
HUMBER, 5½ h.p., two-seater, bucket seats, two speeds and reverse £13 10
PHŒNIX, 8 h.p., two-cylinders, magneto, hoods, screen, and lamps £56 0

GENUINE MICHELIN TYRES.

	Beaded.	Wired.	Tubes.
26 x 2	17/-	16/6	9/6
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28 x 2	19/-	17/-	10/-
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MICHELIN BUTTED TUBES.

26 x 2 11/6 | 26 x 2¼ 11/9 | 26 x 2½ 12/-
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Carriage Paid. All Guaranteed. Prompt Delivery

MISCELLANEOUS.

New Amac Variable Jet and H.-B. Control 18/6
Good Forecar, less tyres ..... 35 -
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Good Rigid Sidecar..... 57/6
Millford Castor Wheel Sidecar..... £6 0
Long Handle-bars, dropped ends 5/6 and 6/6
Coronet Silencers, up to 5 h.p..... 3/3 and 4/6
New Handle-bar Mirrors 2/3
Gripskin Belting: ⅜in. 10½., ½in. 11d., ⅝in. 1/-
Wide Mudguards, 3in., 2/3; 4in., 2/11 pair.
Handle-bar Watches, with holders 4/3
New Sidecar Frame and Wheel..... 35/-
Trembler Coils, 6/6. Plain 2/11
Powell and Hanmer £1 Lamp 11/6
16 Guinea Lowen Sidecar £4 4
Nearly New Coronet Sidecar..... £3 10
Millennium 2-speed hub £8 0
New solrests 2/6
New Mirror Lens Lamp with generator .. 12/6
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New Coronet Pistons, 81 mm. bore 2/6
Light Car Chassis with springs and front wheels 30/-
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THE Great Douglas Agent, Gourlay.

1912 Douglas in stock.—Gourlay.

WHO Keeps your Douglas in tune?—Gourlay.

WHO Supplies the great Douglas on easy terms?—Gourlay.

SOLE Manchester Agent for the great Douglas, Gourlay.

DOUGLAS, 1912; order now for early delivery.

DOUGLAS, 1911, two left, late 1911, unused, perfect; reduced 10% for quick sale.

DOUGLAS, 1911, second-hand, good condition; £25, a very fine bargain.—Colmore Depot, 18, Renshaw St., Liverpool.

BAT, 1912, one 8h.p. model in stock; first order secures; other models, early delivery.

BAT, 1911, 6h.p., 2-speed, splendid machine, perfect order, late 1911; reduced from £68/10 to £63.

CHATER-LEA, 1912. Order now for early delivery of this powerful sidecar combination; lists on application.—Colmore Depot, 18, Renshaw St., Liverpool

CLYNO, 1912. The sensation of the Show, chain driven, 6h.p., 2-speed; one or two spring deliveries left.

MACBETH, 1912, 3½h.p. Precision engine, Armstrong 3-speed gear, Dunlops, Brooke, Bosch, etc., etc., everything the best. See them.

MILLFORD and Turner Sidecars. Fine range for selection; 6 guineas to 20 guineas.—Colmore Depot, 18, Renshaw St., Liverpool.

DOUGLAS, 1912, in stock; early deliveries any model

DOUGLAS, 1910, single speed, perfect order; cheap £26/10.

DOUGLAS, 1909, single speed, good order; trial: £24/10.—Colmore Depot, 261, Deansgate, Manchester.

MATCHLESS, 1912, any model; earliest deliveries; 8h.p., 2-speed, most popular passenger machine Write us.

MATCHLESS, 1911, the last, 6h.p., single speed, brand new, full guarantee; list price 54 guineas, to clear at 49 guineas.

MATCHLESS, 1911 single gear, 3½h.p., done only 800 miles, as new; £37.—Colmore Depot, 261, Deansgate, Manchester

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1912 Standard Triumph in stock. £48/15.—Below.

1912 Standard Bradbury; £48.—Below.

EARLY Deliveries of 2-speed Matchless and Bradbury motors.—Cross, agent Rotherham.

1912 Free Engine Triumph in stock; first cheque £55 secures.—Below.

1912 Free Engine B.S.A. in stock; your machine taken in exchange for any 1912 model motor cycle.—Below.

20 Magneto Machines in stock; every machine overhauled; we specialise in exchanges.—Parker, Stanley Garage, Westbrook St., Bolton. 'Phone: 1348.

T. PARISH, Preston, for Bradbury and Douglas. try me for exchange.

T. PARISH, Preston, has splendid sidecar, not ridden 20 miles; cost £7, cheque £4/10 secures.

1911 Triumph, soiled, £43; 2¾h.p. Enfield, nearly new, £31.—86, Fargate, Sheffield.

1911 Free Engine Triumph, splendid condition; £46 —John H. Beaver, jun., Biugley.

THE Clyno Exhaust Whistle, with h.b.c., fits on long pipe, very loud; 21/-; approval.—Below.

CLYNOS.—Call and inspect new model, with Clyno sidecar. Years ahead of all others; proved by giant tests the best. Order at once; supply limited second-hand Triumphs and P. and M. in stock.—Potter, Clyno agent, Leicester Grove, Leeds.

PRESTON.—20 new and second-hand machines; in stock; at bargain prices; sale or exchange.

PRESTON.—Immediate delivery 3½h.p. Ivy-Precision; 4½h.p. ditto, 3-speed Armstrong; 8h.p. Rex-Jap; exchanges our speciality.

PRESTON.—For anything motor cyclish, new or second-hand; sale or exchange.— Note address, The Motor Cycle House, 82a, Fishergate, Preston.

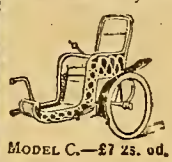
BRADBURY, 1912, just arrived, free engine, latest pattern.—Gornall, Pilling, Garstang, Lancashire

N.S.U., 3½h.p., fitted with 2-speed gear, free engine magneto; price £18.—Gornall, Pilling, Garstang

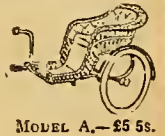
CORONET SIDE CARS

DON'T OVERLOAD.

Why fit heavy "cab" pattern sidecars which your 3½ h.p. machine cannot possibly pull? Coronet sidecars are actually stronger than these heavy-weights, weigh only 56lbs., and 3½ h.p. machines take them comfortably. Don't experiment, buy a Coronet.



MODEL C.—£7 2s. 0d.



MODEL A.—£5 5s.



MODEL E.—£7.



MODEL D.—£7 12s. 0d.

Instructive Catalogue post free, giving illustrations and full particulars of all models of Coronet Sidecars. Every model certain to satisfy and save money for buyers. Full of improvements Quick detachable joints. Latest car pattern mudguards. Wicker, cane, or coach-built bodies. Child's reversible seat. Excellent upholstery.

NOTE front arm which grips main tube of sidecar, which is the only correct mechanical method—nothing lopsided about this attachment.

Delivery from stock to suit TRIUMPHS, N.S.U.'s, REXES, P. & M.'s, BRADBURYS, etc. Discounts to Agents.



TEE BEE LOW SEAT-PILLAR, 5/- each.

GREAT CLEARANCE LINE.

New Dunlops, 28 x 2 and 2¼, wired edges .. 19/6
Dunlops, 28 x 2, beaded, heavy treads 14/9
2¼ x 2 and 2¼ Beaded Clipper Covers, new .. 8/6
Best Quality Butt-ended Tubes 7/9
150 New Tubes 26 x 2¼..... 5/11
Rubber-studded Covers, best make 25/-

ENGINES:

4 h.p. Twin N.S.U., with Bosch gear-driven magneto, brand new from makers £11 10
4 h.p. Twin N.S.U., with magneto £9 0
3 h.p. TRIUMPH, with Bosch magneto, less cylinder £5 10
3½ h.p. CLARENDON, M.O.V..... £2 15
4½ h.p. BUCHET, water-cooled £6 15
9 h.p. DARRACQ, water cooled £9 10
10 h.p. CLEMENT, two cylinder..... £9 10
2 h.p. STANDARD £1 10
4½ h.p. PRECISION, new 1912 Model £13 10
1¾ h.p. MINERVA £1 8 | 2½ h.p. DE DION £1 15
3 h.p. QUADRANT £3 0 | 2¾ h.p. MINERVA £3 5
Exchanges entertained.

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We have a large stock of the best makes from 59/6. Your old coil and acc. taken in exchange.

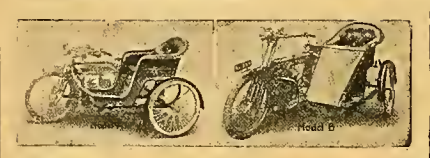
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27/6 and your carburetter secures a new 1912 B. & B. with h.b. control
20/- and your carburetter secures a new Amac with variable jet and h.b. control.
SENSPRAY Carburetters, 1912 models, £2 2s.

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THE PORTLAND SIDECAR



£6 6s. model less apron. £3 6s. model with apron.



£7 7s. model. £3 8s. model.

26 x 2½ Michelin tyres Double Coee Springs Wide mudguard Three-point suspension Dropped bearer bar if desired. Double stove enamelled

Guaranteed twelve months. Nee'ver say more ! ! !

NOTE ! ! ! Our £8 8s. Model weighs 78 lbs. only, not between 1 and 2 cwts., as suggested

We have the under-mentioned dates open for delivery for various 1912 Models.

ALL FULLY GUARANTEED.

RUDGE, 3½ h.p., standard	Ex-stock	
RUDGE, 3½ h.p., clutch	Ex-stock	
RUDGE, 3½ h.p., multi-speed	March	
ZENITH, 3½ h.p., Gradua gear	Ex-stock	
ZENITH, 6 h.p., Gradua gear	Ex-stock	
DOUGLAS, 2¾ h.p., Model G	March	9
HUMBER, 2 h.p., 3-speed	Feb.	
ROVER, 3½ h.p., clutch model	Feb.	
NEW HUDSON, 3½ h.p., 3-speed	Ex-stock	
BRADBURY, 3½ h.p., standard	Ex-stock	
BRADBURY, N.S.U., 2-speed	Feb.	
BRADBURY, chain drive, 2-speed	March	
ENFIELD, sidecar combination	Feb.	14
INDIAN, 7 h.p., 2-speed	Feb.	19
BAT, 4 h.p., 2-speed	March	25
BAT, 6 and 8 h.p., two speeds	April	1
SCOTT, 3½ h.p., two-stroke	April	25
A.J.S., 5 h.p., chain drive, 2-speed	May	20
HUMBER, 3½ h.p., two speeds	June	1
REX, 6 h.p., sidette	From stock	
REX, 5 h.p., De Luxe	Ex-stock	
REX, all other models	10 days	
CLYNOS (Halifax stocks only)	Feb.	
A.C. Sociables	March	14

List of Second-hand Machines for disposal, continued from other column.

TRIUMPH, 1908 model, 3½ h.p., frame cut down at rear, XL All saddle, very low built £30

REX Utilette, 1911 model, water-cooled, two-seater, chain drive, two speeds, handle starting. This has only been used for fifty miles, and is admirably suited for a tradesman's carrier £50

MOTOSACOCHE, 2½ h.p., M.O.V., 1911 model, free engine, Whittle belt, Druid forks, adjustable pulley, as new £28

REX, 5 h.p., 1910½, de Luxe, two speeds, Bosch magneto, tyres like new, complete with P.M.C. sidecar £46

REX, 1908 model, 5 h.p., just been re-enamelled and plated, handle bar control, a bargain . £14

J.A.P., 1910, 4 h.p., Chater Lea frame, Bosch magneto, low built, very fast £25

ANTOINE, 5 h.p., twin, very low, footrests long handle bars, coil and accumulator ignition £16

We have numerous other machines for disposal. Send us your requirements. Cash or exchange.

CASH OR EXCHANGE

MAUDES' MOTOR MART

136 GT. PORTLAND ST. LONDON W

MOTOR BICYCLES FOR SALE.

1912 3½h.p. Rover, Armstrong 3 speeds, special sidecar type.—In stock at Timberlake's, Wigan.

1912 3½h.p. Twin Premier, 2 speeds, special sidecar machine.—In stock at Timberlake's, Wigan.

1912 3 h.p. New Hudson, Armstrong 3 speeds.—In stock at Timberlake's, Wigan.

1912 3½h.p. Rudge, free engine model.—In stock at Timberlake's, Wigan.

1912 3½h.p. Rudge, standard model.—In stock at Timberlake's, Wigan.

1912 2½h.p. Twin Royal Enfield, 2-speed, enamelled grey.—In stock at Timberlake's, Wigan.

1912 2½h.p. Premier Lightweight, Armstrong 3-speed.—In stock at Timberlake's, Wigan.

1911 3½h.p. Premier, standard, new July, very little used; a bargain, £30.—Timberlake, Wigan.

1910 3½h.p. Premier, standard model, lamp, generator, horn, all spares and tools, very fast; £30.—Timberlake, Wigan.

1911 3½h.p. James, Roc 2-speed, Palmer cords, never used, shop-soiled only; list £58, accept £40 to clear.—Timberlake, Wigan.

1911 Triumph, free engine, perfectly new, delivered Christmas, fitted 1912 Dunlop non-skids; £50 to clear.—Timberlake, Wigan.

1911 3½h.p. Rex Speed King, only used 400 miles special machine; accept £50. — Timberlake, Wigan.

1911 2h.p. Humber Lightweight, very little used; 20 guineas.—Timberlake, Wigan.

HUMBER, 3½h.p., 2-speed gear, 1909, excellent condition, recently overhauled by makers; accept £47. —Timberlake, Wigan.

TRIUMPH, 1911½, free engine, lamp, horn, etc., as new; £45.—J. L. Yates, Lowton, Newton-le-Willows.

2h.p. Humber, in excellent order, been little used, tyres equal to new; £25.—Carnforth Motor Co., Carnforth.

CLYNOS and Rudge, multi-speeds; deliver March; book now to secure. — Smith, Motor Agent, Horbury.

1911½ 5-6h.p. Twin Rex, splendid order, offers; 1912 Premiers and Clynos; cash or exchange.—Below.

REXES, new 1911 models; discount for cash, liberal exchanges.—Motor Exchange, Westgate, Halifax.

1912 Bradburys; deliveries from stock; exchanges made with any other make.—Collier's, Westgate, Halifax.

LIVERPOOL Official Agents for Humber, Ariel, B.S.A., and Dot.—Henry Wimlock and Co., 40, Hope St.

ROYAL Enfield, 2¾h.p., accumulator, h.b.c., chain drive, running order; £10, offers.—Hemingway Flowergate, Whitby.

1911 3½h.p. Rex Tourist, free engine, as new, not run 300 miles, spares, etc.; £35.—Fredk. Larrad, Horbury, Wakefield.

PRESTON and Blackpool.—Sole agents for Matchless motor cycles in stock; all J.A.P. spares in stock; quick deliveries.—Below.

3½h.p. 1909 Triumph, new tyres, in perfect order, cheap; two really good sidecars cheap.—Below.

FOR anything in the motor cycle line write to Bert Hamilton and Co., motor cycle specialists, Friargate, Preston. Tel.: 62.

1911 Bradbury, perfect condition; £37.—Lamb, Otley Rd., Guiseley, near Leeds.

1911 Bradbury, 3 h.p., ridden 500 miles, like brand new £36.—359, Oxford Rd., Manchester.

1911 Lightweight Premier, ridden 50 miles only; £29. Howarth, 107, Willis St., Warrington.

SINGER, 3½h.p., magneto, h.b.c., B. and B., new belt, tyres, enamelling as new, £13.—65, Hilden St., Belton.

1912 Standard Triumph, just delivered, not yet been out, £46, or nearest offer.—22, Durham Rd., Blackpool.

ROYAL Enfield, 1910, khaki enamelled, lightweight, little used, splendid machine — Golby, Bradford Rd., Batley.

BRADBURY, 1912 standard model in crate; first reasonable offer.—Box No. 9,564, *The Motor Cycle* Offices, Coventry.

INDIAN 1911½, 2-speed, free engine model, equal new, cost £75, sacrifice 50 guineas.—Golby, Bradford Rd., Batley.

TRIUMPH GRADUA, late 1909, fine order, new belt and tyre, h.p. climber; £35.—9,570, *The Motor Cycle* Offices, Coventry.

ARIEL, 5½h.p., 1911 model, de compressor, free engine, variable gear, spring seat pillar, new; cheap.—Gornall, Pilling, Garstang.

UNRATED 1912 Standard Bradbury; sacrifice for £46 for quick sale; owner bought car.—Gibson, Elm Grove, Bromley, Leeds.

ARIEL, 1911, F.E., variable gear, easy starting device; any trial allowed; £35; with all accessories.—Barlow, Dinnington, Rotherham.

OFFERS.

We consider any reasonable cash offers for machines listed herein. Give us a visit. It will pay you.

WE GUARANTEE EVERY SECOND-HAND MACHINE WE SELL.

A selection from our list of good reliable second hand machines:

PREMIER, 1910 model, 3¾ h.p., twin, Dunlop tyres, Bosch magneto, very fast, and suit sidecar	£32
N.S.U., 1910 model, 3½ h.p., magneto, good tyres, handle-bar control, spring forks, condition as new	£28
CALTHORPE, 1911 model, 3½ h.p., Precision engine, Hutchinson tyres, not done 1,000 miles, magneto, handle-bar control	£36
REX, 1911 model, 5 h.p., tourist, condition equal to new, M.O.V., spring forks, B. & B. carburetter, handle-bar control, Bosch magneto, Rey whistle, trials machine, and gold medal winner	£35
REX, 3½ h.p., 1911 model, like new, cone clutch model, only used 100 miles for trials, perfect	£38
V.S., 1910 model, 7-9 h.p., two speeds, Nala gear, Truffault spring forks, finished cream, Bosch magneto, very fine sidecar mount, just been thoroughly overhauled	£39
SCOTT, two-stroke, two speeds, free engine, spring forks, Palmer tyres, water-cooled head, spring footboards	£25
REX, 1907 model, 5 h.p., twin-cylinder, free engine, spring forks enamel and plating as new, a bargain	£16
N.S.U., 1908 model, 5½ h.p. twin, very low built, magneto, two speeds free engine, admirable sidecar machine	£26
HUMBER, 1911 model, 3½ h.p., two speeds, free engine, handle starting, had very little and very careful usage	£37
F.N., 1909 model, four-cylinder, spring forks, Bosch magneto, shaft drive, complete with rigid sidecar, fine turnout	£30
REX, 1908 model, 3½ h.p., two speeds, handle starting, Bosch magneto, spring forks, fine sidecar mount	£22
N.S.U., 1908 model, 3½ h.p., very low built, spring forks, magneto	£20
PHOENIX, quad car, 8 h.p., Fafnir engine, two speeds, wheel steering, reverse, Bosch magneto	£30
V.S., 1908 model, 5 h.p., twin, just been overhauled, Truffault forks, Bosch magneto, for spot cash	£26
PEUGEOT, 7-9 h.p., very low built, Bosch magneto, pan seat, 2½in. tyres, very powerful ..	£26
ARIEL, 1910 model, 3½ h.p., free engine, M.O.V., Bosch magneto, very fine solo mount	£30
REX, sidette, 1911 model, 7 h.p., two speeds, Bosch magneto, handle starting, coach-built, sidecar	£52
REX, 6 h.p., **Speed King,** magneto, spring forks, very fine machine	£50
MATCHLESS, 4 h.p., 1911 model, grey finish, Palmer Cord tyres, not done 50 miles	£38
KERRY-ABINGDON, 3½ h.p., 1910 Clutch Model, handle-bar control, padded saddle, very good condition	£32
N.S.U., 5 h.p., spring forks, studded tyres, magneto ignition, cream finish	£18
HUMBER, 1909½ model, 3½ h.p., two speeds, handle starting, very fine sidecar mount ..	£31
REX, 1911 model, 7 h.p., two speeds, handle starting, spring forks, Bosch magneto, very fine sidecar mount	£48
MINERVA, 4½ h.p. twin, M.O.V., steel-studded rear tyre, spring forks, just been overhauled, plated and re-enamelled	£21
TRIUMPH, 1909 model, magneto, spring forks, very fine solo mount	£30
REX, 1908, 5 h.p., 2-speed, De Luxe, magneto, spring forks, complete with sidecar	£31
F.A.C., 1911 model, 7 h.p., four-cylinder, three speeds, handle starting, worm drive, magneto	£45
TRIUMPH, 1909 model, 3½ h.p., two speeds, free engine, Bosch magneto, complete with Lucas lamp, Millford sidecar	£49
REX, 1910 model, 5 h.p., two speeds, magneto, spring forks, very fast and good sidecar machine	£40

We have numerous other machines for disposal. Send us your requirements. Cash or exchange.

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136 GREAT PORTLAND STREET,
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Telephone 552 Mayfair
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(LISTS POST FREE)

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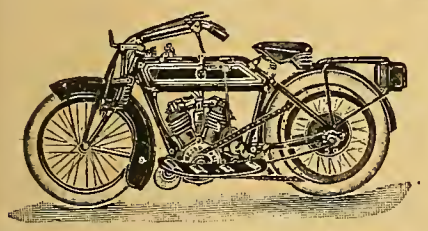
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Largest Rex Dealers,

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'Phone, 766. Telegrams, "Perfection."

Brand New 1911 3½ h.p. Tourist **REX** ..... **43 Gns**
" " 1911 2¾ h.p. Two-speed **REX** Junior.. **50 Gns**
" " 1911 3½ h.p. Free-engine **REX** ..... **43 Gns**
" " 1911 3½ h.p. **REX DE LUXE** ..... **57 Gns**



Also 1911 New 2-speed Twin **REX DE LUXE** as per illustration..... **60 Gns.**

Discount to Cash Buyers.

Exchanges entertained.

GUARANTEED IN RUNNING ORDER.

6 h.p. Magneto **G.B.**, spring forks £23 10
1912 2¾ h.p. Two-speed **REX** Junior £45 0
1912 Twin **REX** Sidette In stock £75 0
1911 3½ h.p. Plate Clutch **TRIUMPH**, only 500 miles £17 10
1911 3½ h.p. Tourist **REX**, done 750 miles £32 0
1911 2¾ h.p. Two-speed **REX** Junior, as new £39 10
1911 3½ h.p. **REX** Clutch Model £37 10
1911 5 h.p. Two-speed **REX DE LUXE** £47 10
1910 7 h.p. **REX DE LUXE**, two speeds £43 0
1910 7 h.p. Twin **REX**, HOT STUFF £37 10
1910 5 h.p. Twin **REX**, very fast £29 10
1910 5 h.p. **REX DE LUXE**, fine sidecar machine £42 10
1910 3½ h.p. **REX**, very fast, special machine £27 10
Two-speed Free-engine Twin **REX DE LUXE** £27 10
1909 3½ h.p **REX**, magneto, Druid fork £24 10
1909 2¾ h.p Two-speed **REX DE LUXE** £32 10
5½ h.p. Two-speed Twin **ROC**, magneto, Druids .. £32 10
1908 3½ h.p Magneto **REX**, very fast £22 10
1907 3½ h.p Magneto **REX**, spring forks £19 19
5½ h.p. Twin **REX OE LUXE**, Roc clutch, sp. forks £22 10
Brand New 3½ h.p **REX**, spring forks, and pedals £31 0
Brand New Twin Magneto **REX** £37 15
3½ Two speed **N.S.U.**, smart £21 0
1908 **TRIUMPH**, very powerful £28 10
Magneto **TRIUMPH**, spring forks, specially low .. £25 0
3½ h.p. **REX**, very fine condition £15 10
Four-cylinder **F.N.**, magneto, spring forks £18 18
F.N. Magneto Lightweight £16 10
3½ h.p. Magneto **FAFNIR**, M.O.V. £19 0
3½ h.p. **WOLF**, Stevens engine, h.b. control £12 10
Twin Magneto **MOTO-REVE** £17 10
3 h.p. **QUADRANT**, low frame £10 10
3 h.p. **HUMBER**, chain drive £9 10
MOTOSACOCHE, Druid forks £14 10
2¾ h.p. **KERRY**, spring forks £10 10
3½ h.p. Magneto **MINERVA**, H.B. control £19 10

Easy Payments at Special Rates.

£4 DOWN and 5/- weekly secures prompt despatch of any of these machines.

3 h.p. **QUADRANT**, V belt, h.b. control, spring forks £12 10
Lightweight **MOTOSACOCHE**, spray, runs well .. £14 10
3 h.p. **QUADRANT** £10 10
2¾ h.p **KERRY**, spring forks £19 10
Twin Magneto **MOTO-REVE** £17 10
3½ h.p **WOLF**, spray, smart, h.b. control £12 10
3 h.p **HUMBER**, chain drive..... £9 10
5½ h.p Twin **REX**, spring forks £16 10
3½ h.p. **REX**, spring forks, reliable £15 10

1912 **BRADBURY** **REX** | **IN STOCK. LIBERAL EXCHANGES.**

£7 deposit and 10/- weekly secures—

Magneto **TRIUMPH** £25 10
5½ h.p. Twin **REX DE LUXE**, mag. £22 10
Four-cylinder **F.N.**, magneto £19 19
3½ h.p. Magneto **REX** £19 19
Twin **MOTO-REVE** £19 19
F.N. Magneto Lightweight £19 19
3½ h.p. Magneto **MINERVA**, H.B. control £19 10

TYRES. SPECIAL PRICES.—Approval.

26 x 2 and 26 x 2¼ Clipper and Continental Covers 12/9
26 x 2½ Michelin Heavy Tricar Covers 25/-

MOTOR BICYCLES FOR SALE.

LATE 1911 Premier, 3½h.p., clutch model, condition a anew, only done 1,000 miles; 40 guineas, or near offer.—103, Derby St., Bolton.

1912 Triumph, clutch model, 3½h.p., under 100 miles, while waiting for other mount; guaranteed; £50. —Dimmock, Prince's Sq., Harrogate.

BROWN, 3½h.p., Simms 1911, B. and B. 1910, all h.b.c., new belt and tyres, lamp, spares; £16, offers.—Shephard, Litwell Vale, Rotherham.

TRIUMPH, 1907, 3½h.p., magneto, lately overhauled at Triumph works. 1911 cylinder, speedometer, watch; £25.—Mayor, 6, Wharf St., Preston.

8h.p. Chater-Lea-Jap, No 7 model, 1911, guaranteed perfect, and only been 704 miles, first reasonable offer.—H. Raine, Station House, Ferrybridge.

REX, 5-6h.p. Roc F.E., handle starter, Bosch, Whittle, B and B., cantilever seat, new studded back tyre, etc.; £24.—16, Cheshum Rd., Bury, Lancashire

FREE Engine Triumph, late 1911, only run 154 miles, absolutely as new, horn, lamp and Jonas £3/10 speedometer; £54, bargain.—Warriner, York

TRIUMPHS.—Several in stock, free engine and standard models.—Agent, Warriner, York

TRIUMPH, late 1906, 3h.p., magneto, tank control, in good order new studded Dunlop tyre on back, and new Dunlop belt, spares, two tubes, belt, horn, etc. —Warriner, York

BRADBURYS, 3½h.p., 1912 standard model, immediate delivery, £48; another, 3½h.p., 1911 standard, little used, bargain, £37/10.—Williams Bros., Lytham

LIVERPOOL Official Agents for Bradbury, Zenith, Singer, Rex, Clyno, Moto-Reve, delivery from stock.—F. C. Jones and Co., 3, Redcross St. Liverpool

ARIEL, 3½h.p., 1911, decompressor, free engine, variable gear, spring seat-pillar, not scratched, £40 cost £51; with sidecar £44.—Jones, motor dealer, Horwich

LATE V.S., 2-speed, castor sidecar, new Whittle, B and B O.G. pulley 1912 buying car, perfect — C/o Rusholme Automobile Co., Rusholme, Manchester

1911 Premier 3½h.p., new July, auxiliary exhaust, etc., powerful bargain, £38, sidecar, Millford, nearly new, £6/10.—Box 9,571, *The Motor Cycle* Offices, Coventry

1911 Premier, £34; 1911 Bradbury, £35; 1910 Triumph £35; 1910 P and M., £38; 1912 Triumphs, P and M's, Bradburys, Ivy motor cycles.—T. Reed Nettlesworth

ARIEL J.A.P., 6h.p. twin, dry battery ignition, 1911, B B good tyres in perfect running order, with sidecar lamp, horn, tools, complete; £20.—151, Effingham St. Rotherham

8h.p. 1911 Inter Bat and Sidecar, £55; 5h.p. 2-speed V S, £30, 3½h.p. chain-driven Rover £15, good stock of Triumphs, Douglas always in stock.—Geo Wray, Virginia St., Southport.

3½h.p. Bradbury, B. and B., h.b.c., spring forks, Rom 32 combination, bearings re-bushed, enamel and plating perfect, low built, footrests; £15.—119, Rocky Lane, Monton, Manchester

FOR Early Delivery of P and M., Zenith, Scott, Matchless, Bradbury, Douglas, and A.J.S., also Millford sidecars with Welbrown bodies. W.F and Co., 5 Cheltenham Parade, Harrogate

IN Stock, Zenith, Bradbury P and M., Millford sidecars, in a few days Douglas and Matchless.—W F and Co., as above

LADY'S Free Engine Moto-Reve, 1911, aluminium finish, Autoclipse lamp horn, like new, cost £48, take £35 also F E Rudge, in perfect condition, tyres unpunctured lamp horn, £42.—Coates, Ainsdale

LIVERPOOL Agency for Triumph and Matchless Motors, Hitchings, Ltd., 74, Bold St., Liverpool, the pioneers of motor cycling in the North. It will pay you to deal with Hitchings, Ltd., an old-established firm of highest repute.

HITCHINGS, Ltd., for Triumph and Matchless Motors, any make supplied on most favourable terms; exchanges arranged; absolute satisfaction and courteous service assured by dealing with Hitchings, Ltd., 74, Bold St., Liverpool. Established over 30 years.

1911 Bargains.—Bradbury, shop-soiled, £39; 2¼h.p. 2-speed F.N., in splendid order, £32; 3½p.p. Premier, run 150 miles, £33; 14-guinea Millford castor cane sidecar, hardly used, £11/5.—The Brighouse Motor Agency, Bailiffe Bridge, Brighouse.

1911 Royal Enfield 2¾h.p., 2-speed, chain drive, new, £39; 1911 Triumph, free engine, £45; 1910 Triumph, free engine, £38; 1909 Triumph, free engine £34. 1909 Triumph, £28.—Thompsons, Triumph agents, Moor, Sheffield.

1911¼ Free Engine Singer, 3½h.p., not used till Aug., 1911, in perfect condition, no worse than new, with numerous spares; reason for selling, buying new model; sacrifice, £40 or near offer.—E. Burras, Park Terrace, Kirkby Stephen.

1911 T.T. Roadster Triumph, full touring and racing equipment, very fast machine, complete set of spares, including Triumph racing handle-bars, racing tank and saddles, special valves and jets, spare front wheel with tyre complete, 2 belts, spare pulley flange, double-pole plug, etc., h.b.c. to magneto, and many 1912 improvements; first offer over £40. — Norman Longfield, Laurel Bank, Ilkley, Yorkshire.

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Taken on any Machine or Runabout.

NO EXTRA CHARGE ON MOST MAKES.

TERMS: QUARTER DOWN, BALANCE IN TWELVE EQUAL MONTHLY PAYMENTS.

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BRADBURY, 1912, standard ..... In stock £48 0
BRADBURY, 1912, T.T. ..... " £48 0
BRADBURY, 1912, free engine ..... " £54 10
BRADBURY, 1912, two-speed ..... " £55 0
RUDGE, 1912 standard model..... " £48 15
RUDGE, 1912 T.T. ..... " £48 15
RUDGE, 1912 free engine..... " £55 0
ZENITH, 1912, 3½ h.p..... " 53 Gns.
ZENITH, 1912, 6 h.p. ..... " 67 Gns.
ZENITH, 1912, 8 h.p., six days ..... " 69 Gns.
BAT, 1912, 3½ h.p., two-speed..... " £59 0
BAT, 1912, 6 h.p., two-speed ..... " £70 12
BAT, 1912 6 h.p.; standard model .... " £58 0
BAT, 1912; 8 h.p.; standard model .... " £60 0
TRIUMPH; 1912, standard model ..... " £48 15
TRIUMPH, 1912, free-engine model .... " £55 0
DOUGLAS, 1912, model H two-speed .. " £47 0
DOUGLAS, 1912, model G ..... " £41 0
F.N., 1912, 2¾ h.p., two-speed gear ..... " 45 Gns.
F.N., 1912, 5-6 h.p. ..... " 50 Gns.
SINGER, 3½ h.p., 1912, free engine..... " £55 0
LINCOLN ELK, 1912 3½ h.p. ..... " £34 0
LINCOLN ELK, 1912 3 h.p. ..... " £30 10
LINCOLN ELK, 1912, 2¾ h.p ..... " £28 10
CHATER-LEA, 1912, No 7 three-speed " £79 16
BEDELIA Cars..... (6 days), 7½% extra E.P. 59 Gns.
G. & N. Runabouts, 8 h.p. (in 6 weeks) " 87 Gns.
A.C., speed sociable type (in Feb.) .. " £87 10

Any other makes on application.

ABOVE MACHINES FOR IMMEDIATE DELIVERY. NO WAITING THREE WEEKS.

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From £28 10s.

Sole London Agent for the famous LINCOLN ELK. Finest value on the market for quality and reliability. All models on view and for immediate delivery.

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LIBERAL DISCOUNTS ALLOWED.

Second-hand Machines at Bargain Prices to clear.

BAT, 8 h.p., 1910, with Millford sidecar £40 0
HOBART, 2¾ h.p., new 1911 ..... £29 0
F.N., 6 h.p., good order..... £18 0
REX, 5 h.p., 1909, two-speed £25 0
LINCOLN ELK, 3½ h.p., 1911 clutch, and sidecar . £30 0
PRECISION, 2½ h.p. 1911, almost new £25 0
DOUGLAS, 1910, fine order £24 0
TRIUMPH 1910, free engine £37 0
TRIUMPH, 1910 free engine, splendid order £38 0
TRIUMPH, 1909, splendid order £28 0
BRADBURY, 1911, 2-speed gear £35 0
BAT, 5 h.p., T.T., condition like new, bargain.... £50 0
REX, 4 h.p., T.T., twin, 1911 model, splendid order £24 0
DOUGLAS, 1911, Model D, all accessories £26 0
ZENITH, 1910, good order £75 0
ZENITH, 1911 3½ h.p. £39 0
ZENITH, 1911, 3½ h.p. £10 0
ZENITH, 1911, 3½ h.p. £12 0
TRIUMPH, 1910, F.E. £11 0
J.A.P.-CHATER-LEA, 1911, 2¾ h.p., sp. f'ks., mag. £18 0

All Accessories included on S.H. at the price advertised.



THE £4 - 10 REY Sidecar £3 - 10

With Hutchinson or Michelin 26 x 2¼ Tyre and Tube, 30/- extra.

The famous "REY" EXHAUST WHISTLE now reduce to 12/6 each. Triumph standard type.

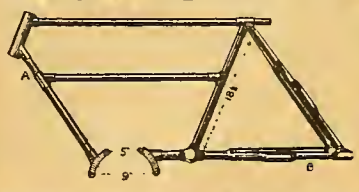
The "REY" Leather Belting outlasts two of any other makes. Price 2/- per foot.

Special Discounts to Trade.

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

REY, 5, HEATH STREET, HAMPSTEAD.

HIGH-CLASS



Motor Cycle Frames.

We have a quantity of frames by well-known maker

PRICE 32/6 each.

Rigid forks, 7/6 extra. Druid forks, 45/- extra. Enamelled and plated in first-class style.

OUR 1912 SIDECARS

are going strong.

Without any extra charge we now fit lamp, stand, foot mat, and quick detachable joints.

PRICES.

MODEL DE LUXE	£8 5
MODEL C, cane body	£7 0
MODEL E, with child's seat	£7 6
MODEL D, coach-built	£8 0

Carriage paid to your home.

OUR quick detachable joints are a treat.
OUR cranked back axles are extensively copied.
OUR design is the safest on the market.
OUR 12 months' guarantee is honestly carried out.

ALL COMPLETE with MUDGUARD AND CONTINENTAL OR MICHELIN TYRES.

Discount to the trade.

Delivery from stock to suit TRIUMPHS, REXES, P. & M.'s, N.S.U.'s, etc.

LIGHT STRONG AND SPLENDID VALUE.

SPRUNG LIKE A CAR.

Round or Car pattern mudguards at customers' option.

1912 MICHELIN TYRES.

26 x 2¼in. Covers	18/8
26 x 2¼in. Tube	8/8

POST FREE.

TYRES.	TYRES.	TYRES.
Heavy Rubber-studded Covers, 26 x 2¼		18/6
26 x 2¼ Hutchinson Heavy T.T. Covers		25/-
26 x 2 and 26 x 2¼ Wired-edge Covers		12/6
Continental Rubber Non-skids, 26 x 2¼ or 2½		30/-
Hutchinson, ribbed tread, 26 x 2¼in.		18/6
Continental, beaded, 26 x 2		18/6
Tubes, all sizes, guaranteed		8/6
New Butted Tube, 26 x 2¼		8/8
New Butted Tube, 26 x 2½		8/3
Special Heavy 26 x 2¼ Tubes, guaranteed		7/8

MISCELLANEOUS BARGAINS.

Mabon Clutch, fits twin Rex	55/-
Bronks B100 Saddle	8/6
Brooks B105 Saddle	11/6
Lycett's L100 Saddle (new)	11/6
Lycett's ditto, padded top (new)	14/6
Cocoa Fibre Sidecar Footmats	3/-
Soided Amac Carburetters, h.b. control	15/-
Second-hand ditto	12/6
New Bosch D A V Twin Magneto, 48°	£4 4
Bosch Magneto, DA2, single-cylinder	57/6
Rex Pattern Belt Rim Brake, new	6/6
1910 Amac Carburetter, h.b. control	16/-
Lycett's Carrier Toolbags new	7/6
1 h.p. Electric Motor, 230 volts	£7 0
New 4 h.p. N.S.U. Engine, perfect	£7 0
3½ h.p. Rex Engine, M.O.V.	£5 10
6 h.p. stationary engine, carburetter, coil, etc.	£6 0
Sidecar lamps, show red light behind	7/6
Trailer 26in. wheels	25/-
New Toolbags, 9 x 6 x 3½in.	4/6
Sidecar Aprons, green or red, with studs	7/6
Druid Spring Forks, new	£2 6
New Lycett's Tubular Carriers	4/11
New Lamp and Generator, plated	12/6
Longuemare Carburetters	6/-

FARRAR'S
MOTOR EXCHANGE,
19, 21, 23, 25, Hopwood Lane,
HALIFAX (Two minutes from G.P.O.)

Telephone 919.

MOTOR BICYCLES FOR SALE.

1911 Bradbury, excellent condition, run 800 miles, guaranteed, picked engine, very fast, reliable and powerful, h.b.c., magneto, high and low compression dome sets, many spares; any expert examination or trial by appointment; offers invited. — 15, Seedley View, Seedley Park, Manchester.

A FEW High-class Bargains.—1912 Morgan runabout, 1912 hood, screen, £97/10; 1910 8h.p. Jap-Bat, £36; 1910 Triumph, £35; ditto, 1911, £39; 1911 Triumph, shop-soiled, £46; 1911 Royal Enfield, shop-soiled, £39; new Moto-Reve twin, shop-soiled, £32/10; 1911 Rex, 5-6h.p., 2-speed, £45; ditto, £42/10; three 1910 Indians, 5-6h.p., £32/10 each; 2 1910 N.S.U.'s, 5-6h.p., 2 speeds, £32/10 each; 5-seater Humber car perfect, £145; 6h.p. Rover car, perfect, £60; 1911 F.E. Calthorpe, £45; 1911 Premier, as new, £39; 1911 8h.p. Matchless, £52/10; 1910 F.E. Motosacoche, £25; Moto-Reves from £15 to £30; 1910 Royal Enfields, £25 to £28; Triumphs, all ages; 1910 and 1911 Rex Speed Kings, £27/10 to £35. Besides these 200 more, all sorts and sizes. Weekly lists waiting. All sold on approval; money returned if not satisfactory.—Hitchens, Morecambe.

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

ZENITH, 3½h.p., 1912, latest, just arrived; 55 guineas cash.—Pepper, Piccadilly, Hanley, Staffs.

ZENITH, 6h.p., 1912, latest; immediate delivery; 67 guineas, cash.—Pepper, Piccadilly, Hanley, Staffs.

CLYNO, 1912; delivery early February.—Pepper, Piccadilly, Hanley, Staffs.

HUMBER, 1911, 3½h.p., new machine, last of contract; only £39.—Pepper, Piccadilly, Hanley, Staffs.

HUMBER, 2h.p., 1911 new machine; only this one: £32.—Pepper, Piccadilly, Hanley Staffs.

QUADRANT, 3h.p., excellent running order, spring forks, Brooks saddle, B. and B. carburetter, h.b.c.; only £10.—Pepper, Piccadilly, Hanley, Staffs.

1911 Triumph, free engine, bike and tyres perfect; £40.—Oakley, Station St., Hednesford.

BRADBURY, 3½h.p. 1911, just been overhauled: £30.—Hughes, 56, The Downs, Altrincham.

PHELON and Moore and Scott, new machines; actually in stock, no waiting.—Moss, Wem.

1911 Rover, listed 55 guineas; quick sale 40 guineas, and spares.—Horsley, Castle Dykes, Malton.

ARIEL, 3½h.p., 1910, free engine, variable gear; £27/10.—R. Tonks, Ferndale, Manor, Willenhall.

TRIUMPH, 1911, 5 months old, perfect condition; £42.—C., White Lodge, Bromborough, Cheshire.

OFFER Wanted for 1912 4h.p Indian, new, and in crate.—Box 9,569, *The Motor Cycle* Offices, Coventry.

3½h.p. 4-cyl. F.N., lowered frame, new Kempshall 32 back, spares; £15. — H., 145, Waterloo Rd., Wolverhampton.

1911 Douglas, bought end of Oct., done 500 miles, not soiled; £32, or near; any trial.—Fox, Barracks Golf Club, Lichfield.

TWO Ariels.—1911 3½h.p. decompressor, variable, £32; 3½h.p., accumulator, and sidecar, £15.—Berriford, grocer, Draycott, Derby.

1912 Triumphs, Bradburys, Zenith Graduas, Douglas, Enfield, to be seen in stock at Paskells and Keys Motor Depot, 250, Stafford St., Walsall.

1912 Free Engine Bradburys in stock at the Motor Depot, Paskells and Keys, 250, Stafford St., Walsall. Secure now and avoid disappointment.

1911 Zenith Gradua, 6h.p. twin, C., new.—Paskells and Keys Motor Depot, 250, Stafford St., Walsall.

1912 Douglas.—All models, any date given; lists free. Post for one at once.—Paskells and Keys, The Motor Depot, 250, Stafford St., Walsall.

1912 Zenith Gradua, 3½h.p., the only real variable gear motor cycle; no waiting.—Paskells and Keys Motor Depot, 250, Stafford St., Walsall.

TRIUMPH, 1911, clutch model, Solar lamp and generator, spare valve, etc., splendid condition; £46.—9,553, *The Motor Cycle* Offices, Coventry.

PHELON and Moore, 2-speed, 1909, in good condition, with castor wheel sidecar; £38, or separately.—H. Marston, 542, New Chester Rd., Rock Ferry.

1911 Bradbury (April), not done 800 miles, butted tubes and spare, unpunctured, 2 new Lycos; full particulars on request.—43, Edleston Rd., Crewe.

7h.p. 1911 Indian, 2 speeds, free engine, foot clutch, new condition throughout, only done 600 miles, most luxurious sidecar machine; £50.—R. Else, Leawood, Matlock.

B.S.A. Motor Cycles, 2-speed, free engine; also B.S.A. free engine motor cycle, only been used for testing; particulars on application.—W. A. Gorton, Darlington St., Wolverhampton.

2h.p. Turquin-Courdert, can be ridden away, 26in. wheels, vertical engine, Longuemare carburetter, brand new Prested accumulator; bargain, £4.—W. Jones, 54, Rhosddu Rd., Wrexham.

LATEST BARGAINS.

Big Discount to Cash Buyers.

1912 MACHINES IN STOCK.

1912 3½ h.p. **BRADBURY,** single speed	£40 0
1912 3½ h.p. **BRADBURY,** 2 speeds	£55 0
1912 3½ h.p. **New Hudson,** 3 speeds	67 Gns.
1912 2¾ h.p. **New Hudson,** 3 speeds	47 Gns.
1912 2¾ h.p. **A.J.S.,** 2 speeds, chain drive	47 Gns.

LIGHTWEIGHTS.

1¾ h.p. **Wolf,** A.J.S. engine, magneto	£15 0
2¾ h.p. **Caswell,** vertical, Bosch, Amac, h.b. control	£12 0
1910 2¾ h.p. **Moto-Reve,** magneto, Druids	£22 0
1910 2¾ h.p. **Moto-Reve,** extra fine order	£23 0
1909 2¾ h.p. Twin **Moto-Reve,** 50 x 70 mm.	£20 0
1908 Twin **Moto-Reve,** magneto, Druids	£15 0

SINGLE-CYLINDER REXES.

1910 3½ h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p. 1908 Featherweight Rex, Bosch mag.	£17 0

TWIN-CYLINDER REXES.

1911 5-6 h.p. de Luxe, M.O.V., two speeds	£44 0
1909 5-6 h.p. de Luxe, two speeds, fine	£34 0
1906 5-6 h.p. Twin **Rex,** Mabon clutch	£16 10
5-6 h.p., Bosch, Lloyds variable gear	£2[illegible]
5-6 h.p. de Luxe, two speeds, M.O.V.	£48
5-6 h.p., de Luxe, 1908, two-speed model	£28 0
5-6 h.p., de Luxe, 1908, two speeds, special	£29 10
5-6 h.p., 1908, two-speed de Luxe, 1909 eng.	£32 0

N.S.U.'s. N.S.U's N.S.U.'s

5 h.p. Twin, Bosch magneto	£18 6
1910 6 h.p., M.O.V., two speeds	£33 0

OTHER MAKES. OTHER MAKES.

1911 **Rudge,** free engine, new Nov.	£45 0
1911 3½ h.p. **Singer** Clutch Model, done 200 miles	£43 0
3½ h.p. **M.C.,** 1910 model	£29 0
3 h.p. **Singer,** Bosch, V belt drive, B. & B.	£18 0
3 h.p. **Quadrant,** Bosch, B. & B., spr. forks	£18 0
3½ h.p. **Quadrant,** h.-b. control, spring forks	£18 0
1¾ h.p. **Minerva,** V belt	£4 10
3½ h.p. **Minerva,** Bosch magneto, Amac	£22 0

SIDECAR COMBINATIONS.

5-6 h.p. Clutch Model **Rex** and new Sidecar	£29 0
5-6 h.p. Two-speed 1908 **Rex** and Sidecar	£33 0
7-9 h.p. Two-speed **Rex** and Sidecar	£53 0
1910 6 h.p. **N.S.U.,** M.O.V., two speeds, complete with N.S.U. coach-built sidecar	£38 0

All fitted with Magneto and Spring Forks.

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3 h.p. **Minerva,** M.O.V	£9 0
3 h.p. **Rex,** vertical engine	£9 0
3½ h.p. **Brown Bicat,** M.O.V. 26in. wheels	£12 0
1¾ h.p. **Minerva,** V belt, spray carburetter	£5 0

£4 DOWN SECURES ANY OF THESE. BALANCE 6/- WEEKLY.

3½ h.p. **Quadrant,** h.-b. control, spring forks	£16 0
3 h.p. **Quadrant,** h.-b. control, Bosch mag.	£16 0
3 h.p. **Singer,** Bosch magneto, h.-b. control	£16 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

4½-5½ h.p. **N.S.U.,** Bosch mag. h.-b. control	£18 0
1910 2¾ h.p. Twin **Moto-Reve**	£22 0
1909 2¾ h.p. Twin **Moto-Reve**	£20 0

CARS AND TRICARS.

5 h.p. **Humber** car, two-seater, good goer	£22 0
6½ h.p. **Peugeot** car, two-seater	£35 0
Quocar, Bosch magneto	£45 0

MISCELLANEOUS BARGAINS.

New Screwcutting Lathe, 4in. centres	£6 10
Fulford Castor Wheel Sidecar	£5 0
Prested Accumulators, new, 15 amp.	8/6
Tricar Frame, suit 6 h.p. engine	36/-

Farrar's Motor Exchange
19, 21, 23, 25, Hopwood Lane,
HALIFAX (Two minutes from G.P.O.)

Telephone 919.

In answering these advertisements it is desirable to mention "The Motor Cycle."

SCOTT'S
HALIFAX,
UNEQUALLED
IN THE NORTH FOR
MOTOR CYCLES AND SIDECARS.

Write us your requirements; we will do our best to meet you.

ALL MACHINES GUARANTEED AND ACTUALLY IN STOCK.

RUDGE, 1912 standard £48
RUDGE, 1912 standard £48
RUDGE, Multi-gear Model, delivered 1st March.
ROYAL ENFIELD, 1911 model, two speeds, handle starting, a beauty £38
TRIUMPH, bike new, not done 500 miles, guaranteed £40
RUDGE, free engine, 1911, Palmer Cord covers, fine condition £45
BRADBURY, standard 1911, unscratched, elaborate conditinn £38
RUDGE, Racing Model, 1911, all improvements, very speedy, first-class conditinn £40
N.S.U., 4¼ h.p., twin, 2-speed gear, Bosch magneto, very fast £24
N.S.U., 3¾ h.p., 1908, magneto, h.b.c., good and sound throughout £21
HUMBER, 1909, 3½ h.p., two speeds, very powerful.
N.S.U., 3 h.p., magneto, all improvements .. £18
QUADRANT, 3½ h.p., take a sidecar, good condition £12
REX, 1911, brand new twin-cylinder, Bosch aluminium, footboards, all improvements £38
REX, 5 h.p., 1909, spring forks, adjustable pulleys £26
REX DE LUXE, 1909, 5-6 h.p., 2-speed gear, variable pulley £32
REX DE LUXE, 5-6 h.p., Bosch, spring forks, two speeds, handle starting £28
ADVANCE, 6 h.p., magneto, h.b.c., twin cylinder, powerful £17
PORTLAND, Peugeot engine, 3½ h.p., 1911 model, Bosch magneto, rubber non-skids, machine little and carefully used £32
MINERVA, 8 h.p., Roc 2-speed, handle starting, torpedo tank, grey finish, very elaborate and smart, complete with sidecar £47 10
CENTAUR, P. & M., two speeds, complete with sidecar, splendid running £25
REX, 5-6 h.p., 1911, M.O. valves, two speeds, free engine, Binks' carburetter, sidecar, good tyres to all wheels, splendid order throughout £42 10
LLOYDS, 2 h.p., smartly finished £8
DE DION, Phœnix 2-speed gear, low and racy £10
REX, 2 h.p., spray carburetter £7

CASH, CREDIT, or EXCHANGE TERMS TO SUIT YOUR POCKET. WRITE US.

S. and R. sidecars, from £5 to £12.
New Portland, £5

MISCELLANEOUS.

1911 Brown and Barlow Carburetter 25/-
Mills-Fulford Sidecar, in splendid condition £5 0
Post Horns, Lucas pattern, very loud and musical 12/6
Generators, burn five hours 5/6
New Fuller Midget Coil 7/3
Wide Mudguards, 3½in., with stays 2/3
" " 4½in. 2/11
Long Handle-bars, dropped ends 6/-
Miller Sidecar, quick-detachable lugs £4 5
Portland Sidecar, as new £4 10
New Goggles, usually sold at 2/6 ..... 1/6
New Bosch Plugs 3/6

SCOTT'S,
Victoria Motor House,
POWELL STREET, HALIFAX.
Telephone—433 National.
Telegrams—"SCOTT, Powell Street, Halifax."

MOTOR BICYCLES FOR SALE.

4¼h.p. F.E. Excelsior, July, 1911, unused since October, m.o.v., Fafnir engine, B. and B., Bosch, Whittle, Druid, Brooks large saddle, adjustable pulley, new Dunlop back tyre, h.b.c., with all spares, takes idecar; cost 50 guineas, accept £40.—Jones, dentist, Crewe.

1912 3½h.p. New Hudson, with 3-speed gear, in stock: 1911 3½h.p. free engine Rover, perfect condition, £40; 1911 2¾h.p. Douglas, perfect, unpunctured, run 500 miles, £30; 1912 Bradburys, Douglas, Humbers New Hudsons; give early deliveries.—Thos. Booth Frodsham, Cheshire.

THE North Wales Motor Exchange, Rhosddu, Wrexham. Tel.: 283.—Why wait for delivery? We can despatch free engine Rudges at once, £55. Run over and try them. 1911 Indian, 5h.p., blue, free engine bought July, fine order, £42: 3h.p. twin N.S.U., under geared pulley, absolutely like new, £27/10: 1911 3½h.p. M.C., with free engine and Auto Varia gear, £37; 1909 Triumph, lovely condition, £30: 3h.p. Triump, h.b.c., Bosch, £20: 1910 N.S.U., 3½h.p., 2-speed gear, utiful mount, £35; 3h.p. N.S.U., 24in. wheels, nice little mount, £20: 3½h.p. Quadrant, Bosch magneto, h.b.c., spring forks, bargain, £17/10: two fine twin magneto Rexes, £25 each: 5h.p water-cooled Rexette, 2 speeds, chain driven, wheel steering, any trial, perfect order, £22/10. We have been appointed sole distributing agents in Wales for the famous N.S.U. motorcycles and 2-speed gears: early delivery guaranteed. Agents wanted.

SECTION IV.

Nottingham, Lincoln, Leicester, Rutland Northamptonshire, and Warwickshire.

1911 6h.p. Zenith, shop-soiled, delivered Dec.; £65

1911 3½h.p. Zenith, shop-soiled, delivered Dec.; £50.

1911 2¾h.p. Standard Douglas, shop-soiled; £35.

1911 Standard Ariel, second-hand, grand condition; £28.

1911 2-speed Douglas, clutch model, grand condition: £38.

1911 Second-hand 3½h.p. Zenith, only run 500 miles; £42.

1909 2¾h.p. Douglas, standard model, good condition: £20.—Colmore Depot, 62, High St., Leicester.

1912 Douglas, all models; book now for early delivery.

1912 Zenith, all models; spring deliveries selling fast. Order at once.

1912 New Hudson, the famous 3-speed machine; call and get description.

1912 Clyno, the sensation of the Show; a few left of the spring deliveries.

1912 Matchless, the Tourist Trophy race winners.—Colmore Depot, 62, High St., Leicester

4h.p. Twin Premier, little used, like new; £32.—Ling, Rempstone Hall, Loughborough.

FOR Singers, James, and Ariels, write, Cordock Cycle and Motor Co., Scunthorpe, Linca.

1912 Triumph, Rudge, B.S.A., Premier, and Humbers; in stock.—Plastow, Grimsby.

TRIUMPH, 3h.p., accumulator, B.B. carburetter, h.b.c., new Clincher tyre; £10/10. — Plastow, Grimsby.

TRIUMPH, 1910, F.E., excellent order, only been ridden 5,000 miles; £38.—Plastow, Grimsby.

DOUGLAS, 1911, model E, with F.E. and handle starting, only ridden 2,000 miles; £37/10.—Plastow, Grimsby.

HUMBER, 1911, 2-speed, horn, lamp, Cowey speedometer, sidecar, new July last, only done 2,600 miles; owner buying car; £45.—Plastow, Grimsby.

HEATH'S Garage, Ltd., the Indian Depot of the Midlands, have the following excellent bargains to offer:

7h.p. Indian, blue, 2 speeds, form magnificent sidecar machine; £54.

5h.p. Indian, red, clutch model, run 500 miles, £44; 4h.p. Indian, blue, 2-speed, 1911, offers wanted; delivery of 1912 models from stock.—Heath's Garage, Ltd., John Bright St., Birmingham.

1911 Douglas, 2-speed model, complete with lamp, horn, and spares; £38.—Main, 36, Parade, Leamington.

1910 Triumph, clutch model, complete with lamp, horn, etc.; £36.—Main, 36, Parade, Leamington

1911 Twin Rex de Luxe, brand new, 2-speed Roc: offers.—Box No. 9,562, *The Motor Cycle* Offices, Coventry.

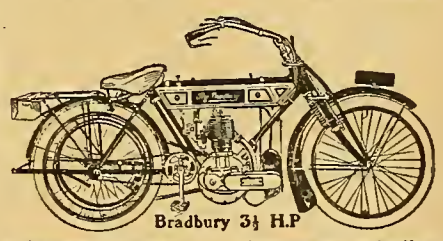
1912 Triumphs in stock, Douglas, B.S.A., Bradbury Rudge, Zenith; offers.—Clifford, Eastwood, Notts Exchanges.

6h.p. Twin Rex (1910), excellent condition, magneto, approval willingly; bargain, £25.—B. Morris, Bourne.

BRADBURY, 1911, July, splendid condition; sacrifice, £35.—E. Marsh, Weoley Park, Sally Oak, Birmingham

Collier's Motories,
Westgate, Halifax,
ENGLAND.

Early deliveries of 1912 Bradbury machines.



Bradbury 3½ H.P

Exchanges Quoted. Distance no objection.

SECOND-HAND MACHINES.
CASH, EXCHANGE, OR EASY PAYMENTS.

1911 7 h.p. T.A.C., three speeds £45 0
1911 Twin Two-speed **REX DE LUXE** £47 10
6 h.p. Twin **ZEDEL,** Bosch, B. & B., spring forks £26 10
1910 7 h.p. Twin **REX,** M.O.V. £35 10
FAFNIR, Bosch, h.b.c., Indian red, Druids £19 10
Magneto **TRIUMPH,** spring forks, very smart £25 10
Twin **REX DE LUXE** and Montgomery sidecar .. £2[illegible] 0
REX, 1910, 3½ h.p., "hot stuff" £19 10
5¼ h.p. Two-speed Twin **REX DE LUXE** £29 10
5 h.p. 1910 Twin **REX,** special machine £29 10
4½ h.p. Four-cylinder **F.N.,** magneto £19 10
2¾ h.p. **KERRY,** runs well, spring forks £10 0
1910 3½ h.p. T.T. **REX,** very fast £27 10
TRIUMPH, 1908, very good £28 10
3 h.p. **HUMBER,** chain drive £7 10
1909 3½ h.p. **REX DE LUXE,** two speeds £32 10
1908 3½ h.p Magneto **REX,** spring forks £22 10
1907 3½ h.p Magneto **REX,** spring forks £19 19
3½ h.p Tourist **REX,** brand new £29 10
1910 Twin **REX DE LUXE,** two speeds £42 10
New Twin **REX,** Cantilever seat ..... 36 Gns
Twin **REX DE LUXE** and sidecar £27 10
3½ h.p. Magneto **MINERVA** £19 10
MOTE-REVE, magneto, Druids £19 19
MOTOSACOCHE, Lightweight £14 10
3½ h.p **MINERVA,** M.O.V. £14 10
.N. Lightweight, magneto, spring forks £19 19
REX, 3½ h.p., spring forks £15 10
1911 3½ h.p. Tourist **REX** £32 10
1911 Twin **REX DE LUXE** £45 10
1911 Single-cylinder Two-speed **REX,** 300 miles .. £42 10
3½ h.p. Two-speed **N.S.U.,** extra good £21 0

A CALL WILL REPAY YOU.

THE "POPULAR" 1911 RIGID SIDECAR, £4-19-9



Backed by 10 years' experience.
Every car guaranteed 12 months.

"Popular," Clipper or Continental tyre £4 19 9
"Superbe" type, with best tyre, apron, etc. £6 6 0
Ditto, with reversible child's seat £7 0 0
Ditto, with best coach-built body £7 12 6

Improved Quick Detachable Joints are fitted to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

Discount to Trade. Exchanges entertained.

50 Brand New Machines at nearly second hand prices. Accessories free, and expenses paid to cash buyers. Come at once and get first choice.

MOTOR BICYCLES FOR SALE

1912 Triumph and New Hudson Motors in stock, clutch and standard.—Mason, Triumph agent, Wellingborough.

3½h.p. Jap-Campion, free engine, Bosch, B.B., h.b.c., lamp, separate generator; £32.—Minor, 8, Moor Lane, Loughborough.

1911½ Standard Triumph, like new, Autoclips, accessories, spares; 38 guineas.—Hirst, 214, Fosse Rd. North, Leicester.

1912 Standard Models, in stock. — B.S.A., Zenith-Gradua, Enfield, and A.J.S.; cash or easy terms. —West's Garage, Lincoln.

3h.p. Clyde, magneto, long bars, good tyres, £9; 2½ h.p. Curzon, vertical, Longuemare, 26 wheels, 130/-.—Barratt, Kibworth, Leicester.

TRIUMPH, 1911 model, 3½h.p., free engine, Dunlop studded tyres, Brooks saddle, excellent condition; bargain, £40.—12, Bull Ring, Birmingham.

NS.U., 1910 model, 3½h.p., magneto ignition, spring forks, Dunlop tyres, h.b.c.; bargain, £19/10.—Brown's, 12, Bull Ring, Birmingham.

HUMBER, 3½h.p., 1911 model, free engine, 2 speeds, magneto; bargain, £33/10.—Brown's, 12, Bull Ring, Birmingham.

NS.U., 2½h.p., twin lightweight, magneto ignition, 1910 model, spring forks; cost £45, sell, bargain, £19/10.—Brown's, 12, Bull Ring, Birmingham.

SINGER, 1911, 3½h.p., free engine model, condition as new; £42; no offers or exchanges.—J. Davis, 4, Fernby Rd., Sparkhill, Birmingham.

TRIUMPH, 1910, free engine, horn, Lucas lamp, spare tube, valve, splendid condition; £37/10.—9,547 *The Motor Cycle* Offices, Coventry.

ENFIELD, 2½h.p., lightweight motor cycle, 1910, in perfect condition, Dunlop tyres, complete, horn, tools, etc.; £25.—C. Bailey, dairyman, 56, Dryden St., Kettering.

TRIUMPH, 1911 clutch model, T.T. engine, many 1912 improvements, as new, with 50/- lamp, horn, and spares; inspection invited. — Box No. 9,405, *The Motor Cycle* Offices, Coventry.

3½h.p. Minerva, £10; one 3h.p. Bradbury, £10; one 2½h.p. Minerva, £8/10; one 2½h.p. Lloyd, £8; or will exchange for a good modern machine, or small 2-seater car.—Foley and Butler, Bourne, Lincs.

1911 Free Engine Triumph, several 1912 improvements, and 1912 Millford cane torpedo front sidecar, lamp, horn, and accessories; inspection invited. —Box No. 9,406, *The Motor Cycle* Offices, Coventry.

HUMBERS.—The marvellous 2½h.p. twins, with single and 3-speed gears, in stock; also the 3½h.p. 2-speed, ideal for sidecar work; exchanges and trials arranged.—P. J. Evans, agent, Sparkhill, Birmingham.

3½h.p. Rudge, free engine, bought September, 1911, only done 800 miles, Millier mudshields, Jones speedometer, Lucas lamp and generator, 1912 carburetter; £45.—Morgan, c/o Phenician, Ltd., Finch Rd., Handsworth.

£7, great bargain.—2½h.p. Singer, vertical, magneto overhauled, re-bushed, fine condition, h.b.c. Amac low, fast, spring seat-pillar, good covers and tubes, touches 30 an hour; trial bere.—Roland Chappell, Fern Lea, Sketchley, Hinckley.

IVY-PRECISION, 3½h.p., T.T., late 1911 model, high compression engine, force feed jet, Dunlop tyres, P. and H. Lamp, horn, etc., condition as new, won medals, will do 65 miles per hour; cause of sale, too fast for owner; price £38.—B. Ansell, Moor Hall, Sutton Coldfield.

CLYNOS.—The famous sidecar machine; I have two in stock for immediate delivery; can be fitted with Clyno, Montgomery, or Canoelet sidecars; exchanges and trials arranged; deliveries guaranteed any week until June.—P. J. Evans, Sparkhill, sole Birmingham agent. Telephone: 13 Victoria.

SECOND-HAND Motor Cycles.—We never hang on to second-hands. A quick turnover is what we want, and that is why we offer second-hand motor cycles at pounds below other houses. We have just received delivery of a large number of new 1912 Douglas machines and have placed these with customers who have exchanged their 1911 and 1910 mounts. You know the saying, "Once a Douglas rider always a Douglas rider." These second-hands are being thoroughly renovated, and will be cleared at bargain prices. 1910 Douglas, from £22; 1911 Douglas, from £27. £25 spent on a Colmore Douglas will prove a fine investment. Let us send you a list of about 60 really good second-hands in stock.—Colmore Depot, 27, Colmore Row, Birmingham.

SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

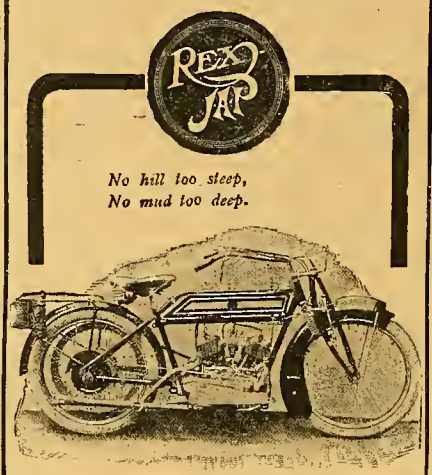
4h.p. Werner Twin, in good running order; bargain, £12.—Risdon, 32, Wellington St., Luton.

1¾h.p. Motosacoche, F.E., little used; cash £20, or exchange.—Wallis, 157, Mill Rd., Cambridge.

1912 Ariel, 3½h.p., 3-speed gear, free engine, just delivered, never ridden; £55.—Hewat, Southwold.

1912 Bradbury, free engine model, in stock; first cheque £54/10 secures.—Willmott Bros., Norwich.

1912 Rover, free engine model, £55/5; also 2½h.p. Twin Centaur, £42; both in stock.—Willmott Bros., Norwich.



No hill too steep,
No mud too deep.

1912

REX-J.A.P. Motor Cycles

have been designed throughout for the discriminating owner who sets *value before mere cheapness.*

The power and flexibility of the J.A.P. Engine, the luxuriously comfortable front and rear springing, the large tyres, automatic lubrication, and efficient silencing, combined with the neat and clean cut appearance of the machine, justify our claim that it is the most practical and efficient motor cycle on the market.

***The result of experience** gained by riders of all makes of machines, the REX-J.A.P. combines all that is necessary for easy starting, traffic riding, long journeys in fair weather or foul, and is undoubtedly the*

only satisfactory machine for sidecar work.

Catalogue, describing the many luxurious and exclusive details of these unique machines, free upon request.

TO DEALERS—The REX-J.A.P. Agency proposition is worth consideration—we invite your correspondence.

COLONIAL AGENTS—The REX-J.A.P. Colonial Models, with *Special Frame, Wheels, and increased ground clearance,* will interest you. We are now appointing Sole Agents, and shall be pleased to post you terms.

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REX JAP

MOTOR BICYCLES FOR SALE.

TRIUMPHS, Bradburys, B.S.A.'s, Humbers, Rudges, Enfields, Premiers, Matchless, from stock.—Lambert, Thetford.

BAROAINS.—1911 3½h.p. Premier, £28; 1911 3½h.p. Bat, £28; 1911 2h.p. Humber, £28; Motosacoche, magneto, £15.—T. H. Nice, Bury St. Edmunds.

NICE and Co., Bury St. Edmunds.—For immediate delivery, Humbers, New Hudsons, Premiers, B.S.A. Exceptional allowances for old machines.

TRIUMPH, free engine, 1909, Bosch magneto, nearly new Kempshall back, footboards, whistle, etc.—Brockbank, Toftrees, Fakenham, Norfolk.

1912 L.M.C. Motor Cycles; immediate delivery; trial runs and interviews by appointment.—W. E. Sneezum, 14, Fore St., Ipswich. Sole agent Ipswich and district.

BS.A.! B.S.A.! B.S.A.! — Early deliveries of all models of these celebrated machines; second-hand machines part payment.—A. F. Garnham and Co., sole agents, Ipswich.

SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

2¼h.p. Twin Enfield, new, not used; bargain, £32/15. —62, Cardiff St., Aberdare.

1909 Triumph, perfect condition throughout; £30, or good offer.—Weale, Leominster.

BOOK Your Order early for Clynos. At present I can guarantee delivery this month.—Below.

IMMEDIATE Delivery 1912 3½h.p. and 6h.p. Zenith, Triumph, Rudge, B.S.A., Singer, Humber, New Hudson.—Clarke's Garage, Port Talbot.

BS.A., new June, standard model, excellent condition, perfect order; £35.—Bevan, Brookfield, Troedyrhiw, Glam.

FOR Earliest Deliveries of Triumph, Humber, Enfields, Singer, Premier, apply at once, Griffiths, Cycle Emporium, Llanelly.

1911 Brand New Rex de Luxe, single, 2-speed; offers or exchange second-hand mount and cash.—Robathan, Guarlford, Malvern.

TRIUMPH, 1912, March; cannot take delivery; give lamp to take over.—Box No. L5,864, *The Motor Cycle* Offices, 20, Tudor St., E.C.

2h.p. Minerva, Triumph low frame, B. and B. carburetter, h.b.c., good condition; £8/10.—A. Nash, Bay Horse, King's Acre, Hereford.

DOUGLAS, 1911, 2½h.p., just thoroughly overhauled by makers, new tyres, belt, lamp, horn, mirror, watch; bargain, £30.—1, Partridge Rd., Cardiff.

REX, 3h.p. 1909, Bosch, Amac, tyres perfect, lamp, generator, horn, numerous spares; bargain, £16; must sell; genuine.—Smith, builder, Ledbury.

TRIUMPH, 1911 standard model, £37; 1911 free engine model, £43; 1910 free engine model, £36; all in good condition.—Stour Cycle Depot, Stourbridge.

MATCHLESS 1911 Standard Roadster Model, perfect condition throughout; £34, bargain.—Withers, High St., Stourbridge.

DOUGLAS, 1911 model E., with 2-speed gear and free engine, condition perfect; £38.—Stour Cycle Depot, Stourbridge.

ENFIELD 1910 Lightweight, with 1911 improvements, in fine condition; £24.—Stour Cycle Depot, Stourbridge.

3½h.p. Brown, accumulator, B. and B., h.b.c., All'All forks, new Lycett saddle, good running order, only wants new tyre; £4/10.—Dunn, Cross Keys, Moo.

SECTION VII.

Gloucester, Oxford, Buckingham, Berks Wilts, and Hants, and Channel Islands.

2¾h.p. Enfield, new July; £45.—McBride, Lucknam, Chippenham.

2¾-3h.p. Motor, Chater-Lea, 26 wheels; bargain, £7.—West, Whitehill, Bordon.

DOUGLAS, 1911, 2-speed, perfect condition; £35.—Wasley, 9, Victoria St., Bristol.

2½h.p. Motor Cycle, reliable, good order; £11.—G. Trinder, Market Place, Cirencester.

3½h.p. Rex, low built, engine and tyres in splendid condition; £5.—41, Landguard Rd., Southsea.

1909 Triumph, very little used, £32; 1911 Triumph, perfect, as new, £38.—Watts, Rosemont, Lydney.

1911 New Bradburys, standard and 2-speed models; bargain prices, cash offers. — Ginger, Motors, Banbury.

1910 Triumph, clutch model, perfect, and good condition; £36, or nearest offer.—3, Alma Court, Newbury.

P. AND M., 1911, 3½h.p., new Kempshall tyre, perfect order. — Davenport Vernon and Co., High Wycombe.

THE MOTOR CYCLE

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ADDRESS: 20, TUDOR STREET, LONDON, E.C.

Internal Progression—*not* Dissension.

THE news published elsewhere this week regarding the formation of a new body entitled the Motor Cyclists' Progressive Association will cause surprise to a large number of our readers. Those, however, who are more in touch with motor cycle politics already know that a good deal of dissatisfaction has existed for some time among A.C.U. members and members of clubs affiliated to that body, and there is a general feeling that there should be less of the car and more of the motor cycle element in the management of the A.C.U. While we should have thought that it was quite possible to bring about necessary reforms without the formation of a fresh association, the manifesto that has been issued makes it very clear that the desire of the progressives is not in the slightest degree antagonistic to the present governing body, and there is no suggestion whatever of forming an opposition government. It is, however, felt that there should be more active motor cyclists upon the general committee and sub-committees of the A.C.U., and for this purpose the progressives have banded themselves together to secure more complete representation upon the executives without doing anything which might be damaging to the Union.

Another point which should not be overlooked is that membership of the Progressive Association is confined to members of the A.C.U. and its affiliated clubs. Now while we are still of the opinion that all the proposed reforms would have been possible without the formation of any fresh body, it will be readily recognised that very much more prompt and efficient amendments may be brought about by properly organised methods. One of the objects of the progressives is largely to increase the membership of the Auto Cycle Union, and if they can do this we promise them our whole-hearted support. They do not tell us how they intend to do this. There is no doubt whatever that autocarists, unless they are also motor cyclists, seldom see eye to eye with motor cyclists, who are nothing if not keen, but have we any evidence that a single shortcoming of the A.C.U. is due to the car element? It appears to us to be largely a matter of sentiment rather than fact.

Taxation of Business Motor Cycles.

THE article published elsewhere on the taxation of business motor cycles will be read with interest, particularly that portion which mentions that the Auto Cycle Union has decided to test the legality of the demand made by the local taxation authorities that all motor cycle owners must pay the £1 tax, even if their machines are only used solely for the purpose of carrying goods in pursuit of their business. The authorities argue that a motor cycle cannot be exempt because it is constructed for carrying a driver.

Would the authorities argue that a motor cycle or cart could be used without a driver? The argument that because a motor cycle is constructed for the conveyance of a person as well as goods it is placed outside the exemption clause is one of the most absurd contentions we have ever heard. Thousands of spring carts are used daily without the payment of a penny, not only for carrying goods for the purpose of business but also for conveying friends. The only time when an untaxed cart is legally entitled to carry passengers is when the vehicle is required for the attendance of the owner and his family at Divine worship. That they are used for hundreds of other purposes is well known.

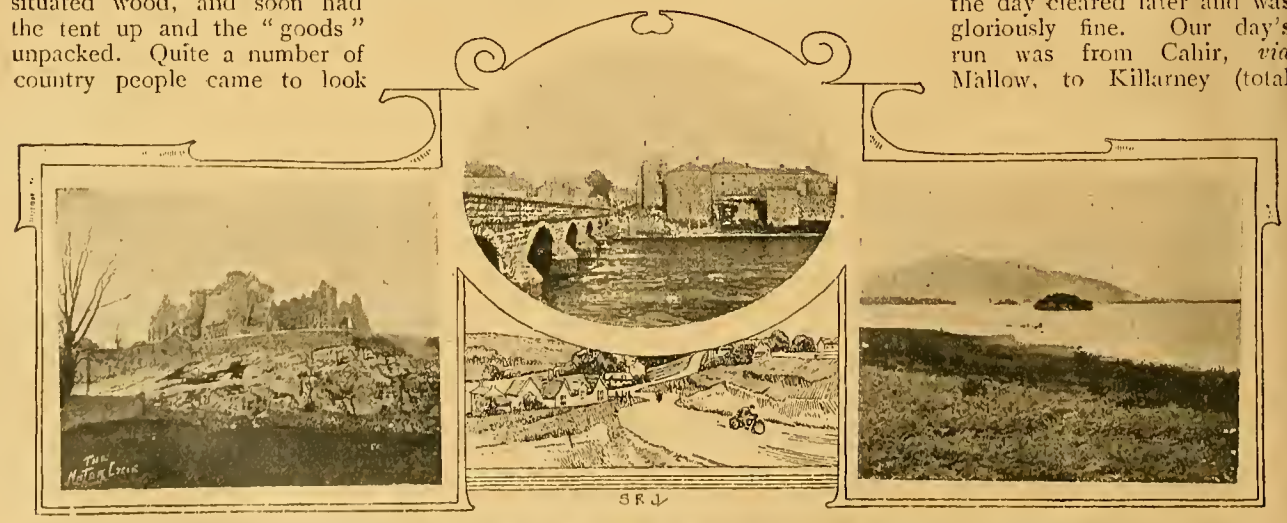
A SIDECAR TOUR IN IRELAND.

THIS is a short account of a sidecar tour in Ireland last summer, done with the aid of a 1907 Triumph and a 1910 5 h.p. Indian, both fitted with Chater-Lea rigid sidecars. Four of us left Dublin on July 28th, 1911, about 11 a.m., for the South, with the above machines and the following hastily-gathered equipment: A small folding bicycle tent, size 6ft. 6in. × 6ft. 6in. × 6ft., weighing 9 lbs.; a portable Primus stove, four military type mess tins, a large motor car cover to act as a ground sheet, four rugs, and a very limited supply of spare clothes. A couple of plugs, valves, a big pulley for the Triumph, and a spare set of new chains for the Indian, were all the spares we carried. Our tyres had seen a deal of use, but were in good condition. The day of our start was fine, but the roads were heavy, due to a wet night. Near Naas (twenty miles) we had our first stop to scrape the Triumph's belt, which was slipping (this was the only occasion during the tour that it was touched). We had soon passed Newbridge, and, crossing the Curragh, arrived at the old cathedral town of Kildare, where we got a view of the ruins and the Round Tower. Nearing Monasterevin, the new spare chains were found to be missing from the Indian's carrier, though they were there a short time before. We went back to search and make enquiries, but no news was forthcoming. This left us with only the old pair, and these had done nearly 3,000 miles —a bad start, but we were in a happy-go-lucky mood, and we did not care a —— what happened as long as we got somewhere somehow. We lunched by the roadside near Maryborough—tea, bread and ham. In Maryborough (fifty miles) we purchased provisions and despatched postcards to doubting ones. The afternoon's run was through Abbeyleix and Durrow over a fine level and, in most parts, steam-rolled road. Everywhere we went the sidecars, or "baashkets," as they were called, were looked on as things of wonder, as very few are seen in Ireland, especially in the country parts. Just outside Cashel the Indian ran short of petrol, and having no more we decided to camp for the night. We stopped near a very nicely-situated wood, and soon had the tent up and the "goods" unpacked. Quite a number of country people came to look at us, wondering what kind of folk would live in a tent and drive in "thim things." From these good persons we found out who owned the field, and then proceeded to ask permission from him to use his land to camp on. His son gave us the necessary leave, and showed a great interest in our machines, as he was the owner of one of the earliest Bats made, which was still going strong. Having been under canvas for a fortnight before our tour, we found no difficulty in quickly getting asleep in our blankets.

Thunderstorms.

We finished our breakfast early next morning, and soon got away to Cashel. This little town is famous on account of the interesting tenth century ruins on the "Rock" which stands right beside the town. This rock came, it is said, as a result of an argument between his Satanic Majesty and a famous Irish giant, Finn Macoole. We explored the ruins for some time, going up and down dark stairs built in the thickness of the walls, and emerging at the most unexpected places. Having satisfied our interest in this historic spot, we filled up with petrol and got on our way to Cahir. As we approached this place it became very dark, and we could hear distant thunder. On entering the town the gathering storm burst upon us in full force. We made for the hotel yard, and got the machines under cover before they got very wet. There was a fearful storm all day; few of the inhabitants ever remember having seen worse lightning and rain. We made several attempts to get away to Killarney, and at about five o'clock succeeded in starting. However, we had hardly gone more than a mile when the storm again came upon us. The Triumph at this time was leading by about 200 yards, and by going "full out" got to Mitchelstown before the storm. The Indian was not so lucky, and got the full force of the tempest, but enjoyed true Irish hospitality in a small cottage while sheltering from the rain, later going back to Cahir to the hotel for the night, while the Triumph stayed at Mitchelstown.

The following (Sunday) morning was still wet, but the day cleared later and was gloriously fine. Our day's run was from Cahir, *via* Mallow, to Killarney (total



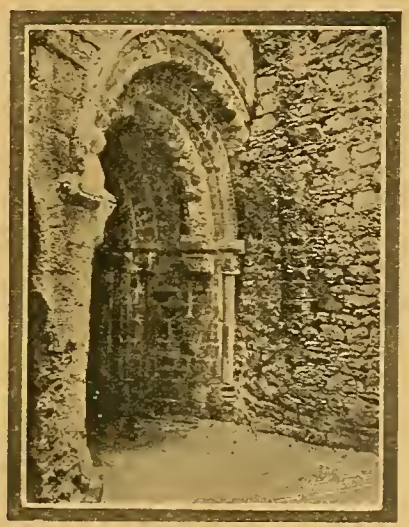
(1) General view of the ruins on the "Rock of Cashel.

(2) King John's Castle and bridge over the Shannon at Limerick.

(3) Part of the lower lake at Killarney, showing "Purple Mountain" in the distance.

A Sidecar Tour in Ireland.—

203 miles from start). The last forty miles lay over a fearful road, very bumpy and wet; for long distances it was sharply sloped to one side, giving one the impression that the sidecar was going to turn over. The Triumph arrived first at Killarney by about an hour on account of the "Indians" stopping in Mallow for lunch. On resuming the journey after lunch they found themselves the objects of some considerable notoriety, for, on turning a certain corner, they met a cart load of people who immediately began one and all to curse with great vehemence. A number of other carts and cars were met, all the inmates of which loudly reviled the bicycle as it passed; at one place men by the roadside could hardly resist stoning the machine for "coming a second time at them." It was not till that night when Triumph and Indian again met that the meaning of this strange behaviour became evident. Perhaps some of your readers are unfamiliar with the spectacle presented by a large country funeral in Ireland. First come the cars for the officiating priests, then the hearse, followed by about one hundred or so cars and carts; after these walk other mourners, and the whole procession is closed by a cavalcade of thirty or forty horsemen riding three abreast. The Triumph had unluckily met this procession, and as each component part had tried to reach the nearest field by the shortest route (*i.e.*, the hedge), we didn't wonder at the language used when the Indian passed, especially as the people thought it was the Triumph coming round after them again! We talked over our adventures that night round a splendid turf fire, and then retired to the tent for a well-earned sleep. We were away early next morning, having been disturbed by cows endeavouring to browse on the tent. We left our machines in a Killarney garage for the day while we went to visit some of the world-famed sights and views. We paid sixpence each to go by a short cut to the lakes and Ross Castle, being told we would save a half mile walk; however, we walked nearly three miles, and then found that the long way was only threequarters of a mile. After having some lunch in a cottage we got a boat to go to the celebrated island of Inisfallen, where the boatmen informed us we should see the holly tree under which Brian Boru learnt to play the piano. A strong gale was blowing down the Gap of Dunloe, and, owing to this, there was quite a sea running on the usually placid lake. By the time we got over to the island we were rather wet, and had shipped quite a quantity of water. We stayed some time on the island, but were unable to find either the holly tree, piano, or yet Brian!—our guide having to stay with the boat on account of the bad sea.



Inner door of Cormac's Chapel, Rock of Cashel.

A Broken Pulley.

Just as we were leaving, down came the rain, wetting us through and through, though it calmed the lake at once. It stopped when we got near Ross Castle, and we managed to get fairly dry by walking quickly back to the town. As the weather was threatening a wet night, we decided to push on at once for Tralee (230 miles); we were soon away with, luckily, the hurricane of wind and rain at our backs, over the best road we met in Kerry. Just outside Killarney the Triumph belt refused to grip, and an examination revealed that the inner flange of the engine pulley had come adrift. As it happened, the big pulley for solo work was in the sidecar, and this was quickly fitted. Misfortune also befell the Indian, for about half way to Tralee the front chain broke. The big ground sheet was placed right over the combination to keep off the rain, and in a dry but very stuffy atmosphere we soon effected a repair. On account of the rain we put up for the night in Brenner's (I.A.C.) Hotel, where we were made very comfortable. We decided to get to Limerick (296 miles) as early as possible next day, as we wished to see some of our University friends playing cricket there. The road was bad to Listowel, and also from there to Glin; but from Glin along the estuary of the Shannon both the scenery and surface were excellent. We passed Foynes, where there are big petrol and petroleum tanks for storing the cargoes of the tank ships. For three miles outside Limerick the road was easily the worst in creation! —4 m.p.h. being about the limit. And even at this speed one would think that the frames and wheels could not possibly stand the strain. We spent the afternoon with our friends, and in the evening two of us sought a suitable camping ground. This was successfully found, and we owe a great debt of gratitude to our hosts for their kindness to us in making our stay so enjoyable.

The Roads of Tipperary.

The next morning was very wet, and we put off our departure till two o'clock to see if the weather would take up, but there was no improvement. Birr (361 miles) was our objective, so, having taken leave of our host, we made haste to get the wet and muddy journey done. Nenagh was soon passed, not without incident, however, for just beyond it the Indian front tyre deflated. This proved to be due to wet getting in through an old cut. We patched the tube and cover while, luckily enough, the elements for the time were favourable; we managed to make such a good job of it that the tyre lasted nearly another 2,000 miles. The Triumph did not stop, but went on to Birr, *viâ* Roscrea, to visit some friends, but, as it was getting rather late, the Indian went direct to Birr from Nenagh. The roads in North Tipperary are easily the best in Ireland, being all steam-rolled; and it is a common thing to see reports in the papers of other county councils making excursions to Tipperary to see the road making. The "Indians" had a wash, dry clothes, and tea in Birr before the Triumph arrived, and we all then went to visit a college chum. Here we met with the greatest hospitality, for we were immediately invited to supper, to put our tent on the lawn, and sleep on large quantities of dry blankets,

and, on the morrow, to breakfast in the house and to golf all day. So in every way we spent a glorious time entirely. That (Thursday) evening we arranged to get to Athlone (476 miles), where, right in the town, the other old chain on the Indian broke.

A Cold Camping Place.

As it was dark we decided to have supper, and to leave the Indian in the hotel, then to walk out along the Roscommon Road and find some nice place to camp. It was past midnight, when we found a place and got the tent up with the aid of the Triumph's lamp. We were camped, on an old "rath" or fort which overlooked the Shannon as it emerged from Lough Ree, from which a damp mist was rising, chilling us to such a degree that sleep was impossible. We rose about 3 a.m., and made a big fireplace of stones in which we made a cheerful blaze of dry wood that we were glad to find in plenty round about. Later on we gathered mushrooms, which were simply splendid stewed for breakfast. The sunrise over Lough Ree was superb, and we soon enjoyed a good view from our lofty rath of the lough, the river, and the town of Athlone. After mending the broken chain, tracks were made for Sligo (476 miles). A few miles from Athlone we noticed that the chain in breaking the night before had made a hole in the oil tank. Luckily we had a spare tin of oil which carried us as far as Roscommon, where we got a cycle repairer to mend the hole. Though it was a long and tedious job the charge was only 1s., which was very moderate, especially as we were diverted while waiting by the following conversation: "The races were grand yisterday, Moike." "Yis! but you should have seen the grand sight in the station last night; the platform was stretched with dhrunken min, and sarra wan arristed at all at all!" Truly a fine sight!



Old church and round tower, Glendalough.

A Long Hill and Fine Scenery.

In Boyle we took in petrol, oil, and food, and proceeded to Sligo up the worst hill we encountered on the tour. This hill is 1½ miles long, with an average gradient of about 1 in 12 and some seven or eight hairpin bends. By shedding the passengers three-quarters of the way up both bicycles managed the climb, though we might have got up passengers and all if we had known of the hill. When we got to the top the scenery was magnificent, and would compare with anything we saw elsewhere. We spent the evening at Rosses' Point, five miles beyond Sligo, where we met several college friends. The next day (Saturday) we spent playing golf at Rosses' Point, and we were going to spend a second night there, but as we heard that there was a camping fee of 10s. we left in a hurry. It came on very wet at night, and after we had gone about five miles towards Bundoran, on stale petrol, by the way, that we took in at Sligo, we decided to camp for the night. It took us some time to find a suitable place, but after a time we were very kindly allowed to sleep in a hay barn, and a real good sleep we had. It was 11 a.m. on the Sunday before we got up, but by 1 p.m. we were away to Donegal (524 miles) *via* Bundoran and Ballyshannon. We had great difficulty both in starting and hill-climbing with the stale petrol, but managed to get to Bundoran, where we emptied our tanks and filled up from fresh tins of Shell. In Ballyshannon we were held up on a steep hill by a rather unusual sight—a man driving a large flock of over 200 geese; what he was doing with them was more than we could find out, but they baulked us badly on the hill and we had to shove up. A few miles from Donegal the Indian sidecar tyre burst with a loud report—showing a rip



Gap of Dunloe, Killarney. The ascent is made on donkeys and mules from "Kate Carney's Cottage."

A Sidecar Tour in Ireland.—

a foot long in the cover and tube. As this was unmendable, we got a farmer to cart the sidecar and the passenger to Donegal, the Indian going on solo We camped for the night on the lawn of a gentleman's house, where we spent one of the most enjoyable evenings on tour, talking over every kind of subject with our host. We have heard since that we were the cause of his getting a motor cycle for himself. As one of our party lived quite close to Donegal we decided to send the damaged sidecar back to Dublin by rail, while the Indian continued solo. Our tour proper ended next day at Dunfanaghy (580 miles), which we reached in the evening *via* Ballyboofey and Letterkenny.

Conclusion.

We all enjoyed our tour despite the bad weather we encountered. Each alternate day was wet with the exception of the last. The total cost of our trip, including two wet nights in hotels, was only £1 16s. 4d. The machines behaved splendidly, the only trouble resulting from the Triumph's pulley and the Indian's worn chains breaking. We were very lucky with our tyres; the front tyre of the Indian punctured once, and the sidecar tyre burst, owing to an original defect. This the manufacturers have since replaced free of charge. The roads on the whole were very good; the forty miles from Mallow to Killarney, and the three miles outside Limerick being the only really bad bits. There were practically no loose stones on the roads, which was a boon from the point of view of punctures. Our tour was unplanned, and we only travelled each day as far as we felt inclined. We decided to leave out Connemara till a future date on account of the high gear (4½ to 1) on the Triumph due to the small pulley breaking, which made hill-climbing with sidecar difficult. We met with the greatest hospitality from all classes; people did all they could to make us comfortable, and all seemed greatly interested in the sidecars and our adventures. All said and done, Ireland is not a bad country to tour in during the fine weather, and many could have a better holiday in Ireland than wandering over the Continent in foreign lands, of which Ireland is not one, and we hope never will be.

TRIUMPH AND INDIAN.

A SOCIABLE SIDECAR.

THE accompanying photograph shows an interesting conversion by an amateur rider, Mr. Dobson, who is a student at St. Bartholomew's Hospital. The motor bicycle is an old Vindec, fitted with P. and M. two-speed gear and chain drive, which he bought second-hand. Mr. Dobson, with the assistance of a local cycle repairer, added wheel steering and a double-seated sidecar, and appears to have made a very satisfactory job of the conversion. The framework of the attachment gives one the impression of being strong and rigid, and the long arm from the motor bicycle steering head to the exterior of the sidecar frame gives additional strength. The sidecar body is supported on three leaf springs. We had a short ride in the combination recently, and it proved itself to be controllable, comfortable, and handy in traffic. It will be noticed that the control levers are on the wheel, and the exhaust lift is below the bracket on which the wheel is carried. Both brakes (not shown in the photograph) act on the rear wheel—one is hand-operated and the other is worked by means of a pedal.



An amateur's conversion. This two-speed Vindec with the addition of a double-seated sidecar makes a good sociable vehicle.

A SIDECAR WITH SHEET METAL BODY.

ANOTHER sidecar, of which we publish an illustration, was recently brought to our notice by Mr. W. W. Lake, of Freeland Road, Ealing Common, W., and, as will be seen, is fitted to a 6 h.p. twin N.S.U.

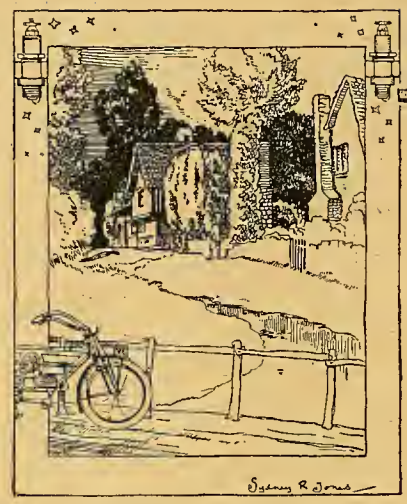


Mr. and Mrs. W. W. Lake and their 6 h.p. N.S.U. sidecar combination.

In writing us Mr. Lake remarks: "The sidecar body was manufactured to my order by the Brighton Motor Sheet Metal Works at a most reasonable cost. The body being made of sheet metal might be thought a trifle heavy, but it does not affect the running in the slightest. The upholstery is properly sprung, there is a side entrance door, and a novel feature is the valanced apron which clips over the side of the car. One of the advantages is that the body is made to fit the ordinary 'basket' chassis."

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply.



Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Registration.

I have purchased an A.C. sociable. The weight of this unladen is over 4 cwts. Shall I require to register this as a car? Will this be charged as a car for the Revenue licence, or as a motor tricycle with the 20s. licence?—"A.C. SOCIABLE."

The machine will have to be registered as a car, but the local taxation licence, as the machine has not more than three wheels, will be that of a motor cycle.

Sticking of Contact Breaker Arm.

Could you inform me the reason why, as I find it is by no means uncommon when a motor cycle has not been used for some days or weeks, the contact breaker of high-tension magneto refuses to work, the points remaining apart and refusing to close? I should also like to know the quickest means of again getting the contact breaker to work, as I find that after working it with the fingers for an hour or so it again works correctly, and continues to do so until the machine is not used again for some days consecutively.—A.J.W.

The rocking arm sticks because the fibre swells slightly with the damp, and possibly causes rust on the pin. What you must do is to take the contact breaker off, remove arm, clean the pin with fine emery paper, and ease the hole with a piece of the same wrapped round a small piece of wood, such as a wooden match. A small drop of oil should be applied to the pin, any surplus being wiped off.

The Difference between Old and New Machines.

(1.) I now ride a 1907 3½ h.p. Triumph and sidecar, and get a great amount of pleasure from it. I never have the slightest trouble with the machine, and I started as a novice. Should I get more power out of a more modern mount? (2.) Is a more modern machine only an improvement in details with the same actual horse-power? (3.) I have had an offer of a 1910 Triumph with Gradua gear. Would this be worth changing for, and is a Gradua gear recommended as a free engine by which to start?—BOXER.

(1.) You would certainly get more power out of a modern machine. (2.) The engine is more efficient. (3.) This machine with Gradua gear would enable you to climb almost any hill without trouble, but it would be a little bit harder on the belt than if the machine were used with a moderate fixed gear. It is not advisable to start by means of the belt. It is better to adjust gear fairly low and push to start, in the ordinary way.

Riding Through Water.

I want a thoroughly reliable machine for *all* weather and roads, and one easy to manage, and not requiring frequent adjustments, and a safe conveyance when the roads are bad. I have to ride in all weathers, and have to keep appointments for certain times. With regard to the Clyno, I should like to know particularly—(1.) Whether it is a good sidecar machine? (2.) Reliable in the hands of an amateur? (3.) If it is a good solo machine? (4.) Accessibility for repairs and adjustments? (5.) Accessibility of back wheel for repairing tyre and also changing the tube and outer cover. (6.) Is the back tyre large and strong enough to withstand the wear to which it will be subjected? (7.) Are the mudguards sufficient for bad weather? (8.) Is the machine generally, and particularly the magneto, weather-proof? (9.) In this district there are many places where a small stream crosses the road, with only a narrow footbridge across, over which with care, one can get a bicycle, but it would be impossible to take a motor cycle and sidecar over the bridge. In summer the water would be shallow, but in winter it often floods over, and soon gets a foot and more in depth. Could one get through it on a motor cycle without stopping it or damaging it, and is it better to go slowly through such places? (10.) Is it better to have a castor or rigid wheel for the sidecar?—W.B.H.

(1.) The machine in question is one of the best sidecar machines on the market. (2.) It is reliable in the hands of an amateur. (3.) It is a good solo machine, but, of course, rather heavy. (4 and 5.) It is accessible for repairs and adjustments, also as regards the back wheel for tyre repairs and tyre changing. (6.) The tyre is strong enough. (7.) The mudguards are quite good. (8.) The machine is particularly good as regards protection of the working parts from the weather. There are valve covers, chain covers, and the magneto is well protected. (9.) You could probably just scrape through if the water were a foot deep, provided the surface were hard underneath, and the ford taken very slowly. (10.) A rigid wheel sidecar would, we think, be more satisfactory, as it prevents side-slip.

Automatic Inlet Valves and Overheating.

Will you tell me if automatic inlet valves cause overheating? I was troubled all last summer with the front cylinder of my twin 5 to 6 h.p. (1907) overheating. Do you think a 5 to 1 gear is too low for the South of England with a sidecar?—J.D.

It cannot be said that automatic inlet valves cause overheating. Perhaps if you reduce the lift of these and see that it is the same in both cases (also the tension of the inlet valve springs) the engine will run cooler. 5 to 1 is not too low for sidecar work.

Middlesbrough to Oakenshaw.

(1.) Would you kindly give me the best route from Middlesbrough-on-Tees to Oakenshaw, near Bradford, avoiding very bad hills and large towns? (2.) What is the distance?—W.J.W.

(1.) Your best route would be as follows: Middlesbrough, Yarm, Tontine Inn, Thirsk, Ripon, Ripley, Harrogate, Pouler, skirt Yeadon, go through Little London, straight on to Bradford, past Earshill Station take the first turning on the left, turn left again, pass under the railway bridge, and turn first right past the hospital, and ask your way to Dudley Hill Station. Do not go direct to the station, but follow the road through to Oakenshaw. This cuts out practically the whole of Bradford. (2.) The distance would be approximately seventy miles.

A Novice's Queries.

I have my first motor cycle—a free engine plate clutch 1912 Triumph—on order, and not having previously ridden a motor cycle I shall be very pleased to learn: (1.) What are the probable results (if any) to contents of the tank and engine after, say, a corner "spill"? (2.) Has the petrol or the petrol-mixture any tendency towards explosion, or other danger, owing to a sudden overturning of one's motor cycle? (3.) I have bought (from a motorist) a cycle house with corrugated iron roof, etc., and am surprised to find several ventilation holes bored in one of the sides—will this not (although an exit for evaporation) cause dampness?—W.B.G.

(1.) A little petrol will be spilt and that is all. (2.) There is no reason why there should be an explosion unless the petrol were to leak directly on to a nearly red-hot exhaust pipe or lighted lamp. (3.) We should not think that the ventilation holes would matter in the least, unless they are so big as to admit much damp.

A Sidecar on a 2¾ h.p. Machine.

I have just purchased a Douglas motor cycle, and am a complete novice, so would you please tell me whether it would injure the machine to use a sidecar occasionally with a light-weight passenger (my own weight is under 11 stones) in the district around the South-east of London? —L.A.C.

We do not know that it would actually injure the machine to use a sidecar with it, but, in our opinion, this power is insufficient, especially in the district round the South-east of London, where the country is somewhat hilly. If you wish to take a sidecar you should go in for something more powerful, though, as a solo machine, there is nothing better than the make you have chosen.

Motor Cycle Associations.

I desire to join one of the motor cycle associations, but am in ignorance as to which is the best. Is the A.C.U. a branch of the R.A.C.? What is the A.A. the sign of? Also what is the M.C.? I shall be pleased to receive your explanations, stating subscriptions and method of joining.—H.P.

The Auto Cycle Union is the body to which the Royal Automobile Club has delegated the control of motor cycling matters. The subscription for a touring member is 5s., and this is the cheapest organisation to which you can belong. The Automobile Association and Motor Union are now amalgamated. The subscription for a motor cyclist member is 10s. 6d. Full particulars can be obtained from the secretaries of these two bodies—F. Straight, the Auto Cycle Union, 89, Pall Mall, S.W., and Stenson Cooke, the A.A. and M.U., Fanum House, Whitcombe Street, W.

Brighton to the Lakes and Back.

I am touring from Brighton to Penrith, then to Richmond (Yorkshire), on to York, and back again to Brighton. Will you please tell me the best way to go without touching Manchester or Sheffield or such like large towns. I don't mind bad hills so long as I can get good scenery. I wish to call at the following places: Reading, Sutton Coldfield, Haddon Hall, and Windermere. I should like to know the distance.—E.C.S.N.

We should recommend the following route: Brighton, Henfield, West Grinstead, Billingshurst, Rudgwick, Shalford, Guildford, Bagshot, Wokingham, Reading, Panghourne, Wallingford, Oxford, Deddington, Banbury, Warwick, Kenilworth, Coleshill, Sutton Coldfield, Lichfield, Abbots Bromley Uttoxeter, Ashbourne, Hartington, Haddon Hall, Bakewell, Buxton, Macclesfield, Harthall, Knutsford, Northwich, Runcorn, cross the River Mersey by transporter bridge and proceed through Rainhill, Rainford, Ormskirk, Rufford, Longton, Preston, Lancaster, Carnforth, Kendal, to Windermere. Proceed to Penrith by skirting the shores of Ullswater. The return journey should be made through Brough, Bowes, Scotch Corner, Richmond, and then on to York, continuing through Tadcaster, Ferrybridge, Doncaster, Bawtry, Retford, Newark, Grantham, Stamford, Wansford, Stilton, Buckden, Eaton Socon, Biggleswade, Baldock, Stevenage, Welwyn, Hatfield, St. Albans, Watford, Rickmansworth, Uxbridge, Colnbrook, Staines, Chertsey, Guildford, Shalford, Cranleigh, Horsham, Cowfold, Henfield, to Brighton. The distance is approximately 790 miles.

READER'S REPLY.

I see "E.L.S.M." asked your opinion on February 1st concerning the general reliability, speed, and hill-climbing capabilities of the 3½ h.p. Lincoln Elk, and how it is made at such a comparatively low price. Well I will tell you, and perhaps you will be good enough to explain this. In the first place, I make practically everything on my own premises and my establishment charges are very low. Labour is very much cheaper in Lincoln than in Coventry, and I do not keep trade riders for racing or expensive trials, but make the motor for every-day use, where reliability is required. For all-round work, for business or pleasure, for speed and hill-climbing, it is good, but I do not make it as a racing machine.—J. KIRBY.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"J.P." (Leicester). Coach-built *v* wicker and cane sidecar bodies.

"C.E.J." (Old Colwyn). A.S.L. single and twin.

"H.B.C." (Southampton). A.L. generator, dry batteries, and electric lamps for economy and reliability.

"G.J.K." (North Shields). 3½ h.p. three-speed New Hudson.

"Alcestras." A.C. sociable in a medical practice.

"J.H.C." (Leeds). Lincoln-Elk.

"J.P." (Dulwich). Binks two-jet carburetter on an 8 h.p. Jap runabout; ease of starting, slow and fast running.

"W.A.F." (New Zealand). 8 h.p. Bat-Jap solo; wear on tyres and belts, and petrol consumption.

"F.S.J." (Wimbledon) 5-6 h.p. F.N. with sidecar.



A quaint street in Peel, Isle of Man (overlooking the harbour).

A WINTER RIDE IN THE SNOW.

ON Thursday, the 1st inst., a number of members of the Harrogate Club had decided to ride over to Scarborough to hear the lecture which was to have been given there by Mr. J. L. Norton. Nothing definite had been settled regarding the time of starting, etc.

At night we went to bed fully expecting to have a good ride next day, on hard, frosty roads, and we were naturally somewhat surprised, when waking up next morning, to find the ground deeply covered with snow and a perfect blizzard raging. Of course, all thoughts of Scarborough were immediately put out of our heads, but nevertheless, when a number of us met together on the Friday morning, various statements were made as to its being possible or otherwise to get to Scarborough before midnight—a distance of sixty-two miles—if Harrogate were left at twelve o'clock, midday.

The usual offer of slight odds was made and immediately accepted by W. E. Grange, who stated he would ride a 2½ h.p. three-speed Premier. His friend, C. Wilson, then agreed to accompany him on a two-speed Douglas. After these two had departed to attend to their machines, T. W. Monkhouse stated he would ride the distance in the same time on an ordinary push-cycle if anyone would bet him 100 to 1 he could not do it. This bet was settled, and he went away for his machine.

The Start.

Just after twelve o'clock Grange and Wilson started, and by this time the weather overhead was beautiful, and remained so for the rest of the day, although a nasty north-east wind had a tendency to retard the riders' speed.

Wilson took the wrong road at Knaresborough, which lost about fifteen minutes' valuable time, and from here to Green Hammerton the riders came up with the snow plough at work. A further stop of about one hour was made at this village to allow the plough to do some useful work. Slipping belts and a broken one caused further loss of time; snow-drifts were also a source of trouble, and in more cases than one the motor cyclists had to help each other to drag their machines through.

York, a distance of twenty-two miles, was reached at 3.20, and here the riders stayed for some time. Getting on the way again, the roads were found to be rapidly improving, and Malton, eighteen miles away, was reached at five o'clock. Here petrol, etc., was taken aboard, and at Sherburn a stop was made for tea. After Sherburn a good many more drifts were experienced, but without further trouble Scarborough was reached at 7.15, making just over seven hours for the sixty-two miles.

Old Records.

But in the meantime what was happening to the push-cyclist, who, by the way, will this year reach the age of fifty-four? From 1897 to 1910 he held the twenty-four hours Yorkshire (paced) record of 347¼ miles. From 1908 to 1909 he held the world's unpaced twenty-four hours' record of 304¾ miles, and he has also held the twelve hours' record at various times. In 1891 he finished fourth to Shorland (1), Walsh (2), and Bidlake (3) in the North Road race, which was run in pouring rain with about fifty starters. You will see, therefore, he is (or was) by no means a feeble individual in sports. *Revenons à nos moutons*, as the French would say. We find Monkhouse leaving home at about one o'clock, and taking slightly over twenty minutes to do the first three miles. From Green Hammerton to York proved the worst, and near Skip Bridge the rider found it necessary to carry his machine for nearly a mile; and, in spite also of a fall whilst watching some youngsters sliding, he arrived



(1) T. W. Monkhouse, the push cyclist, starting off for his sixty-two miles ride through the snow.

(2) Group at the start of the ride. The two motor cyclists are: (left) C. Wilson (2¼ h.p. two-speed Douglas). (right) W. E. Grange (2½ h.p. three-speed Premier).

(3) A "six horse power" snow plough at work, which rendered valuable aid in the ride from Harrogate to Scarborough.

A Winter Ride in the Snow.—

at York at 4.15, dead beat, and practically deciding to throw up the sponge. Persevering, however, he found, as the others had done, the roads very much improved, but he called a halt at Spittle Beck and had something hot, and his legs well rubbed with whiskey.

Better Conditions.

After this things improved, and Malton was reached about 7.15, where some more sustenance was obtained and also a welcome rest of about half an hour. The snow-drifts near Staxton caused considerable trouble, but luckily they were only deep and not broad as well. This last section is twenty-two miles, and it was covered in about 2h. 20m.—an exceptional performance.

The motor cyclists took seven hours and a quarter; the push-cyclist took nine hours and a half. The motorists had stopped more than the other, and would easily have improved their times had they gone straight on, and they naturally arrived at the journey's end much fresher than the cyclist; but, notwithstanding these comparisons, the performances of all were excellent under such extraordinarily arduous conditions.

H.W.F.

Taxation of Business Motor Cycles.

A TEST CASE TO BE FOUGHT BY THE A.C.U.

WE are repeatedly asked whether a motor cycle is exempt from the local taxation licence provided it be used solely for the purpose of business. Our reply is to refer readers to the list of definitions and exemptions published on the declaration form for establishment licences. This reads as follows:

"For a waggon, cart, or other such vehicle which is constructed or adapted for use, and is used solely for the conveyance of any goods or burden in the course of trade or husbandry, and whereon the Christian name and surname and place of abode or place of business of the person, or the name and style and principal or only place of business of the company or firm keeping the same, shall be visibly and legibly painted in letters of not less than one inch in length."

We feel compelled again to draw attention to this matter on account of some correspondence which has been sent us by a Yorkshire reader, who informs us he uses his motor bicycle solely for the carriage of goods connected with his trade, and has his name and address painted upon the machine in letters one inch in height, the machine being equipped with an extra large parcel carrier. Our correspondent, Mr. T. W. Taylor, of Skelmanthorpe, near Huddersfield, has been exempt from the licence since July, 1907, because he received a letter from an Inland Revenue official of Huddersfield pointing out that his machine was exempt from carriage licence duty provided it was fitted and adapted for carrying goods, and was solely so used.

Five Years without Paying a Tax.

From 1907 until 1911 Mr. Taylor paid no tax, but since the collection of the licence fees has been in the hands of the county authorities at Wakefield he has been informed that his motor bicycle does not come within the exemptions provided by statute, and that the licence committee have no authority to release him from payment of the duty. In view of the 1907 letter referred to, the committee did not press for the payment of the licence fee for 1911, but they do insist on its payment for 1912, and in a letter from the Wakefield authorities it is pointed out that to claim exemption the vehicle must not only be used solely for business purposes, but must be constructed or adapted solely for the carriage of goods. The same letter points out that *a motor cycle is constructed for the conveyance of a person, and the mere fact that an article or articles are carried on the machine does not bring it within the exemptions referred to.* An appeal by Mr. Taylor to the Inland Revenue Board in London brings the reply that "the Board of Customs and Excise having vested the administration of the carriage licence duty in England and Wales in the respective county and borough councils, they cannot interfere in any way in matters in dispute between the councils and the public." This is curious, as this body frames the regulations and sanctions the forms which are sent out.

What is the Correct Interpretation?

One of our reasons for publishing a summary of this correspondence is that an Inland Revenue officer having interpreted the exemption clause in such a way that it allowed a motor bicycle to be exempt, and subsequently another authority gives an entirely opposite opinion, leads one to suppose that there is some considerable doubt as to the correct interpretation. The authorities, of course, argue that if a motor bicycle can be used at any time for pleasure purposes it cannot be constructed *solely* for the purpose of carrying goods. It is just one of those cases which we think should be settled one way or another at once, because if a motor cycle owner is prepared to swear that he never uses his machine for any other purpose than for business and the carriage of goods, we do not think he should be called upon to pay any more than the owner of a trap or other vehicle who does not use it for pleasure purposes.

It is the duty of the county authorities to find out whether the person who makes a declaration is stating the truth or not. If the owner never uses the motor cycle for any other purpose than the carriage of goods, how can the authorities demand a tax except by taking proceedings against him for making a false declaration?

We thought the above case of sufficient importance to warrant the attention of the governing body of motor cycling, therefore the whole of the correspondence has been laid before the Legal Department of the Auto Cycle Union, who have decided that if proceedings are taken they will arrange to defend the case at their expense in the interests of motor cyclists generally. Readers will, we know, await the decision of the authorities in this matter with interest, because there must be a number of motor cyclists who use their machines solely for the carriage of goods in the course of business, and who are doubtful whether to refuse to pay the local taxation licence under the circumstances.

OCCASIONAL COMMENTS.

By "IXION."

The War Office.

If one may judge from the prophecies of service men in general, we are in graver danger of war on English soil than we have been for many centuries, and it is obvious that if this country were invaded, or compelled to prepare for invasion, our vast host of motor cyclists could be of enormous utility to the defending generals.

Naturally, a great many motor cyclists lack the time and inclination to undergo military training, but should an invasion come to pass we should probably all be called upon. Consequently those who do not care to attach themselves to a military unit in times of peace should, nevertheless, stretch their patriotism so far as to acquire two sorts of knowledge. The one is an exact and detailed acquaintance with the roads of their own counties, including all by-lanes, an acquaintance sufficiently thorough to render fast night work within a radius of fifty miles an easy matter; and the other is the rudiments of rifle practice.

Perhaps not all my readers are aware that the rudiments of marksmanship can be acquired with a saloon rifle or airgun. Prior to the outbreak of the South African war an Oxford tutor used to train a few undergraduates with air rifles over a twenty-five yards range in his garden; when the war broke out all these undergraduates enlisted. Not one of them had ever handled a service rifle before, and each of them shot up to "marksman" standard at his first visit to the ranges.

Stream-line Bodies as a Weather Protection.

I have been out on the roads during the late severe weather, and from sights and experiences I am sure the genuine all-weather motor cyclist could do with something in the way of a light shell body, preferably of the detachable type. It should not be very difficult to devise a light steel framework, with either wired panels of patent leather, attached by spring clips, or aluminium panels, which could serve a double purpose, and both protect the rider from dirt in mucky weather, and from cold on frosty and blusterous days.

On the 5th inst. I drove down the Bath Road inside a comfortable limousine, and the motor cyclists we encountered were arousing sincere pity all along the famous highway. They were muffled in leathers, furs, and helmets, but were obviously shivering, and on several occasions we saw riders dismounted and trying to stamp themselves warm. A few days previously I had seen a large clump of mud-bespattered men arousing pity and derision for quite a different cause on another famous main road. There is not the least reason why a motor bicycle should not be as suitable for all weather work as a car, skidding only excepted.

A light shell body, the plan view of which would be roughly V-shaped, would transform rough weather riding; it should protect the whole of the front of the driver, and come high enough to safeguard his anatomy as far as the breastbone, since the ears and eyes can be protected by goggles and sideflaps, while handle-bar muffs can keep the hands warm. The side guards could be made to come sufficiently far back to shield the legs and thighs from side winds, without rendering mounting or dismounting difficult. A machine so fitted would be a rare preventive of chills and colds. The weight need not exceed 20 lbs. to 30 lbs. all told, and the cost would be under £5. The existing mudshields are well enough as a beginning, but they stop short at the protection of the machine, and only in one or two instances do they protect the rider's legs. Any rough weather rider will tell us there are moments when he does not care a hang about the condition of the machine—his whole being goes out in one fervent sob for better protection of the *man*. If "stream-line" bodies are desirable for racing purposes, as a recent correspondent believes, a somewhat more lofty and commodious stream-line body is certainly essential to warm and cosy riding in extremely severe weather.

The Transmission Question.

I notice that some of the American motor cycle journals are making great copy out of the fact that the number of chain-driven machines exhibited at Olympia is on the increase, and their scribes write as if England were abandoning the belt drive on standard touring machines. The facts are quite opposed to such a view. The increase in chain-driven exhibits over here is *at present* almost exclusively due to (a) the increase in change-speed gears, (b) the increase in passenger outfits, and (c) the increase in twin-cylinder engines.

On the single-geared 3½ h.p. standard touring mount the belt is not only *facile princeps*, but its reign is practically undisputed. I do not deny that a more weatherproof transmission may eventually oust the belt, for the faults of the belt are as obvious as its merits, but at the present moment the English trade and public appear to regard the belt as a most satisfactory transmission for standard solo mounts.

Moreover, it is quite on the cards, when we take other pointers of development into consideration, that if a rigid drive does eventually become predominant, that drive may be a shaft rather than a chain.

ANOTHER CONVERSION.

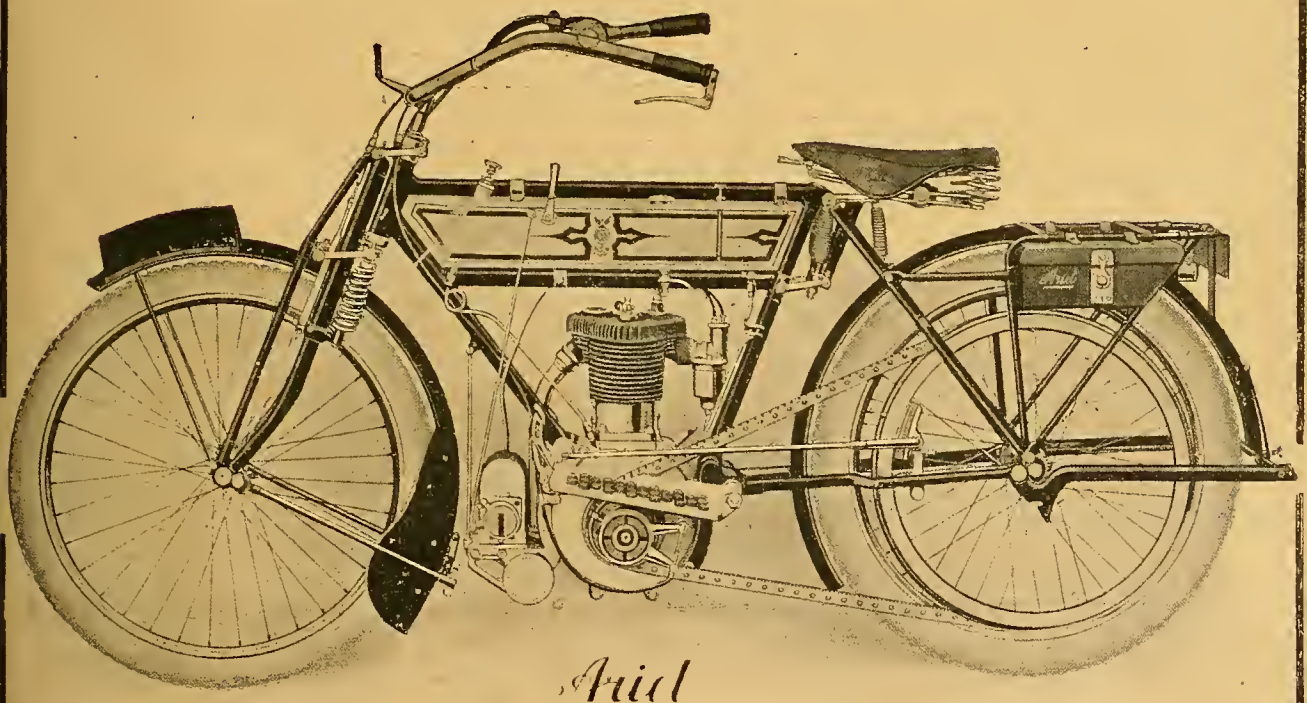


The three-wheeled sociable shown in the accompanying illustration is the property of Mr. R. W. Edwards, of Spennymoor, Co. Durham, and was formerly a Rexette tricar. It is fitted with an 8 h.p. water-cooled twin engine, the transmission is by chain to the rear wheel, and, as will be seen, tiller steering has been adopted in place of the wheel steering originally fitted.

The Ariel

THE FIRST ALL-BRITISH MOTOR CYCLE

Take advantage of our experience.



Ariel

WRITE TO-DAY FOR ART CATALOGUE.

It will cost you One Half-penny.

IT MAY SAVE YOU POUNDS—AND TROUBLE.

Dept. 2, Ariel Works, Bournbrook, Birmingham.

In answering this advertisement it is desirable to mention "The Motor Cycle."

"The Daily Mail," February 2, 1912,

says of the

3½ h.p. ROVER

"IDEAL MOTOR CYCLE."

"Here, surely, is as near the ideal for its type as one can expect motor cycle manufacturers to produce.

It is in perfection of detail that this machine makes so rare an appeal.

Never have I ridden a machine of this type which was genuinely quieter under all conditions of driving.

This engine proves a veritable delight in its instant responsiveness.

The workmanship is obviously of the very best."

1912 Models from £49.

THE ROVER CO., LTD.,

COVENTRY.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

War Office Test at Brooklands.

Sir,—I observe in the issue of February 1st an interesting account of the War Office test of certain motor cycles, and one cannot help thinking it strange that so few of the well-known home manufacturers took part in an event of such public importance. The machines tried were certainly good ones, but I cannot understand why others like the Singer, Humber, Rover, New Hudson, etc., were not included.

Naturally, one can only surmise that the War Office authorities imposed some restriction which caused these firms to stand out. The 2¾ h.p. twin Humber with three-speed gear which won the Junior Tourist Trophy race last year would, I have not the slightest doubt, have put up a good performance, and there are several others which might have been included in order to make the trial a representative one of the best British produced machines. G. W. NOTT.

[No restrictions were imposed other than those published regarding speed and hill-climbing. The trial was private, so, naturally, the War Office could ask which firms it liked.—ED.]

Cycle Passenger Attachments.

Sir,—It is quite evident that the 2 and 2½ h.p. motor cyclist has friends, wife, or children whom he would gladly have for companions, but the expense of higher horse-power, two-speed gears, extra wear on tyres, belts, etc., makes it quite out of the question. To this class of rider I make the following suggestion:

Get a strong lady's pedal bicycle (1¾in. tyre for preference), remove the front wheel and forks, fix the saddle some few inches further back, and couple up alongside the motor cycle. By withdrawing the front fork you not only save the extra licence, but can get a strong connection through the head of the pedal cycle. Then there would be no extra weight on the rear wheel, which is a consideration. Each machine carries its own rider; very little strain on the motor frame, because on approaching any hill the cyclist would pedal as well as the motor cyclist, and this should be about equal to a two-speed gear. The handles would be retained, and the usual back wheel brake.

I generally ride alone, and am getting tired of it, and think if the makers of such appliances would only put the above mentioned to a test, it would become popular. Should be glad to see opinions of lightweight riders through the medium of *The Motor Cycle*. C.D.

Hill-climbing.

Sir,—Last summer I had occasion on tour to descend Honister, so that perhaps the following may be of interest to Mr. F. Smith.

The "surface," if such a word can be applied, consisted of about a foot deep of "loose scree," making it necessary, if I valued myself or my machine, to walk down. This I did, and it required considerable force to hold back the machine, and on applying the brake, even slightly to check the machine, it would skid, and several times nearly went over, the wheels being quite unable to get a grip.

A motor cycle is intended, I believe, for use on ordinary roads and in reasonable places, but to put it to a hill like Honister is sheer imbecility. If all that Mr. Smith wants is trouble, he will get plenty of it, and welcome to it. But I do not think this is what he wants; if not, he is well advised to leave it to someone else. Really, is the honour and glory of being able to get up worth the expense and risk—expense for new tyres, and certain damage to other parts on account of falls; risk of injury to himself, serious if he gets off the road on either side? If he thinks it is, let him try, and if he succeeds, then let him attempt the ascent of Ben Nevis, for surely he will not own that what a car—and an American one to boot—can do, his machine cannot. But if he wants a good honest pull to test his Clyno, let him go abroad, and try some of the pimples there.

With regard to Mr. Newman's remark as to the gradient, I should say that he is correct, as when descending I measured the gradient at several places. PETROLIX.

To the Tyrol and Back.

Sir,—I have read with interest the "Tyrol Tour" of Messrs. Fawcett and Grange, all the more so as they followed, to a great extent, the route I had taken, three weeks before them, to Venice. I was hoping to learn that they were the two English motor cyclists who had left the Hotel Croix de Malte et d'Italie at Lecco on the morning of the day I arrived there, viz., July 6th, and I see that Mr. Grange, strangely enough, stopped at this same hotel, but on July 26th. Who were these two other English motor cyclists? Will they declare themselves? Truly, the world is a small place for motor cyclists.

I cannot agree with Mr. Fawcett that the surface of the Simplon Pass was so bad. There are large stretches of unrolled stones, it is true, but one cannot expect a steam roller on an Alpine pass. Again, I found the pass regulations more fearsome on paper than in the reality. The pass is about twenty-four miles, and, surely, one would not grudge four hours over this, through gorgeous scenery. When one goes to Rome one must do as the Romans do. Therefore, when one goes to Switzerland, drive slowly and considerately, because the Swiss are motorphobes at present.

I feel quite at one with Mr. Fawcett as to the "uncivilised" *pavé* in the neighbourhood of Versailles and St. Germain, and indeed in all the towns and villages on the Boulogne side of Paris. To escape bad roads and *pavé*, go by way of Cherbourg and Normandy, and so diagonally across France to Switzerland.

May I ask Mr. Fawcett one question? He rode a single-geared machine, I a two-speeder. Quite apart from the merits or demerits of gears, would he not have been happier and (in the appalling heat) more comfortable on bad *pavé*, mountain hair-pins, and passes generally, if he had had a low gear to crawl along on? In answering this question I would like him to put aside whether or not there is more sport in conquering passes on a single gear. Mr. Fawcett will agree with me, I am sure, in advising all prospective tourists to avoid the roads in the Plain of Lombardy.

I may say that I have planned a tour for this summer which comprises the Rhine Valley and the four highest European passes, but I have not yet found a companion.

I should like to thank Mr. Fawcett for a most interesting article, and I hope you will continue to publish tours, as to me, at any rate, they are infinitely more interesting than accounts of records, hill-climbs, reliability trials, and such like. R.M.B.J.

Experiences of the R.I.C.

Sir,—May I relate an encounter I had with a Dublin "bobby"? I was pushing my motor cycle along a side street trying to find a certain office. Not finding the place, I pushed my machine to the end of the street, where there was a constable on point duty standing on the far side of the main street. As I was pushing my machine, I did not trouble to sound my horn when I came to the corner. When I reached my friend, he gravely pointed out my error at my not sounding the horn, and said, "Shure now, if

ye was kilt ye would not have a word to say for yourself." On my remarking that that was more than likely, he told me to "G'wan out of that," and then, bending down, he whispered softly, "I suppose you couldn't give me any tips for Leopardstown."

The Irish police are, as "Pat" says, a most sporting lot, but are as stern as any other breed against wilful offenders.

T. C. D.

Sir,—Having read with considerable interest, "Pat's" letter on the sporting way in which the R.I.C. dealt with his case, I should like to inform your readers of the difference in treatment meted out to me by the London police.

On Saturday, December 9th, 1911, I was proceeding towards Sutton, and, owing to the congested state of the traffic, was compelled to run very slowly (for some distance on the low gear). On getting to Figgs Marsh, where I was aware a police trap was being worked, I was stopped by the police and informed I was exceeding the limit. My maximum hand on the speedometer registered 14¾ m.p.h., and this was pointed out to the sergeant. However, I was summoned and convicted at the Croydon Police Court on the evidence of the three policemen working the trap, which was so much at variance with my evidence and that of my witnesses that the solicitor to the R.A.C. (who defended me in court) brought the case to the notice of the Scotland Yard officials. Whilst the high police official who investigated the case was most courteous in his treatment, he expressed regret, etc., that nothing could be done, the evidence being so conflicting and the police officers' statements so much alike. The main point was that the sergeant stated in evidence that he tapped the glass of the speedometer (a Cowey), and the maximum hand fell back, whereas my witnesses swore that he did not tap it, and that had he done so it would not have fallen back. The high police official who investigated the case asked the sergeant to tap the glass of the speedometer in his presence, which he did, and the maximum hand did not fall back.

Although I had the matter investigated, the position remains precisely the same, so I have adopted the only course of active protest open to me. I resigned from the special reserve of police and the National Reserve, and I would suggest that if an active protest were made by motorists in all cases where they have been so unjustly treated, there would soon be a much better state of affairs brought about, and the long-suffering and undoubtedly persecuted motorist would receive treatment more in accordance with our friend "Pat's" experience.

In conclusion, please allow me to congratulate Irish motorists on having such a fine body of police as the R.I.C.

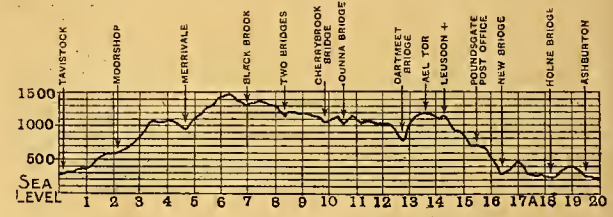
A. H. PRIESTLEY.



"Frozen jet"—one of the drawbacks of winter riding.

Suggested Routes for the Six Days' Trials.

Sir,—You may recall some correspondence over the signatures of "T-111I" and "H.P.B.," in which route 746 in the "Contour Road Book" was mentioned as a tough one. A little party, including the above-mentioned, acquainted through your valued journal, made measurements of part of the route and gradients during a recent week-end. I enclose a contour section culled from Gall and Inglis, and the actual gradients obtained appended thereto.



Contour section of route 746 from Gall and Inglis route book. Between the 12th and 13th milestones the steepest gradient is 1 in 5·3, 13th and 14th 1 in 4·8, 4·9, 5·5, and 1 in 6; 14th and 15th 1 in 5·3; 16th and 17th 1 in 4·5, 5, and 6·3, and on a bend 1 in 4·36; 17th and 18th varying from 1 in 3·5 to 1 in 6 from inside to outside of bend.

The corner marked A on the diagram provides an excellent example for "the exaggeration of gradients." Measured at various points across the width of the road, anything between 1 in 3.5 and 1 in 6.0 is obtainable. A solo machine ridden wide out would traverse the latter figure. A sidecar machine (sidecar on left) would take a track at about 1 in 4.5 to 5.0; but I venture to opine if a certain type of rider went over the route, it would be a much-lauded performance over a 1 in 3½ grade. Dartmeet (Ashburton side), like Birdlip, has no acute corners, but is shorter and considerably steeper. One occasionally reads of the 1 in 4 on Birdlip, but such does not exist. The very worst of Birdlip occurs nearly in the middle of the hill, and gives thirty yards of 1 in 5.5. At the top it tilts up again for a few yards, from 1 in 9 to 1 in 6.

A Triumph (solo), Bradbury (solo), and 5·6 h.p. Bat (two-speed, coach car, Whittle belt) journeyed, and none made an entirely clean ascent of all hills, though at the same time no particular effort was made to do so, surveying being the order of the day. Belt slip (in spite of resin) let the sidecar outfit right down on two occasions, 7.7 being too high a gear to allow any margin for belt slip and for the heat resulting from miles of large throttle, on low gear. The failures were particularly annoying, as occurring on grades quite insignificant with those already climbed. No second attempts were made, owing to the belt-stretching-and-slipping nuisance.

This being a main road route, I suggest it affords a good road for inclusion in the Six Days' (Taunton) Trials, especially if non-stops were insisted on, to exclude the crude method of change-speed gearing by shortening belts and screwing out pulleys.

If anything steeper is wanted, a hill off this road grades 1 in 2¾, and not merely a Staxton Brow hump in the road (*vide* gentleman residing near by).

H.P.B.

Sir,—With Taunton as a centre of the Six Days' Trials, the competitors will no doubt have an opportunity of testing their machines on the Devonshire hills, which are narrower and more curly than some which they have met before; and innocent-looking hills, on which, when the apparent summit is reached, is found another rise with perhaps a single figure gradient, are followed by an ascent with several bends of perhaps half a mile.

There are, however, two routes in Devon that the ordinary local rider generally shuns, or, if he goes there, is prepared for possible trouble. These routes are the Lynton and Lynmouth roads, and Porlock (although a little way

inside the Somerset border) might be included. The other route is the twenty miles run from Tavistock to Ashburton *viâ* Two Bridges.

Could not local riders perhaps help the organisers of the Six Days' Trials by making suggestions and giving particulars of hills a little bit off the main road, but sufficiently close to be useful as a hill-climb? Would the organisers welcome such suggestions? T 1111.

Definition of Quadcars and Runabouts.

Sir,—In looking through your issue of February 8th, we could not help feeling some little surprise at the absence of any reference to the Wall machine in your article on the definition of quadcars and runabouts. As you know, our firm were one of the pioneers of the tricycle movement, and its present perfected form deserves a place in any comprehensive review of these interesting articles. A. W. WALL, LTD.

[We apologise for the apparent omission of the Roc tricycle, but the list published was not a complete one of every runabout on the market. The weight of the Roc chassis is 3 cwts.—ED.]

Two-stroke Engines.

Sir,—Having read with great interest the very able article by "W.G.A." in your issue of the 1st inst. upon the subject of two-stroke engines, might I be permitted to ask for information upon a point which, I believe, would be of general interest to those who, like myself, are beginning to awaken to the possibilities of these engines?

What I would ask "W.G.A." to oblige with is a brief description of the means adopted by the various makers he mentions to vary the speed and power of their engines within the limits of flexibility of the type. I presume the effect of varying the time of ignition to be about the same as in a four-stroke engine, but the arrangement of the throttle (if any), and whether it is placed between the carburetter and the crank case or other compressor, or between such compressor and the working cylinder, is a point upon which I desire enlightenment; also I should like to know approximately what range of flexibility can be obtained with each type. T 51.

[All of the engines described in the article on two-stroke engines are controlled in exactly the same way as are those of any other type, viz., by altering the setting of the ignition and by the use of the throttle on the carburetter. Whether this system is right or not remains to be seen, and it is possible that this point will be thoroughly dealt with in a future article. In the meantime, it is interesting to note that the two-stroke Scott engines which were used in the T.T. race last year were fitted with rotary distributers applied to the transfer ports, whilst a mechanical arrangement in the distributer itself takes the place of the usual throttle.—ED.]

Who will Adopt the Quadcar?

Sir,—While agreeing in general with your remarks in your leaderette of the 8th inst., relating to quadcars, permit us to point out that it is by no means difficult or impossible to keep within the weight limit of 3 cwts. for these cars. No model of the Bedelia, which is practically the only standardised quadcar which has stood the test of time, weighs as much as 3 cwts. Even the 10 h.p. model, which is the heaviest, does not exceed this weight. L. N. PALMER AND CO.

Sir,—I am rather sorry to note the position you take up in your leaderette, "Who will Adopt the Quadcar?" With all possible respect to the weight of the editorial opinion, I submit that the "sociable" of whatever form is a vehicle of interest only to motor cyclists. This being so, how can it be expected that men whose whole interests are centred in cars can sympathise with the wants of motor cyclists, who are the class that will use the new vehicle? Surely the officials of the A.C.U. are the men! The fact that Government regulations dub a motor cycle with four wheels a car should not have much influence on the opinion of motor cyclists.

The demand for the sociable arises primarily from those who are dissatisfied with the protection given to the rider of the sidecar. Though his passenger is well looked after, he must still don the hideous and ostracising overalls. We want a motor cycle to carry two—a substitute for the sidecar. Whether the best form is one with three or four wheels remains at present an unsolved problem, and one that should be decided as soon as possible. But this can only be done by allowing the two to compete side by side, with no restrictions save weight and price.

It seems to me absolutely axiomatic that if the new vehicle is to survive it must be in virtue of its complete disconnection from car lines, partaking entirely of the characteristics of the motor cycle. I think, therefore, that the limits of 600 lbs. and £100 mentioned on page 138 of your issue are too liberal, since they will admit much of the car element which must be kept out at all costs. It is rather interesting to note in this connection that the only machines in your list which have acquired any reputation at all fall far within these limits. May it not be that herein lies one of the secrets of their success? H.M.

Multi-pole Sparking Plugs.

Sir,—Having read with interest the correspondence under this heading, I write giving my experience with the Lodge d.p. plugs, which I have fitted to my sidecar machine, a 9 h.p. Bat-Jap.

I have the d.p. plugs fitted in cylinder heads and plugs of another make over the exhaust valves. I have not had any trouble in starting (owing probably to having free engine with handle starting), but I find a great improvement in running, the engine being more flexible and keeping much cooler with a marked increase of power with the same throttle opening. This can easily be tested—when climbing hills and shorting the ordinary plugs the engine speed falls off, but when the short is taken off the engine at once picks up without touching the throttle or air lever, which proves what the makers claim for them.

As to the magneto this is not in the least affected, and does not seem strained or overloaded, and does not get hot, which it would do if overloaded, especially in a position like the Bat, protected from cooling draught in the tank.

H. WITHERS.

Sir,—In reply to the letter from Mr. Arthur E. Bennett on the above subject, we would like to point out that the Lodge plugs are in use on a large number of motor cycles, and no magneto has yet been damaged by their use. This is as everybody, who looks into the question, would expect.

The severest strain that a magneto must be designed to withstand is when the engine is turning round fast, and the high tension cable becomes detached from the sparking plug. The spark, of course, then occurs at the safety spark gap. If the use of the double pole plugs strained the machine to anything like this extent, there would be constant misfiring, owing to the spark occurring at the safety gap. As a matter of fact, if the double pole plug is used according to our instructions, it is practically no harder work for the magneto to fire at the two plugs than at the one ordinary plug. . . . . You will observe that no maker of magnetos who does not also make a double pole magneto has offered any objection to the use of the Lodge plugs.

We think the two diagrams shown below will illustrate what a slight difference there is between the two methods of

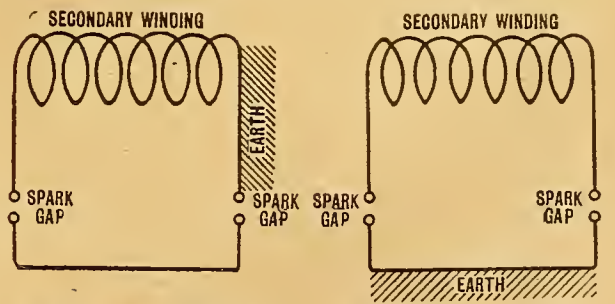


Diagram of high-tension circuit for ordinary magneto, using one Lodge double-pole plug and one ordinary plug.

Diagram of high-tension circuit for double-pole magneto, using two ordinary plugs.

firing under discussion, and unless the double pole magneto is considerably larger than the single pole magneto, it would be difficult to provide any more insulation. The two circuits are the same, the only difference being that a different part of the circuit is "earthed." LODGE BROS. AND CO.

Silence.

Sir,—In your issue of February 8th we notice a letter from Mr. H. D. McRae Gallanday, describing and illustrating a silencer in which air currents are induced by and mixed with the exhaust gases. This silencer was fitted to the early experimental "Scott" machines, and is fully protected by our patent No. 3367 of 1904.

THE SCOTT ENGINEERING CO., LIMITED.
FRANK PHILIPP.

Silencers in the Big Trials.

Sir,—To read "Ixion's" comments in the issue of February 8th in regard to the above, one would think that there was only one type of silencer, and that the barrel style with a number of small holes out of which the exhaust gases pass.

I would like to ask if "Ixion" has any objection to the type of silencer used on the Indian motor cycle, which consists of a very large exhaust box with a long tapered tube attached to it leading out past the rear wheel, and would he suggest that this most efficient type of silencer be discarded in favour of his suggested A.C.U. silencer with a fixed number of holes and an auxiliary barrel inside the main exhaust box—a device which, at its best, can only be an efficient silencer and cause back pressure, or be free and noisy. NIGHTBIRD.

Experiments with Hydrogen Peroxide.

Sir,—The tip which one of your readers gives to increase the brilliancy of the light of acetylene lamps, namely, by using hydrogen peroxide H_2O_2, is at fault, for when oxygen is mixed with an illuminating gas it reduces the luminosity of the gas by consuming the carbon in the flame; but, on the other hand, if acetylene be burned in an atmosphere of pure oxygen, or rich in oxygen, it burns with intense brilliancy. Special care should be taken not to spill hydrogen peroxide on any of the aluminium parts of the cycle, for it instantly oxidises it, and, if left on, will rapidly corrode it into holes. M.P.S.

A proof of the above letter was submitted to Mr. A. Renfred Myhill, whose article on the above was published January 25th. He replies as follows:

Sir,—I am returning the proof of your correspondent's letter. With regard to the first part, I think he must be thinking of the effect of oxygen on a gas such as ordinary coal gas, where the admission of oxygen into the gas would have the effect described. With acetylene, however, much more oxygen is required for complete combustion than in the case of coal gas, so that, up to a certain point, mixing oxygen with it before combustion is an advantage, since ordinary air around the flame rarely suffices to burn the gas in the best possible manner. Of course, a great excess of oxygen would reduce the brilliancy.

With respect to the second part of his letter, he is theoretically correct, as H_2O_2 certainly has an oxidising effect on aluminium, but, from experiments I have conducted, I find that the action is so slight as to be of no great inconvenience.

I am sending, under separate cover, two pieces of aluminium, one of which (marked "X") has been in a solution of hydrogen peroxide (about ten volumes) for forty hours, and another piece, cut from the same sheet, which has been left untouched. You can see for yourself that the action is very slight, so that your correspondent's remark that it will "rapidly corrode it into holes" is quite erroneous. A. RENFRED MYHILL.

A.C.U. Trials Regulations.

Sir,—It was with some surprise that I read the summary of the conditions for the A.C.U. one day trial, to be held on March 2nd. To qualify for a first-class certificate a machine must conform to the eleven requirements drawn up by this body, No. 1 of which I think quite out of place, viz., "that all machines *must* have a free engine or a variable gear." Now, in my case, I have just bought a 1912 Douglas model G, that is the ordinary single speed and no free engine. There is no need for me to go into the abilities of this famous little machine, as it is now well-known, but I feel certain whatever the course may be on the 2nd, excepting punctures, I shall get round and fulfil all the other requirements of the A.C.U.

My weight in ordinary clothes is 10 stones 8 lbs., and I am able to take hills of about 1 in 6 or 7 without pedalling. If we are to have steeper hills than this (which may quite well be expected) I believe this machine comes under the class when pedalling is allowed. However, if one has faith enough in his machine to enter why should he not be allowed to without having to ride a free engine or variably geared model?

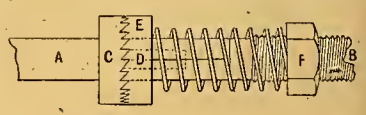
What is the use of a free engine on a machine that starts as easily as a 1912 Douglas, or a two-speed gear for a rider of my weight? It takes me practically anywhere without pedalling and absolutely anywhere with pedalling. I know some object to be seen pedalling. Well, they need not be seen doing so if they ride a Douglas, because it is only on exceptional hills right away from main roads that it is ever necessary, and in such out-of-the-way places there is seldom anyone to see them.

The A.C.U. has lost my entry fee for one in this trial, and I am certain there must be others who own machines quite capable of making non-stop runs without having the free engine or two-speed gear, but who, under Rule 1, will be shut out. . . . . .

I am, for the time being, with my single-speed mount,
CONTENTED.

The Evolution of Transmission.

Sir,—The recent articles in your most excellent paper on the above subject are quite interesting. Of course, it is fairly obvious that eventually the shaft drive must come to the fore. A belt or chain was naturally the first drive to be used, as its construction is so much cheaper and its mechanism simpler. The motor car started in just the same way, and it is only of recent years that it has emerged from the abyss of the belt-slipping or chain-jumping-sprockets-never-ending trouble of this form of drive, and, of course, as soon as the public demand it, the motor bicycle will do the same. The accompanying drawing is a simple form of clutch which could be fitted to a shaft drive to guard against the unpleasant consequences of engine seizing. A B is the driving-shaft. A is the engine end, and has fixed flange C and also pin D. One end of the shaft marked B is finished off square, upon which is placed the flange E, which meshes with the flange C. F is the nut to adjust the tension of the spring until it is just strong enough to hold the ratchet in position when the engine is pulling full power. Then in the event of the engine seizing, the ratchet would slip, and thus prevent unfortunate events equally as well as the belt.



E. NEAUM.

Inclined Engines.

Sir,—"Ixion," in the issue of February 8th, comments on the American practice of inclining the single-cylinder engine backwards, and expresses a desire to learn the reason why.

I can only speak for the Indian, the pioneer motor cycle of America.

The first and most important reason why our single-cylind r engine is inclined backwards is because the cylinder walls get far better lubrication in this position than when standing vertical, particularly on the back side of the cylinder where all the piston thrust comes. It is a well-known fact that in all twin-cylinder engines (except our own, where the oil is fed directly into the wall of the front cylinder) the rear cylinder gets better lubrication than the front. A little study of the principle of splash lubrication will soon convince anyone why this is so.

A second and very good reason why the single-cylinder is inclined backwards is that on account of its being a long-stroke engine with overhead m.o.v., a lower frame can be used than would be possible if the engine were set vertically.

A third and somewhat reasonable argument for inclining the engine backwards is that in this position there is no piston clatter, which is so often experienced in vertical engines, though partially overcome by putting a piston ring at the bottom of the piston.

The only reason I can offer for other American manufacturers adopting the backward position of the single-cylinder is that they all more or less endeavour to copy our design, in the same way that some of the more recent entrants into the English motor cycle business have copied the pioneer makes in this country.

As for weight distribution, inclining the cylinder backwards does not throw more than two pounds at the very most off the vertical position, and in our case this is more than offset by the location of the magneto.

W. H. WELLS.

A WORD ON INTERNATIONAL COMPETITION.

NOW that after a lapse of some years international competitions are being revived, it is to be hoped they will be well supported on both sides. The hearty welcome extended by the Dutch Motor Cycle Club has met with an excellent response, and we hope that other important Continental competitions will likewise be supported. In the same way two great international events, the Tourist Trophy Races, are open to the world, and foreign makers will be heartily accepted in the entry list to compete on even terms with British machines. Last year France, Germany, America, and Switzerland were represented, and we hope that support will be forthcoming from these sources again. We do not wish to be unpatriotic, but if important English makers wilfully withdraw from the races, the A.C.U. has no other alternative but to welcome entries from small English makers and foreigners. It would greatly emphasise the sporting side of the event if a special international prize were given to the best aggregate times made by a team of five riders, the components of each team to be of one nationality, and if, say, England, France, Holland, and Germany were to enter teams it would greatly increase the interest in the races. In whatever Continental events English teams compete this season, it is to be hoped that their members will respect and not abuse the hospitality offered to them.

A SHROPSHIRE TOLL BRIDGE DOOMED.



ON the wall of the toll house at the end of the doomed trestle bridge at Cressage in Shropshire may be seen the scale of charges. Coach and six, 2s.; coach and four, 1s. 6d.; carriage with two horses, 1s.; cattle, 10d. per score; sheep, 5d. per score; pedestrian, 1d. There is no mention of the motorist, but the toll of one shilling for a car and sixpence for a motor cycle has been a cause of much adverse criticism for several years. Within a few weeks the work of replacing this wooden trestle bridge by a stone bridge free from toll will be commenced. The property has already been purchased for the sum of one thousand pounds, and during March the task of demolition and construction is to be initiated.

Gradually but surely the few remaining toll bars and bridges are being swept away to make room for more modern methods. No form of road traffic has more right to demand up-to-date improvements than the motor cycle and the motor car.

MOTOR CYCLISTS' PROGRESSIVE ASSOCIATION.

THE following manifesto letter has been sent to us for publication. It has been issued by a provisional committee of members of the A.C.U. and representatives of affiliated clubs, who are desirous of introducing reforms in the conduct of the A.C.U., the governing body of the pastime. We publish an editorial comment on the situation in another portion of this issue:

The Editor, *The Motor Cycle*.

Sir,—At a meeting on the 8th inst., it was agreed to form the above Association, its immediate objects being:

1. To assist the A.C.U. in furthering the interests of motor cyclists.

2. To work to secure the adequate and efficient representation of active motor cyclists throughout the United Kingdom upon the committee and sub-committees of the A.C.U.; in other words, to ensure the government of the pastime *by* motor cyclists *for* motor cyclists.

Only open to A.C.U. Members.

It is strongly held by the promoters that there can only be one governing body, and that body is the A.C.U. For this reason, membership of the Association is confined to members of the A.C.U. and its affiliated clubs.

It is equally strongly held that the governing body must, in future, keep closely in touch with the needs and desires of the motor cyclists of the kingdom.

We want the A.C.U. to have a membership of 100,000 instead of about 5,000.

The subscription to the Association is 1s. per annum, so that no one need hesitate to join on the score of expense.

May we point out to our provincial friends especially that this Association should, and doubtless will, provide a special means of conveying their views to the governing body in London.

The committee appointed—with power to add to its number—consists of Messrs. J. W. G. Brooker, W. H. Brown, C. C. Cooke, W. Cooper, F. A. Hardy, A. J. Moorhouse, W. H. Wells, and the undersigned.

A further Meeting on the 29th inst.

A further meeting has been arranged to be held at the Holborn Restaurant at 7.30 p.m. on Thursday, February 29th, to which all members of the A.C.U. and affiliated clubs, in sympathy with the movement, are cordially invited.

In the meantime, applications for membership, accompanied by subscriptions (1s.), should be addressed to Otto Thomas, chairman, *The Motor Cycle* Offices, 20, Tudor Street, E.C., or W. G. McMinnies, hon. secretary and treasurer, Temple Press, Ltd., Rosebery Avenue, E.C.

BIJ



TIME TO LIGHT LAMPS.

Feb. 15th	...	...	6.10 p.m.
,, 17th	...	...	6.14 ,,
,, 19th	...	...	6.17 ,,
,, 21st	...	...	6.21 ,,

Winter Riding in France.

Despite the cold and the snow-covered roads, the Motor Cycle Club of France, to the number of fifty, held a run early last week from Paris to Compiègne.

Gala Day at Brooklands.

The Royal Automobile and Associated Clubs will hold a race meeting on the 27th July at Brooklands. The following motor cycle races will be held: A team race, each affiliated club to send a team consisting of two solo and one passenger machine, and a handicap race for solo machines. Mr. H. P. E. Harding is representing the A.C.U. on the R.A.C. sub-committee appointed to draw up the regulations.

A.C.C.F. Hill-climb.

The following regulations have been adopted by the A.C.C.F. for the hill-climb at Montenglaust (Coulommiers) on the 25th inst:

Motor cycles, Classes 1 and 2.—Maximum weight of machines unladen, but otherwise ready for the road 50 kilos (110 lbs.); section of tyres 50 mm. (2in.)

Class 3.—Maximum weight 60 kilos (132 lbs.); section of tyres 60 mm. (2⅜in.).

Tricars and Voiturettes. — Combined weight of passenger and driver 150 kilos (330 lbs.). The competition is open to amateur riders, and the names of the machines ridden will not be published. The results in each class will be worked on formula.

Entrance fees are: Manufacturers, 20 frs.; manufacturers (members of A.C.C.F.), 15 frs.; amateurs, 10 frs.; amateurs (members of A.C.C.F.), free.

Auto Cycle Union Notes.

Open Competitions.—Permits have been granted to the following clubs to hold open competitions, subject to the regulations being in order:

Essex M.C. Open hill-climb, March 16th.

Derby and District M.C.C. Open hill-climb, March 30th.

Bristol M.C.C. Open hill-climb, April 20th.

Taunton and District M.C.C. Open hill-climb, May 16th.

Birmingham M.C.C. Open hill-climb, June 1st.

Birmingham M.C.C. Twenty-four hours' run to Edinburgh, September 21st.

Mersey M.C. One day trial, May 4th.

Mersey M.C. Open hill-climb, June 29th.

Mersey M.C. Open hill-climb, August 5th.

Six Days' Trials Awards.—As announced in our last week's issue, *The Motor Cycle* has offered two silver cups to the A.C.U. for the Six Days' Trials—one for the best performance by a private owner on a solo machine, and one for the best performance of a private owner on a passenger vehicle.

Dr. Iles, president of the Taunton B.C., has offered a silver cup for the best performance of a solo machine in a slow climb up Porlock, and it has been suggested that the cup offered by Mr. F. Harrison shall be awarded for the best performance of a passenger machine also in the slow climb up Porlock Hill.

Colonel Bowles, M.F.H., M.B., president of the Taunton and District M.C., has been asked if he will agree to the cup he has kindly offered being presented for the best performance of a passenger machine on the observed hills.

A hearty vote of thanks to those who had kindly offered these prizes has been forwarded by the A.C.U.

Motor Cyclist v. Roller Skater.

An exciting race took place at the Bootle Roller Skating Rink recently between Mr. J. Davies (5 h.p. two-speed Rex) and Mr. Warbis, who used roller skates. Mr. Davies is an amateur rider, who has never taken part in any race before; whilst Mr. Warbis is the fastest amateur skater in the district. The competitors started from opposite sides of the rink, and had to cover sixteen laps, or one mile.

The skater took corners very close in, and foot by foot drew up to his rival until at one point he was within six yards of the back wheel, and then the motorist pulled away from him, and finally won by yards. Time, 3m. 45s., 16 m.p.h.

SPECIAL FEATURES.

A Winter Ride in the Snow.
Electric Lighting for Motor Cycles.
A Sidecar Tour in Ireland.

Chest Pads for Racing.

American motor cyclists who wish to crouch down as low as possible on their machines to overcome wind resistance wear pads on their chests to protect them from vibration as they lie flat along the top bars of their machines.

British Imports and Exports of Motor Cycles.

The imports and exports of motor cycles and parts for the month ended January 31st, and extending over the last three years, are as follow:

Imports.

	1910.	1911.	1912.
Motor cycles ...	£3,676	£3,603	£3,480
Parts thereof ...	3,888	3,503	4,833
Total ...	£7,564	£7,106	£8,313

Exports.

	1910.	1911.	1912.
Motor cycles ...	£8,702	£18,804	£38,727
Parts thereof ...	2,283	4,895	13,436
Total	£10,985	£23,699	£52,163

As will be seen, the value of the month's exports each year is just over twice the amount for the corresponding period of the previous year, whilst the value of motor cycle parts exported in January this year is nearly three times that of the same month last year. The January imports have slightly increased since 1911, but an export value over six times that of the imports is sufficient proof of the healthy state of the industry.



OFF THE BEATEN TRACK. A scene in Cheshire during the recent severe weather.

Inter-team Trial in Surrey.

Owing to confusing F. W. Barnes with another competitor, we credited the former with changing the belt on his Zenith-Gradua in the above team trial, whereas he went right through with only one puncture in an unobserved section.

Entries for the T.T. Races.

The following is a complete list of the entries for the Tourist Trophy Races to be held in the Isle of Man on June 28th and July 1st:

SENIOR RACE.—O. C. Godfrey (holder), C. R. Collier, H. A. Collier, S. A. M. Witham, Blumfield, Ltd. (three Blumfield machines), John Gibson, J. T. Bashall, W. H. Bashall, D. C. Bolton, Hal. Hill, E. T. Bolton, J. L. Norton (3½ Norton), P. Brewster (3½ Norton), Scott Engineering Co. (two Scott machines), J. W. Woodhouse (Precision), and F. A. Applebee, jun.(———).

JUNIOR RACE.—P. J. Evans (holder), C. R. Collier, H. A. Collier, and J. W. Woodhouse (Precision).

The A.C.C.F. and the A.C.F.

At the present time the only body which is really alive to the interests of motor cyclists in France is the A.C.C.F., which ran the Gometz hill-climb so successfully last December. This energetic club is the first to devote itself seriously to the development of the motor cycle across the Channel, and is organising a hill-climb at Coulommiers on the 25th inst., and the



round Paris two-day reliability trial at Easter (appended is a map of the trial route), to which the Auto Cycle Union intends to send an English team, as well as other competitions. The latest development has been the refusal by the Automobile Club of France to recognise the A.C.C.F. What has happened is that the A.C.F. has let whatever interest it had in motor cycles drift into oblivion, and, now that an energetic body has set the ball rolling, has suddenly awaked to the fact that its powers are being usurped. It is unfortunate that there should be any discord at all at this juncture, when the sport is receiving a distinct fillip, and it is to be hoped that the A.C.F. and the A.C.C.F. will speedily patch up any differences which may exist. After the activity displayed by the latter body, the Motor Cycle Club de France has suddenly roused itself from its lethargy, and is organising several competitions.

FUTURE EVENTS

Feb. 17.—Sutton Coldfield A.C. Open One Day Trial.
Mar. 2.—A.C.U. Open One Day Trial.
„ 23.—B.M.C.R.C. Race Meeting.
„ 23—Herts. County A.C. Open Quarterly Trial.
„ 30.—Derby and District M.C.C. Open Hill-climb.
Apl. 5-8.—N.W. London and Herts. County M.C.C. Joint Trial and Open Hill-climb (Yorks.) and Ladies' Competition.
„ 8.—Westmorland M.C.C. Open Hill-climb on Brigster Brow
„ 13.—Oxford M.C.C. Open Hill-climb

Proposed Speed Limit at Hammersmith.

The inquiry into the necessity for speed limits at Hammersmith will take place on the 29th inst., when the following restrictions will be asked for: (1.) A ten-mile speed limit from Brook Green to Hammersmith Broadway. (2.) A five-mile speed limit across Hammersmith Broadway and the immediate approaches. The R.A.C. and the A.A. and M.U. are opposing this application, which is of unusual interest, as it is the first to be made for a speed limit on an arterial thoroughfare in London.

A Wonderful Engine.

A friend of ours, whose fertile brain turns out many inventions per annum, has lately built a wonderful engine which is fitted to a quadcar. The said engine is of microscopic dimensions, and fires a mixture composed of secret ingredients compressed to 200 lbs. per square inch. Although some of our friend's inventions are never heard of, this one has been, and its dulcet tones were first heard by a policeman. "Sir," said the worthy member of the force whose attention had been drawn to a gentle sound like the accentuated barking of an accelerated pom-pom, "you cannot drive a noisy motor car like that in the public streets." Our friend whispered above the re-echoing reverberations, "You mistake, my worthy one, the silencer cut-out byelaw is not yet in force." "No more it ain't," responded the sporting bobby in the purest classical English, "but if you will kindly make that machine stop that there barking, I'll help you push it 'ome, otherwise I shall constitoot that there motor car to be a noosance and hact accordingly"; all of which is by way of being a true story. The moral being that the byelaw referred to is unnecessary, as the police can prosecute under existing conditions.

Proposed Saucer Track.

What has become of the proposed Midland saucer track, concerning which there was considerable talk a month or two ago? Is it to sink into oblivion, as many other schemes in connection with motor cycling have done this last year or two?

Rear Red Lights in Warwickshire.

The first prosecution since the new red rear light byelaw came into force in Warwickshire was brought before the authorities on Monday. Defendant was driving a carrier's cart; he was let off on payment of costs. Every vehicle in Warwickshire after dark must carry a red light at the rear.

Saturday's Trial.

There are over a hundred entries for Saturday's open reliability trial of the Sutton Coldfield A.C., including the majority of the leading trade men. A new figure to competitions of this nature is C. R. Collier, who has entered an 8 h.p. Matchless-Jap.

Arms Hill Climbed.

Arms Hill, near Henley-on-Thames, was the subject of an article in this journal on the 1st inst. Since that date several parties of motor cyclists have journeyed to the hill in order to try conclusions with it. Some photographs appear on page 175.

Universal Rear Lights.

The Bucks County Council decided on the 8th inst. that supplementary byelaws be made by the council requiring all vehicles to carry a red rear light after dark. It is to be hoped that the example which has now been set by Warwickshire, Hampshire, and Buckingham, will be speedily followed by other counties.

An Unconfirmed Rumour.

A rumour to the effect that Jake de Rosier is to ride a Matchless machine in the T.T. Race having gained currency, we enquired of Messrs. Collier and Sons, Ltd., if the report were true, and their reply is that they know nothing of the matter. It is known that de Rosier ordered a Matchless motor cycle when he was in England, as we announced the fact some months ago.

An American Motor Sledge.

A motor cyclist of Columbus, U.S.A., has designed and made a motor sledge driven by the power unit of a 7 h.p. Indian with the usual transmission. The power is conveyed to a motor cycle wheel fitted with a pneumatic tyre, and adhesion to the snow covered ground is obtained by means of a chain which encircles the tyre similar to a Parsons non-skid. The engine, magneto, oil tank, etc., are situate in front of the sledge, and the driving wheel in the centre. The steersman sits behind the steering wheel with a leg on each side of the driving wheel.

Necessity is the Mother of Invention.

One of our staff was riding home one night during the recent severe frost and saw a strange light at the side of the road. On approaching he found it was a small fire, the result of petrol being poured on the road by a motor cyclist. The rider had been held up through the water in the lamp generator freezing, and to thaw it he spilled petrol on the ground, lit it and was holding the generator over the bonfire—"needs must."

An acquaintance recently had the unpleasant experience of a belt breaking at 2 a.m. on a winter's day, and a search in his tool kit failed to reveal the belt punch, so he took out the belt fastening screw, held it in a pair of pliers and made it red hot in the flame of the

SUTTON COLDFIELD A.C. RELIABILITY TRIAL.

The following additional entries have been received for the above trial which will be held next Saturday starting at 9.30 a.m. from the Gun Barrels, Bristol Road, Birmingham. Competitors will be started in pairs at half minute intervals; there will be 1½ hours for lunch at Banbury, and no stop on homeward run.

C. R. Collier (8 Matchless)
C. A. Marshall (2¼ S.I.A.M.T.)
C. Hill (3½ Rudge)
G. Bryant (6 Rex-Jap sc.)
H. F. S. Morgan (8 Morgan)
S. Kempson-Jones (3½ L.M.C. two-speed)
L. Yates (8 Rex-Jap sc.)
N. Crozier (2¼ Levis)
J. Chater-Lea (8 Chater-Lea sc.)
E. T. Hill (3½ Ixion-Jap)
W. Russell (3½ Quadrant)
W. L. Overend (5 P.V.)
T. J. Watson (3½ James 3-sp.)
A. G. Clease (4¼ Calthorpe sc.)
R. Lord (6 Rex 2-sp.)
C. Peers (3½ Lincoln-Elk)
N. G. Blackwell (6 Zenith)
Alec. Walsgrave (2¾ Hazlewood 3-sp.)
W. Sampson (3½ Alldays 2-sp.)
N. Alldays (3½ Alldays 2-sp.)
R. N. Corah (4¼ Corah 2-sp.)
R. E. Guest (6 Matchless sc.)
Roy Walker (3½ New Hudson)
C. Williams (2½ A.J.S. 2-sp.)
H. G. Allen (3½ Humber 2-sp.)
A. G. Fenn (2¾ Humber 3-sp.)
J. Slaughter (3½ L.M.C.)
J. Oliphant (3½ Premier 3-sp.)
H. A. Parrie (——)
R. G. Mundy (Singer)
—— (3½ Rudge)

PROHIBITION OF CUT-OUTS ON MOTOR CARS.

The Local Government Board have issued the new regulation with regard to the prohibition of cut-outs on motor cars which comes into force on March 31st next. The wording of the clause is as follows:

". . . shall not use any cut-out, fitting, or other apparatus or device which will allow the exhaust gases from the engine of the motor car to escape into the atmosphere without first passing through a silencer, expansion chamber, or other contrivance suitable and sufficient for reducing, as far as may reasonably be practicable, the noise which would otherwise be caused by the escape of the said gases. Provided that this regulation shall apply only to a motor car propelled by an internal combustion engine and shall not extend to a motor cycle."

As we have already pointed out, the regulation is really unnecessary, as a law is already in existence with regard to noise and the creation of a nuisance, and any motorist (whether autocarist or motor cyclist) can be summoned under this statute if by the use of a cut-out he cause annoyance to others which can be construed as a nuisance.

ENGLISH-DUTCH TRIAL.

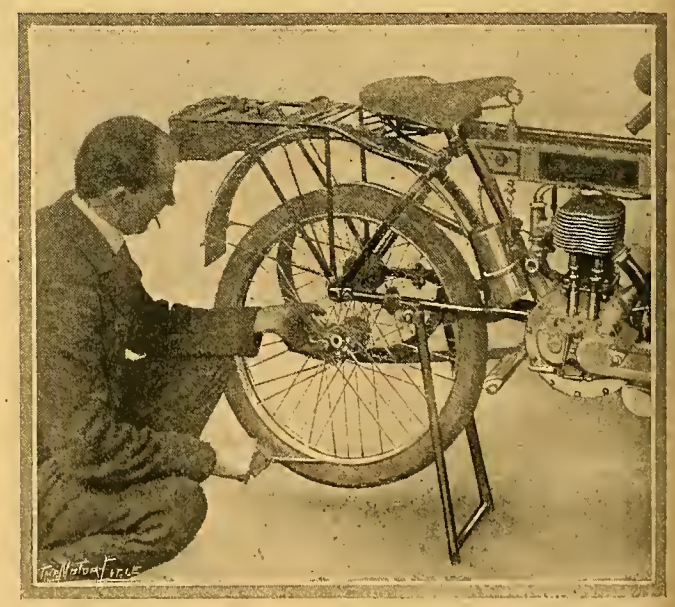
THE suggestion of Mr. W. Cooper that the British teams in the above International contest should be chosen by readers of *The Motor Cycle* is a good one, but, having considered the matter, we are opposed to the suggestion, as a referendum among so many thousands of readers entails an enormous amount of work, and we are not disposed to trespass on their good nature too frequently. Further, as readers have pointed out, it would favour men with a large circle of motoring friends.

We have recently had an interesting proposal placed before us by the governing body, the Auto Cycle Union, which is now under consideration, and an announcement may be expected shortly.

Criticising Mr. Palmer Scott's suggestion to choose machines in preference to men, Mr. W. Cooper says:

"Not only is it necessary for the riders to have excellent and up-to-date machines, but it is also most essential that each elected candidate should see that his mount is fully equipped with new (or good) tyres, belts, and especially belt fasteners. I remember failing myself in one of the A.C.U. quarterly trials owing to a broken fastener; and that is why I emphasise the fact that it behoves everyone to see that his machine is fully prepared."

F. C. Wasley, captain of the Bristol Motor Cycle Club, has decided upon a 2¾ h.p. two-speed Douglas, and will ride that mount, if chosen, in the amateur section.



J. McGhie Lamb's patent detachable wheel being fitted to a Bradbury. A detailed description will be found on page 180.

Streatham and District M.C.C. v. Surrey M.C.C.

The following, in addition to those published last week, have qualified for awards in the above inter-team and reliability trial held on the 3rd inst.:

SILVER MEDALS (Highest Award).

Streatham and District M.C.C.—V. Taylor (3½ h.p. Rudge), C. F. Malkin (T.T. Triumph), W. O. Oldman (8 h.p. Bat sc.), J. S. Flood (8 h.p. Chater-Lea sc.), R. G. Mundy (2½ h.p. Singer, three speeds), J. Bateson (3½ h.p. L.A.C.-Jap), and T. H. Kennington (2½ h.p. New Hudson).

Surrey M.C.C.—J. T. Wood (G.W.K. runabout).

BRONZE MEDAL.

Surrey Team.—J. Sparks (four-cylinder F.N.).

W. H. Davey (Streatham and District M.C.C., 3½ h.p. Bradbury sc.) will probably receive a silver medal.

First 1912 B.M.C.R.C. Meeting.

The first Members' Meeting of the B.M.C.R.C. is fixed for Saturday, March 23rd. The programme is as follows:

1 p.m. (For Classes A and B and all sidecar machines).

2 p.m. (For Classes C, D, and E).—The 100 Miles All-comers' Race. Competitors will be timed for 50 miles, 1 hour, and 100 miles.

4.15 p.m.—The New-comers' Race for runabouts and quad-cars not exceeding in weight 600 lbs. without driver and passenger. Distance, three laps, or about eight miles.

5.10 p.m.—The Three-lap Sidecar Scratch Race.

The race for runabouts should prove unusually interesting.

CLIMBING ARMS HILL.

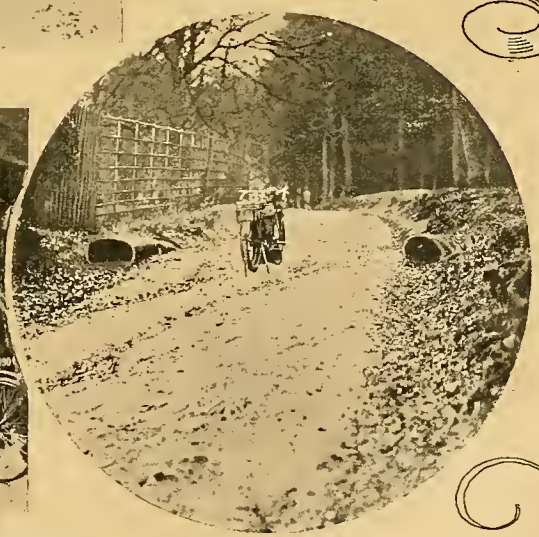
ON Monday, last week, in company with N. D. Slatter, I left town early in the afternoon *en route* for Arms Hill. Slatter's mount was his record-breaking 2 h.p. Alcyon, mine being a 2½ h.p. three-speed Singer. After several stops on the road we eventually arrived at the foot of the hill. It was now dusk and snow falling fairly heavily. After lowering gears, an ascent was attempted. The hill is really bad in more ways than one; not only is the gradient terrific, but the surface is very bumpy indeed. Several attempts were made, but as the darkness and snow were against us, we decided to stay the night at Henley-on-Thames. Next morning, the snow having stopped, we were early astir, and went straight out to the hill again. The snow was still fairly thick, but, notwithstanding this, the Alcyon got within twenty yards or so of the 1 in 3 portion, the Singer getting very nearly to the top of this pitch. N. D. Slatter states that he is convinced that he could climb the hill with a smaller pulley, and means to do so directly the road surface improves. The Singer would doubtless succeed on a dry surface.

I made further arrangements for a party to meet at Henley on the following Friday to have a try at this hill. The roads were in a wicked condition, and at the lower part of the hill a patch composed of wet clay had to be crossed, and then the steep pitch is reached. The surface at this point is composed of chalk, and is full of pot-holes. I tried several times on a T.T. Triumph, on each occasion stopping dead on the clay with the back wheel spinning round. Then J. S. Flood (3½ h.p. L.A.C.-Jap single-speed) and H. Garner (8 h.p. Zenith) arrived in company with a local resident on a 1912 clutch Triumph. Garner and Flood tried several times, but on each occasion with the same result as the T.T. Triumph before-mentioned. Garner then attempted an ascent with Flood on his carrier, but after skidding all over they road, they landed in the ditch with the machine on top of them. Darkness was now coming on, so we decided to return to Henley for tea.

On the following Sunday a party met outside the Shepherd's Bush Empire at ten o'clock, their intention being to try several unknown hills. W. L. T. Rhys arrived on his 8 h.p. Zenith, but as he suffered a puncture in his rear tyre he decided to accept W. H. Davey's offer of the seat in his sidecar. After passing over some miles of extremely bad by-roads, we eventually arrived at High Wycombe. About a quarter of a mile from the latter place we found Green Hill, a turning on our right-hand side. Hal Foote (8 h.p. o.h.v. T.T. Bat) made a splendid ascent at his first attempt. An ascent of equal merit was performed by C. W. Meredith (1910 two-speed Bradbury). O. K. Meredith (6 h.p. Zenith) and the writer (T.T. Triumph) failed at their first attempt, having taken the hill on the run without stopping to cool their engines. However, after descending, both came up well. W. H. Davey (two-speed Bradbury and sidecar) put up an excellent performance. He climbed most of the way on top speed. We then had a fine run to Arms Hill. Hal Foote, after only stopping for a minute or so, made a lightning ascent on his Bat geared 3½ to 1. The surface at the lower part of the hill was still in a very greasy condition, and the wet chalk on the 1 in 3 pitch was exceedingly treacherous. He, however, flew over this with his back wheel leaping about all over the road, to the astonishment of the assembled company. After failing twice, O. K. Meredith eventually reached the summit at a good speed, having dropped to a very low gear at the start. Then Hal Foote tried again, skidding very badly in the chalk at the bend; he recovered himself and successfully accomplished the ascent. The next attempt was made by the writer, who skidded and fell. F. A. Applebee (3¾ h.p. Scott) made numerous efforts, but even after wrapping wire rope round his rear wheel he still found an ascent impossible, his back wheel flying round in the chalk on the one in three gradient. The hill still awaits a conqueror on a 500 c.c. single geared single-cylinder.—R.G.M.







(1) A view from the top of Arms Hill. An article in this journal concerning the hill has led to several parties journeying over.
(2) The riders from left to right are J. S. Flood (3½ h.p. L.A.C.-Jap), A. Garner (8 h.p. Zenith), and R. G. Mundy (3½ h.p. Triumph).
(3) On the 1 in 3 portion.

CLUB NEWS.

Carlyle (Chelsea) C. and M.C.C.

The annual general meeting was held at headquarters on the 8th inst., Mr. J. M. Watson (president) occupying the chair. The following officers were elected for the motor cycle section: Captain, Mr. A. J. Brookes; vice-captain, Mr. F. Priston; secretary, Mr. C. W. H. Clark, 69, Comyn Road, New Wandsworth.

Gloucester M.C.C.

The first meeting of the newly formed Gloucester M.C.C. was held on the 31st ult., and forty motor cyclists in the district have signified their intention of joining. The headquarters will be at the Ram Hotel, Southgate Street, Gloucester. The president is the Rev. O. E. Hayden, and the hon. sec., Mr. F. C. Morgan, 156, Westgate Street.

Rotherham M.C.C.

At a meeting held on Friday, the 2nd inst., at Horsfalls Café, High Street, it was decided to form a motor cycle club. All interested are requested to attend a meeting at the above Café on Friday, February 23rd, at 8.30 p.m. Joint hon. secs. *pro tem.*, Messrs. H. Page, Fitzwilliam Road, and R. H. Gilling, College Street.

Bristol B. and M.C.

On Saturday next an inter-team trial (captain v. sub-captain) will be run over a fifty mile course starting from Westbury-on-Trym; marked course, secret check, and no speedometers. On Tuesday, the 20th inst., at headquarters, there will be a paper on "Modern Lightweights" with a junior T.T. Humber as a demonstration machine.

Western District M.C. (London).

A social evening will be held at headquarters, Paul's Restaurant, 4, New Broadway, Ealing, on February 21st, 1912, at 8 p.m., when the hon. secretary will give a lecture entitled "Switzerland and the High Alps," illustrated by lime light lantern views from his own photographs. The opening run will take place on March 3rd, members to meet by the horse trough on Ealing Common at 10.30 a.m. The destination is Wisley Hut, Surrey.

Cardiff M.C.

The members met at the Whitehall Rooms, Cardiff, on Wednesday, the 7th inst., for their annual whist drive and dance. The attendance this year was not quite so good as last year, owing to clashing of dates with other social functions, but nevertheless those present (about 110) had a most enjoyable time. Dancing took place in the Ball Room, whilst the whist drive was held (concurrently) in the Lounge. The prizewinners were: Ladies—1, Mrs. Bishop; 2, Mrs. J. C. Moore; 3, Miss E. Parry. Gentlemen—1, J. A. Dunlop; 2, W. H. Bowen; 3, C. R. M. Peaby.

Hull and East Riding A.C.C.

The annual smoker and prize distribution was held at the Grosvenor Hotel on Friday, the 2nd inst., Dr. W. H. Coates presiding. An excellent musical programme was gone through, and the large number of members and friends thoroughly appreciated the various items. The prizes awarded exceeded £40 in value.

The annual general meeting took place on Tuesday, the 6th inst., when the following officials were elected: Dr. W. H. Coates, president; Mr. Dick Ellis, captain; Mr. J. L. E. Emerson, vice-captain; Mr. A. E. Tuton, treasurer; Mr. J. Fletcher Walton, secretary; Mr. T. R. Langton, trials secretary.

Glasgow M.C.C.

The Glasgow club had its second annual dinner last Thursday at the Corn Exchange Restaurant, when about 100 members and friends spent a most enjoyable evening. The chair was taken by the club's president, Mr. John Gow, who, in replying to Mr. Chas. Middleton's toast of the club, gave a *résumé* of last season's doings, and mentioned that the membership had in a single year increased from 57 to 120. Mr. Norman Macmillan, president of the Edinburgh club, in replying for the guests, asked for a revival of the former inter-club trials and hoped the two clubs would see more of each other in the future. Several speakers referred to the disappointment of Scottish riders and triders in the failure to obtain a motor cycle section at the recent motor show.

North Birmingham M.C.

A meeting will be held at the Acorn Hotel, High Street, Erdington, on Tuesday evening, the 20th inst., to consider the formation of a club for North Birmingham.

Bristol M.C.C.

Mr. A. E. Bennett, of the Bosch Magneto Co., will lecture on Wednesday, the 21st inst., at the B.M.C.C.'s headquarters, Queen's Hotel, Clifton, at 8 p.m. sharp.

Haverstock M.C.C.

The first supper was held at headquarters, the Abbey Tavern, Kentish Town Road, on Thursday, February 8th. The chair was ably taken by the president, Dr. Gibbons, and the members spent a most enjoyable evening. Great thanks are due to Messrs. Richards and Roberts for the splendid way in which they superintended the musical part of the programme. The secretary, Mr. Moliver, 81, Prince of Wales Road, N.W., will be glad to hear from any gentlemen wishing to join the club. The first run will take place on the 25th inst. to Markyate, Herts.

Pontefract M.C.

The annual general meeting was held at headquarters on Wednesday, the 31st ult. There was a good attendance of members. The treasurer presented the financial statement showing a balance in hand of £15 15s. 6d. Among the officers elected were: Col J. R. Shaw, president; Dr. E. M. Dolan, captain and trials secretary; Mr. H. Holmes, treasurer; and Mr. E. E. Vaux, secretary, in succession to Mr. W. Bentley (resigned), who has been secretary since the formation of the club, and who has done much in helping to put the club on its present sound basis.

Cambridgeshire M.C.C.

The annual general meeting was held on Wednesday, the 7th inst., at headquarters. The secretary and treasurer's reports showed that the club is numerically and financially in an excellent condition. Officers elected were: President, Councillor G. O. Palmer; vice-presidents, Ald. F. Morley, Dr. Selby Clare, and Mr. W. King; captain, Mr. H. S. Wallis; sub-captain, Mr. C. W. Wilson; treasurer, Mr. A. B. Hurry; hon. secretary, Mr. W. J Field, 61, Tenison Road, Cambridge.

Sheffield and Hallamshire M.C.C.

The annual general meeting was held at headquarters on Thursday, the 8th inst., with the president, Mr. F. Dover, in the chair. Fifty-three members were present. The balance sheet showed a balance in hand of £6 with stock of the value of £24, and outstanding assets of £4 3s. 6d., whilst the liabilities were nil. The club has affiliated to the A.A. and M.U. The following officers were elected: President, Mr. H. Beshey; vice-presidents, Messrs. Durant, Ardern, Stacey, and Kay; treasurer, Mr. W. Hill; secretary, Mr. D. Bradbury; captain, Mr. C. Bellamy; vice-captain, Mr. F. Cawood.



A photograph sent to us by W. Pratt (the left-hand figure of the three in the foreground), who is enjoying the winter games in Switzerland. He has given up motor cycling for a time in favour of ski-ing. A motor cycle would be of little use in three feet of snow. The children in the background are lining up for a ski race.

Club News.—

Haslingden M.C.C.

A meeting will be held this evening at the Commercial Hotel, Haslingden, with the object of forming a motor cycle club for that district.

Nelson and District M.C.

A general meeting of members and all interested in motoring will be held on Tuesday, February 20th, at the Bull Hotel, Nelson, at 7.30 p.m.

A New Club for Dublin.

It is proposed to form a motor cycle club in connection with Trinity College, Dublin. A good number of motor cycles are now owned by the University men.

Herefordshire M.C.C.

A smoking concert will be held at headquarters, the Mitre Hotel, Hereford, on Thursday, the 22nd inst., at 7.30 p.m. All motor cyclists in the district are cordially invited.

Herts County A.C.

The Motor Cycle Section has had a most successful year. The club has been ably represented in the various open competitions. An excellent 1912 programme has been arranged.

Coventry and Warwickshire M.C.

Some of the forthcoming events are as follows: March 13th—Opening run and speed-judging competition. April 13th—Sidecar trial for machines under 500 c.c. May 4th—Motor cycle reliability trial (open). June 15th—M.C.C. team trial for *The Motor Cycle* Cup. A reconnaissance with boy scouts as the enemy will also be held some time in May.

Mersey M.C.

A lecture will be given on "Speed and Power," illustrated by slides, this evening, at seven o'clock, at club headquarters, by Mr. W. G. McMinnies, all motorists will be welcomed. The club has now extended its operations so as to cater for Southport, and members are being enrolled belonging to that town.

Walthamstow M.C.

The farewell supper to Mr. Fairchild and social evening held at the Essex Brewery Hotel on the 1st inst. was a great success, 102 members and friends sitting down to an excellent repast. Mr. Percival, hon. secretary, reported the club membership as now standing at seventy, and said he hoped to be able to make it 100 this season.

Essex M.C.

The annual general meeting took place on Thursday, the 1st inst., and the following officers were elected:

President, Mr. S. G. Cummings; vice-presidents, Messrs O. L. Summers, A. G. Reynolds, and Stenson Cooke; hon. secretary, Mr. D. S. Kapadia; hon. treasurer, Mr. E. G. Bass; captain, Mr. A. P. Howard; vice-captain, Mr. A. E. Brassington; technical adviser, Mr. A. E. Lowe.

Great enthusiasm was shown at the meeting, and there is every probability of a most prosperous year for the club. Motor cyclists and motorists who care to join should write to Mr. D. S. Kapadia, The Grange, Aldboro' Hatch, near Ilford, Essex.

The open hill-climb will take place on March 16th. There will be open classes for all standard types of motor cycles, and members' classes for runabouts and quadcars.

ESSEX M.C. ANNUAL DINNER.

IT was just a nice little family gathering that assembled at the Abercorn Rooms of the Great Eastern Hotel on Saturday last to celebrate the sixth annual dinner of the Essex Motor Club; at least, that is what the chairman, Mr. Stenson Cooke, called it.

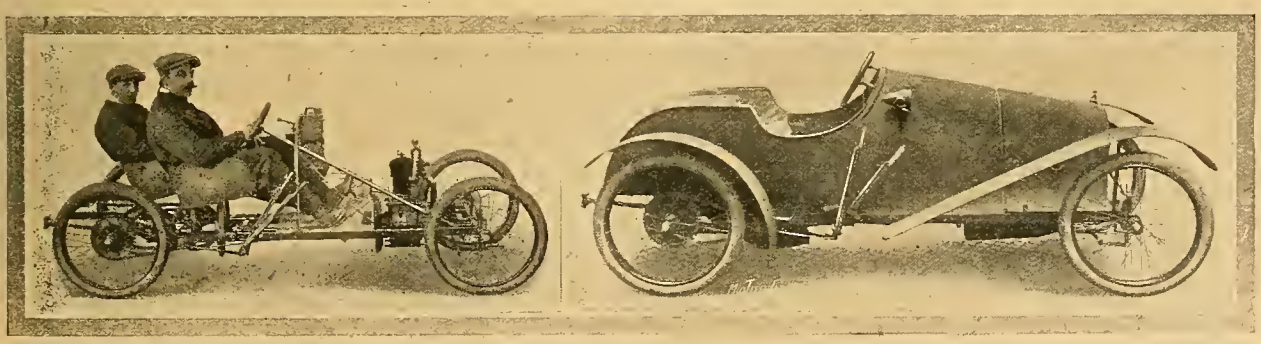
In proposing the health of "The Essex Motor Club," Mr. Stenson Cooke made a delightfully frank retraction of an opinion that some three or four years ago he had expressed to the effect that local and county clubs would in the long run fail to justify their existence and die out. In the face of such healthy development as was exhibited by such bodies as the Essex Club he unqualifiedly withdrew his words. In outlining the very strong and ambitious programme for the coming season, Mr. Stenson Cooke laid particular stress on the club's hill-climb to take place on March 16th next. The speaker was glad to add that at this event their friend Mr. Selfe had very kindly promised to help. The chairman then went on to pay a well-deserved tribute to the services that had been rendered to the club by such gentlemen as Mr. George Reynolds, Mr. G. F. Smith, Mr. Owen Summers, Mr. D. S. Kapadia (the secretary), and Mr. Buller.

Mr. G. F. Smith, in replying, made particular reference to the motor outing for crippled children, an event arranged through the good offices of the Essex Motor Club in connection with the Ragged School Union, and one which, to judge by the references of Mr. Smith and other speakers, the Essex Club has particularly at heart, and which the chairman had done much—in fact, almost everything—to render possible. Mr. George Reynolds also responded, and paid a grateful tribute to the assistance the club had received from outside sources, making particular mention of the A.C.U. in this connection.

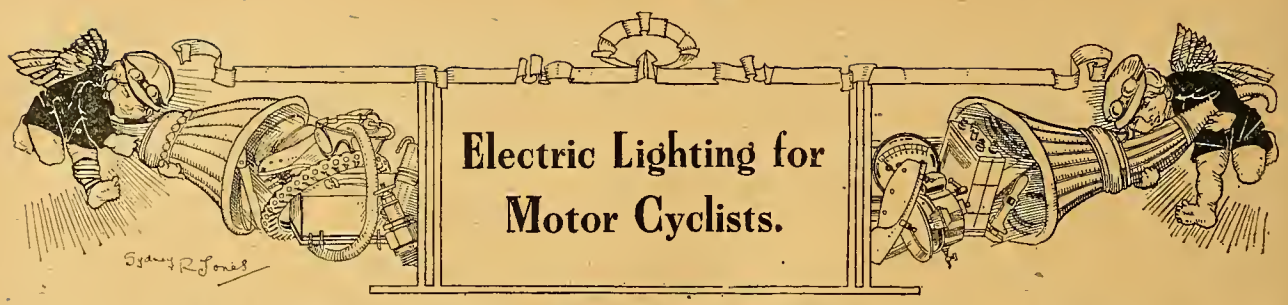
After the prizes won in the competitions of the past season had been given away by Mrs. Stenson Cooke, the health of "The Visitors, Ladies, and Press" was proposed by the president, Mr. S. G. Cummings, who went straight to the point by saying that they looked to the visitors to increase the membership of the club, to the ladies to encourage it by their presence at its meetings, and to the Press to enhance the work of the club by publicity.

In an amusing and witty speech Mr. Leechman replied for the guests and ladies, while Mr. Meyrick-Jones responded for the Press.

Mr. O. L. Summers then proposed the health of "The Chairman," and referred to Mr. Stenson Cooke's perennial youth, for though he had founded and was conducting an important organisation with a membership of 40,000, he appeared "always merry and bright," and as little worried as a boy—he had almost said "boy scout." Before concluding, Mr. Summers eloquently expressed the gratitude of the club to Mrs. Stenson Cooke for her presence that evening to distribute the prizes, and after the health of the Chairman and Mrs. Stenson Cooke had been enthusiastically celebrated, the Chairman expressed his thanks in an admirable speech of response. Thus ended an evening that will long remain a pleasant recollection.



The latest French production "The Baby" quadcar. This little vehicle has an air-cooled single cylinder engine, propeller shaft drive to a friction-driven countershaft thence by chain to one rear wheel. The driver sits slightly in front of the passenger which reduces the overall width of the body.



Electric Lighting for Motor Cyclists.

NOW that dynamo electric lighting installations have become practically a standard factor in the equipment of the higher grade motor cars it is natural enough to find that those who cater for the smaller wants of motor cyclists are turning their attention to this aspect of the lighting question. The design of a suitable electric generator for motor cycle use is certainly a much more difficult problem than that which confronts him who is making one for use on a car, for, in the first place, not only is space extremely limited, but there is no place in which the dynamo can very easily be installed, also if the article is to have any public demand it must be produced at a comparatively low price. Year by year, head lamps of whatever kind are made of increasing power because motor cyclists wisely insist that it is impossible to have too much light. It may be said, therefore, that the motor cyclist demands almost as much light as the user of a small car.

Prime Cost.

Now, a complete dynamo electric lighting installation for car use costs between £40 and £60, and it is fairly obvious therefore, that some very clever designing has got to be done to bring the motor cycle outfit down to a reasonable figure. A word or two on this very question of cost may not be out of place.

First of all it should be realised that although the prime cost of an electric lighting outfit may be much higher than a similar set using acetylene, with electricity, once the device has been installed; there is practically no further outlay to be considered. I imagine that the average motor cyclist, who covers, let us say, about five thousand miles in a year, probably expends about 10s. in carbide throughout that time. His initial outlay on the lamp and generator would be, probably, about 50s. If then a complete electric installation can be produced at an inclusive price of £4 it will bear close comparison with the acetylene outfit specified above, for, on the allowance of carbide assumed, it will pay for itself in three years, and at the end of that time it is highly probable that it will be worth more than the acetylene head lamp and generator. At the same time it must not be forgotten that with an electric system one achieves a great saving in time, trouble, and convenience, provided that the mechanism be properly designed and satisfactory.

Freedom from Trouble.

First of all, it should require no attention from one year's end to another beyond an occasional spot of oil on the bearings, it is always ready for use, it requires neither matches to light nor fuel for replenishment. It is practically automatic in action, and all the rider has to do is to operate the switch as circumstances dictate. The above facts are given on the assumption that the amount of light given by both systems is about the same. So far, however, only one electric lighting installation has been placed upon the market which gives an illumination comparable to that of a full-sized motor cycle acetylene head lamp. The other two, whilst they do for their size yield a tolerable amount of light, cannot be said to come up to the present head light standards as provided by gas illumination.

Before proceeding to a description of the outfits which are upon the market at the present time, it may not be out of place to suggest an ideal installation; and something fairly close to this the near future will probably bring forward. The difficulties in the way of its realisation, if any, are not insuperable, the only one of any moment being, as pointed out above, the question of production at a reasonable price. The dynamo of the ideal system will probably be incorporated in the ordinary high tension magneto, so that its installation will practically make no increase in the number of working parts.

A Suggested Compound Magneto and Dynamo.

Having passed through prolonged and searching tests, a compound ignition magneto and lighting dynamo on these lines is being placed upon the market for car use; hence there is no reason whatever why it should not be adopted on motor cycles. The ordinary permanent magnets are considerably increased in number as well as in size, and enclose two separate armatures, one of which is wound with a secondary winding in order to give a high tension current for ignition, whilst the other (the two armatures are placed one above the other) is wound to give a continuous low tension current for lighting purposes.

The compound machine is, of course, rather larger than the ordinary magneto, but, so far as motor cycles are concerned, if provision were made for its reception by motor cycle engine designers, any difficulty arising from this source would speedily disappear. The storage battery, which need not, however, be of

THE POLKEY-JARROTT ELECTRIC LIGHTING SYSTEM.

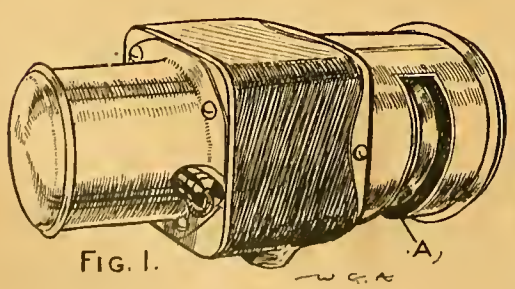


Fig. 1.—The dynamo. A, slot for belt

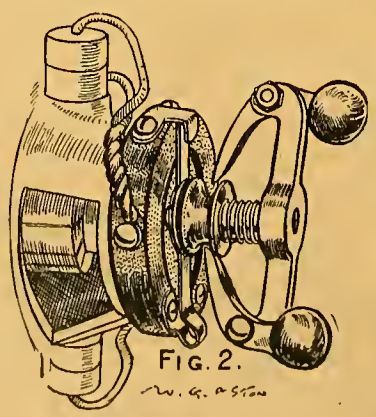


Fig. 2.—Automatic switch.

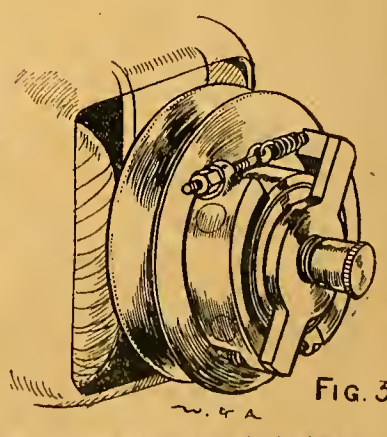


Fig. 3.—Driving pulley of the lighting dynamo connected to the armature-shaft by brake blocks which form governors.

Electric Lighting for Motor Cyclists.—any great size or weight, is desirable, both on practical and theoretical grounds, as, although simplicity may be gained by doing without it, it is almost essential that a light should be available whilst the machine is standing still. At the same time, it is by no means necessary that when so stationary the head lamp should be giving its full power, and it is, therefore, more than probable that the future lamp bulb will be provided with some means by which the light can be turned down. There are three ways of accomplishing this end. First, by using both cells of the battery in series for running and in parallel for standing still; second, by using a special switch, which cuts a resistance into circuit; and third, by having a lamp, which contains in a single bulb two different filaments, one of which is made to give very little light and to absorb very little current. Some such means of turning down the light are highly necessary in a motor cycle installation, because the use of a large battery is out of the question; and if the small one is to have any reasonable life, it is essential to prevent it from discharging too heavily.

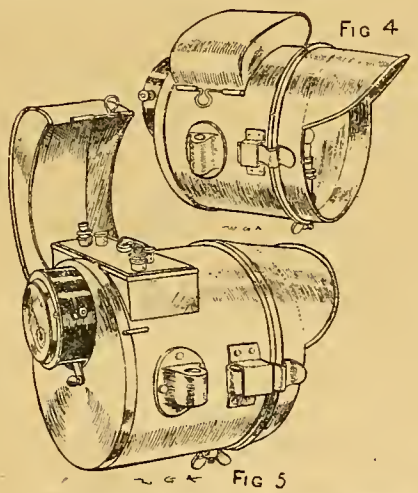
Dynamo and Battery for Ignition and Lighting.

Although the combined magneto and lighting dynamo has been suggested as the ideal system, it is only fair to say that there is another which is almost equally ideal, and which stands just as good a chance—if not a better—of coming into vogue. The alternative is to discard the magneto altogether, and put in its place an ordinary dynamo which charges a battery that supplies not only the lamps but the ignition current as well. On the face of it, most motor cyclists would rather deprecate this idea, for they have had in the past a bitter experience of coil and accumulator ignition; but if they would bear in mind the fact that the principal cause of this trouble was the difficulty and nuisance of keeping accumulators sufficiently charged, they would realise that there is much to be said for a syste which essentially overcomes this difficulty and provides them with the means of obtaining an efficient spark quite irrespective of the speed of the engine. Which type will eventually survive would seem to depend largely upon the developments which will in the meantime have been made in magnetos themselves.

The Polkey-Jarrott System.

This installation is practically a miniature reproduction of the Polkey-Jarrott car lighting equipment, and consists of a dynamo and a head lamp containing an accumulator, a switch, and an ammeter. It is, as will be seen, quite the most complete system that has appeared so far, though it is only fair to point out that its cost is considerably greater than that of one or two others.

First of all, with regard to the dynamo. This is intended to be clamped upon the chain stays immediately behind the bottom bracket of the frame, and in that position to be driven from the engine by a belt passing over a special pulley fixed outside the ordinary driving belt pulley. Practically the whole of the dynamo is enclosed, with the exception of a slot cut in one of the end castings to allow the passage of the driving belt. Fig. 1 shows the external appearance of the Polkey dynamo, which is primarily one of the ordinary commercial type with drum wound armature and bi-polar electro magnets. As is well known, the output of such a dynamo is directly proportionate to its speed, and as it is used always to charge a storage battery special means have to be taken, first, to prevent the voltage rising sufficiently high to damage the battery, and, secondly, to prevent the battery discharging itself through the dynamo when the latter is being driven at an insufficient speed to give an output, the potential of which is greater than the battery. In other words, the battery is one of four volts, and hence until the dynamo produces current at this pressure no connection between battery and dynamo must be made, otherwise the current will simply flow from the former to the latter. The devices by which these two things are achieved are entirely mechanical, and work upon a very simple and well-known principle.



Figs. 4 and 5.—Polkey head light with accumulator battery behind mirror and ammeter and switch at back of lamp. In fig. 4 the battery is hidden by the cowl which is shown open in fig. 5.

The minimum cut-out—that is to say, the automatic switch which throws the dynamo into circuit with the battery as soon as its output is sufficient—is shown in fig. 2. Mounted at the non-driving end of the armature spindle are a pair of governor balls supported on bell crank levers. The ends of these levers engage in a grooved reel, which is normally held in position by a helical spring, so that it holds apart the two brass plates which constitute a switch between the dynamo and the battery. When the governor balls fly out at a predetermined speed, the switch is closed, and accordingly the dynamo commences to charge the battery. Below this speed the switch is open, and no passage of current takes place.

Method of Driving Armature-shaft.

The ingenious device by which the predetermined pressure of current generated is entirely prevented from being exceeded is sketched in fig. 3. The driving pulley, instead of being made fast to the armature-shaft, runs loose upon it, and drives it through the medium of a couple of fibre-lined brake shoes, which are anchored on a cross head, this last being permanently fixed to the armature-shaft. As can be seen from the sketch, the two brake blocks form in themselves centrifugal governors, and are held in contact with a drum, which is made one with the pulley by means of adjustable springs. When a certain predetermined speed of armature revolution has been reached, centrifugal force causes the brake shoes to fly outwards, and in doing so they, of course, allow the pulley to slip on the armature-shaft. However much the speed of the pulley be increased beyond this limit, that of the armature remains constant, and hence over-charging of the battery is prevented.

It might be thought that this device would make the armature drive intermittent, but in practice it is found that the alternation between slip and grip of the brake shoes is so rapid that the rotation of the armature remains always absolutely uniform.

Lamp and Battery One Unit.

Figs. 4 and 5 give two views of the Polkey electric head light for use with this set. As will be seen, it is of pleasing and workmanlike appearance, and it must certainly be admitted that it is arranged most ingeniously. In front is a silver-plated parabolic mirror. The glow lamp gives 4 c.p. at a pressure of four volts, and is fixed in an adjustable adapter, so that it can be slightly lifted or lowered, as well as fixed axially, with the mirror. Behind the mirror is a metal compartment containing a four-volt accumulator of twelve ampère hours capacity. The sides of the battery chamber are provided with spring blades, which hold the accumulator firmly in position. The whole is neatly hidden in a quickly detachable cowl.

The Functions of the Switch.

On the back of the lamp is an ampère meter in which is also contained a switch. This ampère meter, when thrown into circuit, indicates the rate at which the dynamo is charging the battery. The switch, which is clearly shown in fig 5, gives three positions. First, it switches the battery into circuit with the lamp, and this is, of course, the ordinary normal position at night; second, it throws the lamp out of action; and third position disconnects the dynamo entirely from the battery so that the latter cannot possibly be overcharged. At the same time the winding of the field magnet is cut out of circuit, so that the dynamo produces no current no matter at what speed it be driven, and, of course, in these circumstances, it takes a quite negligible amount of power to drive it. Even when generating, however, the power absorbed is so slight that it would scarcely make a difference to the running of a lightweight machine, and there is, of course, no necessity to fit the driving belt until the light is wanted, or the battery partly discharged.

The arrangement of the head light is an extremely happy one, as everything is actually under the rider's eye as well as within reach.

The makers of this equipment are the Polkey-Jarrot Electric Equipments Co., Pittsford Street, Birmingham.

(To be concluded next week.)

LEICESTER MOTOR CYCLE SHOW.

MODELS for 1912 of most makes were on view at Leicester on Wednesday last, which day marked the opening of the third annual show in the Y.M.C.A. Buildings.

W. J. Glover and Co., Ltd., had a large and well-staged exhibit, which included Singer, Rex, Rex-Jap, A.S.L., and Bradbury models, and a good show of useful accessories. Among other things they showed us a serviceable waterproof coat which can be worn as an ordinary walking coat or buttoned between the legs, thus forming overalls for motor cycle use.



P llion seat shown by Glover Bros.

All the 1912 Premier models were being shown by H. Jenkins, of Aylestone Road.

Paskells and Keeys were exhibiting Zenith, Douglas, Macbeth, Matchless, and New Hudson models, and were expecting a Clyno at any moment. They also had a nice-looking coach-built sidecar of their own manufacture.

Besides a good show of accessories, T. H. Wathes and Co. had on view a 3½ h.p. Wivern-Precision fitted with the College mud screen, which consists of a neat leather guard extending downwards from the top tube to below the crank case and strapped on to the bottom bracket.

Triumph machines were on view on the stand of C. Williams, of the Y.M.C.A. Buildings.

The Campion Cycle Co. Depot had a good display of their models, fitted with J.A.P. and Peugeot engines and Roc two-speed and Villiers free engine hub.

W. H. Chapman exhibited A.J.S. models and an Ivy-Precision fitted with a D.H.K. hub clutch.

Clyde models and a Rollo car were to be seen on Wait and Co.'s stand.

Two tyre firms were exhibiting in the main hall, namely, the Leicester Rubber Co., who were showing the John Bull tyre and a good selection of rubber accessories, and T. Cann, who, besides showing his method of cover repairing by sewing in new pieces, staged a fine display of tyres and 1912 models of the Trump-Jap, Levis, Motosacoche, and Rudge motor cycles.

In the gymnasium Lester and Follweli showed the new B.S.A. models and an A.C. chassis.

The Ebo motor cycles formed a new exhibit. They are on standard lines and fitted with Precision engines. One of those on view had a P. and M. gear. We are informed that the firm will shortly market a two-speed gear of their own design and construction.

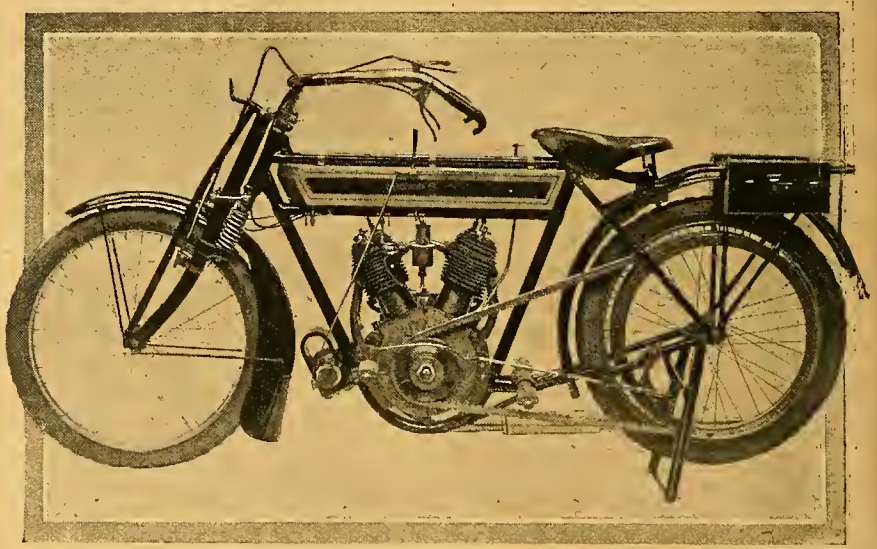
Lucas Bros. showed a large selection of accessories.

Humber models were shown by G. Main and Co.

New Hadleys, Ltd., showed a 2½ h.p. Hobart, and were expecting a L.M.C.

The Quorn Motor Garage staged a 7 h.p two-speed Indian, and Clarke Bros. had a complete range of Pythian-Precision motor cycles, to one of which was attached a Morrison spring wheel sidecar.

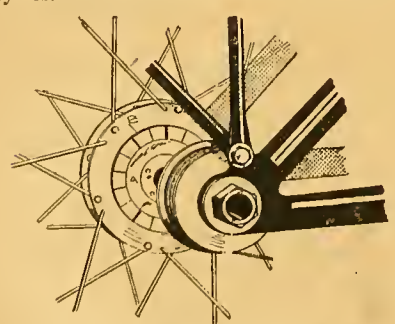
On the opening day it was too early to say what the public attendance would be like, but the show was successful and well arranged.



The twin-cylinder loop-frame Clyde-Jap exhibited at the Leicester motor cycle show.

A DETACHABLE WHEEL FOR MOTOR CYCLES.

A few days ago we had the opportunity of examining an extremely ingenious detachable wheel suitable for motor cycles.



Sketch showing arrangement of Lamb's detachable wheel.

The inventor, Mr. J. McGhie Lamb, of Chatham House, Kirkby Park, Kirkby, Lancashire, showed us the device fitted to a standard Bradbury machine.

To prove the case of detachment, we may say that we timed Mr. Lamb to detach the rear wheel in under ten seconds, and the front in about seven seconds, and this was accomplished with the aid of one spanner only.

The construction is as follows, and may be easily followed by referring to the accompanying sketch, which shows the forks with the wheel removed. To each fork is rigidly bolted a small hub running on ball bearings. Attached to the off side hub is the chain wheel or brake drum, and to that on the near side the chain wheel or belt rim. (The sketch shows the small hubs, screwed to take chain wheel or brake drum, and spokes for belt rim.)

The tyre rim is carried on a third and central hub which lies between the two small hubs, and is held in position by a bolt which passes through all three hubs. This bolt does not carry the weight, but pulls the outer hubs together, thus giving a frictional support between the face A and corresponding faces on the other hubs. The drive is transmitted to the wheel by means of the dogs B, and thence to the brake drum or pedalling chain hub by similar means.

All that is necessary to detach the wheel is to remove the central bolt, upon which the wheel falls out, leaving the transmission and brake gear untouched. The hubs are so constructed as to be suitable for either front wheel, rear wheel, or sidecar wheel, so that in case of tyre trouble with a passenger machine it matters not in which tyre the trouble lies, for it can be replaced by the spare wheel in a minute or two.

We may add that this wheel has passed the experimental stage, and has undergone long road tests with satisfactory results. It should be particularly suitable for owners of certain chain-driven motor cycles whose rear wheels are not particularly accessible.

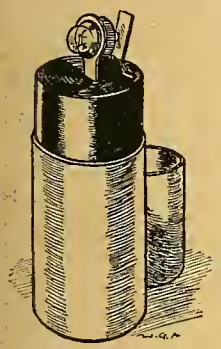
Harry Long's Projected Ride.

Mr. Harry Long called on us last Monday and informed us that he would be starting on a long distance ride late in March or early in April, and intended to ride a 4 h.p. Singer two-speed motor cycle and Millford rigid sidecar. His daughter, who weighs nine stones, will accompany him, as the idea of the ride is partly to demonstrate that a sidecar is suitable for an all-weather vehicle for ladies' use. In addition to the coast ride Mr. Long intends to visit every town in Great Britain, and contemplates covering 20,000 miles in six months.



A Miniature Inspection Lamp.

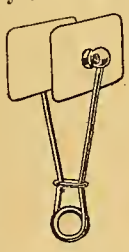
Quite a useful little electric lamp for inspection purposes or for repairs has lately been produced by Messrs. Leo. Ripault and Co., 64a, Poland Street, Oxford Street, W. The lamp is not a toy, as it is provided with a dry battery of considerable capacity. It measures in its case about 5¼in., and will go comfortably into a tool bag. The capacity of the battery is twenty hours continuous working; twenty-five hours if used intermittently. The price of a refill is extremely moderate. A rubber clip is supplied to fasten over the brass contact piece, so that there is no danger of the lamp being lighted accidentally. A permanent light may be obtained by bending the brass strip so that it makes contact with the lamp.



Ripault inspection lamp

Patch Fixer.

A new accessory which is certain to be welcomed by motor cyclists has been introduced by the Dunlop Tyre Co. in the shape of a patch fixer for motor cycle tyres. The function of this tool, which can be carried conveniently in the wallet, is to do away with the rolling on of a patch, and to this end the patched part of the tube is gripped between two plates, pressure being applied by forcing a ring along the arms to which the plates are attached. By this simple operation all air is forced out from under the patch, thereby making a perfect joint when the solution has dried. The fixer will undoubtedly facilitate tyre repair, and help materially to give permanence to the patch.



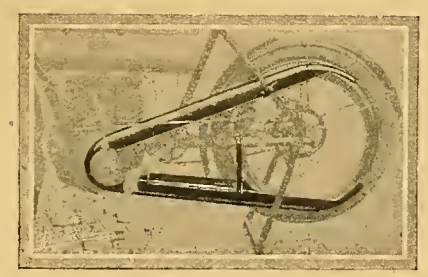
The J.P. Tyre and Belt.

Messrs. John Piggott, Ltd., 117, Cheapside, E.C., have sent us a new pattern of motor cycle tyre for trial. This tyre has a distinctive tread, consisting of hard red rubber. The pattern consists of a single rib down the centre, with a single row of large studs on each side. The cover is constructed on the same lines as a motor car cover, and is built up of three plies of canvas. It is interesting to note that all covers sold by Messrs. Piggott are guaranteed for 3,000 miles. We are shortly putting this cover to a riding test.

Another novelty introduced by the same firm is the J.P. Red Curve belt. This belt is of the rubber and canvas type, with the top made of red rubber. The chief point about it is that it is moulded in a curve, so that it is claimed it fits easily round the pulley, and there is less likelihood of it cracking.

Winter Mudguarding.

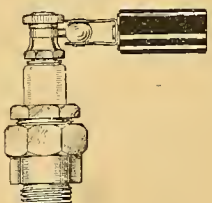
Messrs. Grant and Co., 3, Brewers Green, Victoria Street, Buckingham Gate, S.W., have sent us a photograph and model of the G. and G. belt shield. We reproduce the photograph herewith, which is practically self-explanatory. The belt shield is made out of light sheet metal and in the form of the letter U. On the bottom half the U-shaped trough is covered in, the cover being made detachable so that it can be slid on and off for ease of attaching or removing belt. The makers inform us that in the case of belt breakage the belt disengages itself, although the bottom half is running in a tunnel. The shields are made in standard sizes, and are easily fitted.



The G. & G. belt shield.

New Sparking Plug.

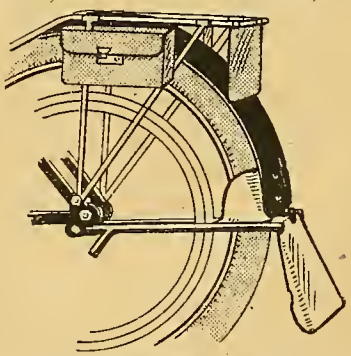
A new plug has lately been placed on the market called the "Re. V.," sold by the Re. V. Sparking Plug Co., 64a, Poland Street, Oxford Street, W. The insulating material is the best French porcelain, and the electrodes are pure nickel. Two qualities are made, one specially for magneto ignition and the other slightly cheaper. The magneto plug has a central electrode and two points from the plug body. In conjunction with this plug a neat form of terminal is sold, consisting of a ball screwed on to the terminal of the plug and a vulcanite terminal, to which the high tension wire is attached. The end of the terminal consists of a spring-steel fork, which is flattened and drilled at the ends. This fork makes firm contact with the ball in whatever position the high tension wire may be.



Re. V. plug and spring terminal.

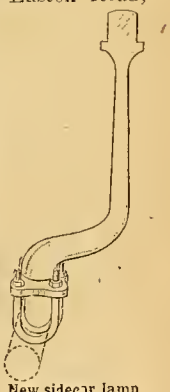
Back Wheel Mud Flap.

The accompanying sketch shows a mud flap which also acts as a thorn catcher fitted to a B.S.A. It is attached to the stand and hinged so that it may be turned up when the stand is in use. The patentee, Mr. W. R. Blackshaw, Congleton Road, Macclesfield, has, he informs us, tried the device on his own machine with great success. It should certainly prevent the mud from the back being thrown about the machine.

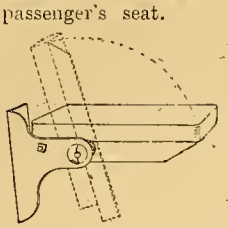


Sidecar Fittings.

Mr. A. W. Bond, 245, Euston Road, N.W., has just introduced a very serviceable sidecar lamp bracket. The bracket is made from an annealed steel casting, finished black enamel, and is provided with a large clip, which surrounds the outer longitudinal member of the sidecar frame, and also one of the flat springs, thus forming an exceptionally rigid fixing, which should carry the heaviest motor cycle lamp. The lamp, when in position, is just forward of the wheel guard, and about on a line with the passenger's seat.



New sidecar lamp bracket.



A child's sidecar seat is made by Mr. E. Farrar, of Halifax. When not in use it springs up into the position indicated by the dotted lines.

A Few Points on Motor Cycle Insurance.

By DOUGLAS LEECHMAN, Barrister-at-Law.

MOTOR cyclists as a body are not as ready to insure as they ought to be. They are too much inclined to take the risks themselves. But this is not a wise course. Not only should they insure, but they should insure their machines before they are delivered. For who can tell? They may have a flare-up the very first time they try to start, and then where will they be?

In proceeding to insure, there is a good deal to be said in favour of carrying out the business through one of the brokers who make a speciality of motor cycle work. They are able to advise the rider as to the companies whose policies are best adapted to his particular case, and as to what stipulations he should make. Further, they are often of assistance in getting claims settled promptly.

In any case, the motor cyclist should obtain copies of the policies issued, as well as of the proposal forms, as then he can see pretty clearly what he is offered for his money. On the back of the policy he will find a number of "conditions," and these should be carefully studied, as by legal interpretation a condition goes to the essence of a contract.

The first condition is as to the notice to be given to the company in case of an accident. Notice should not be required to be given within a specified time, such as forty-eight hours, but only as soon as reasonably possible.

Other conditions may release the company from its liability while the machine is outside the United Kingdom, while it is on hire or being used in speed competitions or pace-making, or by any person who is unlicensed or incompetent. Incompetence is largely a matter of opinion and comparison, and where this restriction is sought to be imposed, the insured would do well to give the company such evidence as they may require of his competence and get "competence admitted" endorsed on his policy.

The condition should not extend to such contests as reliability, speed judging, or consumption trials; though the inclusion of racing and perhaps experimenting and tuition can hardly be objected to as disqualifications. A condition that the injury shall not be increased as by riding the machine in its damaged state after an accident is reasonable.

A more general restriction is that the company shall not be liable when the insured admits to a third party that damage done to the latter was due to his, the insured's, fault. This is reasonable, and it is a matter for thanks that the companies do not always stand by it strictly. On the other hand, care should be taken not to accept a condition of this kind where it is of a sweepingly general nature.

A condition that the machine shall be kept in good repair, and that the insured shall take all due and reasonable precaution to safeguard the machine, is good, as it promotes the mutuality of interests of the insurer and the insured.

Other conditions stipulate that the company shall not pay more than a proportion where the insured has taken out several policies covering the same risks in respect of the same machine; and that the company shall have the right to cancel the policy on notice and return a proportion of the premium. This last would seldom be exercised except where the company suspected they were being "exploited."

Possible Disputes.

Some of the insurance companies connected with motoring associations suggest more or less urgently that any disputes which may arise between the insurer and the insured should be dealt with by a committee appointed by the association from its members. This is excellent so far as the reference of the trouble to a body familiar with motor cycling is concerned. But there the excellence ends. I do not for one moment question the absolute honesty of purpose of such a body, either individually or collectively, but human nature being what it is, a sub-conscious partiality can hardly be absent. Such a committee is hardly likely to have the legal training necessary to the proper handling of evidence, and it also possesses the disadvantage of plurality. This last is an objection to the last condition in some policies which, in requiring that disputes shall be referred to arbitration under the Arbitration Act, also stipulate in effect that there shall be two arbitrators and an umpire. This only leads to unnecessary complication and expense. A single independent arbitrator is all that is required, and he gets through the work with a minimum of delay and expense.

Proposal Forms.

When it has been decided which company shall be selected, the proposal form must be filled in with great care and perfect good faith, as any material misstatement therein will entitle the company to repudiate its responsibility should a claim be made against it. In this connection, I think it is a pity that some of the proposal forms issued are of such restricted dimensions. If the companies want proper answers to their questions they should provide at least reasonable space in which to answer them. For example, it is a little difficult to write a full address in a single line less than 2½in. long, while the allotment of an even smaller space in which to give a detailed account of any accidents caused or suffered by any motor cycle owned by the proposer is little better than an inducement to write the single word "none." However, the owner should give full particulars in an accompanying letter if necessary, and put "see letter" in the inadequate spaces.

The particulars of machine must be accurately filled in, and as the registered letter and number are asked for, it will be necessary to get the machine registered before it can be insured. Sometimes the number of persons carried or the number of seats on the machine has to be stated. In the case of a bicycle one would naturally put "one," and under these circumstances it would be quite open to the company to refuse to recognise a claim if the accident arose while a passenger was being conveyed on the back carrier. As a matter of fact, most of the companies are willing to waive the point, but it is prudent to state on the form that a passenger may sometimes be carried on the machine, if the case, and get a note endorsed on

A Few Points on Motor Cycle Insurance.—

the policy acquiescing in this. Of course, if a sidecar or forecar is to be used, this should be definitely stated on the proposal form, and an increased premium will have to be paid.

Answers to Questions.

No difficulty will be experienced in answering the first few questions set out on the form, but the query relating to the use to which the machine will be put requires some consideration. Naturally, a machine that is used for pleasure purposes only will not be ridden as much as one that is employed as a business vehicle. Further, the former will be used mostly on open roads, while the latter will probably encounter a good many of the risks due to congested traffic. If the owner intends to use his machine only for holiday and leisure time riding, he can answer the question, "Will the machine to be insured be used solely for private pleasure purposes?" in the affirmative. But if he do, he must not be surprised if the company refuse to acknowledge his claim made in respect of an accident which occurs on his riding in to work some fine morning, or when riding over to a neighbouring town to do a little business that happens to require his attention. Using his machine for either of these purposes is not using it for private or pleasure purposes only. True, probably most of the companies would admit the claim, but they would do so as a matter of grace only. Some of them will even allow the insured to use the machine as his ordinary means of conveyance to and from his place of business and still hold themselves liable. But if the owner wishes definitely to cover the risks attending occasional or partial business rides of this kind, he should say so in his proposal, and see that a corresponding endorsement is made on his policy. And if he be asked to pay a little more he should not grumble; while, if he be going to use his machine for commercial travelling or similar business purposes, he must say so clearly and pay accordingly.

Machines Ridden by More than One Person.

Another question is, "Will the machine be driven solely by the proposer?". Here again it is rather unwise to reply simply "Yes." No doubt you buy a motor bicycle for your own riding, but there may be a few occasions when you will wish someone else to ride it. "Ixion" may come along and be persuaded to run it a short distance to see if it is well tuned; or towards the end of the season a prospective purchaser (after having deposited the cash) may be granted a trial trip. The better answer to this question, therefore, would appear to be a qualified one, "Yes, as a rule," or something to that effect, and if the company want an explanation you can give it. Sometimes the insured is asked if he is suffering from any physical infirmity, especially if he is insuring against personal accidents. This question, like all the others, should be answered with perfect good faith. If you are aware of any defect, mention it, and if you are at all uncertain, get the company either to accept your doctor's certificate or let their own doctor examine you. It is no economy to get the company to accept you—and your money—and then, when you have a smash-up, find you are not entitled to receive any compensation, because you have, even innocently, misrepresented the true facts.

The most important risk to insure against is what is often called "third party" claims—that is, claims by members of the public for injury to themselves or their property occasioned by the motor cycle. Other risks are accidental damage to the machine by impact, ditto by fire, theft, and injuries to the owner.

As to the claims by the public, there is no saying how many of these may be made during the course of the year, nor how much each may run to, so that there should be no limit in the policy to either the number of accidents or to the amounts involved. Further, not merely the "claims" should be covered but also all law costs which may be payable.

Accidental damage to the machine is often confined to damage by impact or collision. This seems unnecessarily restricted. At least one company's clause indemnifies the person insured against damage by "accidental and external means," which is a good deal wider than mere impact or collision. This company holds itself liable, too, for consequent damage caused by mechanical breakdowns.

Some companies even refund the cost of removing the machine from the scene of accident to the repairers and back to the owner.

Claims and Repairs.

Each policy is accompanied by a claim form, and when an accident occurs it is best to make the claim on this form. As a general rule, repairs must not be commenced without the company's consent, but this is now frequently modified, repairs up to £2 or so being allowed to be proceeded with forthwith, if a written estimate signed by a qualified repairer be first sent in to the company. This is a great convenience when one is touring. Information of the accident should always be given to the company where there is any possibility of a claim being made by a third party. The insurance companies are generally glad to make a substantial reduction from their premiums if the insured will bear part of each loss or damage—say from £1 to £5—but, as a rule, it is not wise to avail oneself of the offer. Most of the injuries sustained only cost a pound or two to rectify, and for these the rider would be largely or entirely uncovered.

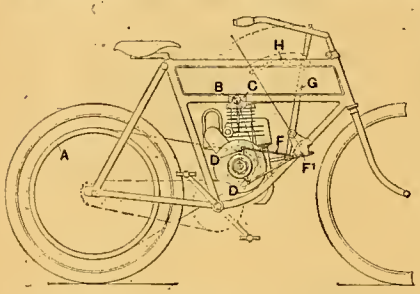


A KENT CROSS-ROAD IMPROVEMENT.

At the foot of Farnborough Hill, on the Sevenoaks-Hastings Road, open rails have been substituted for thick hedges at the corners, thus allowing a clearer view of oncoming traffic.

A Zenith Construction.

In the well-known Zenith machine the belt slack resulting in the use of a variable pulley is taken up by sliding the rear wheel in the frame. In the construction now illustrated, the wheel A is held rigidly, and the engine itself is moved to take up the slack. The cylinder head is pivoted at B to a bracket C rigidly secured to the frame, and is adapted to be oscillated about this pivot by a hand lever G working over a quadrant H. A variable pulley of suitable type is employed having



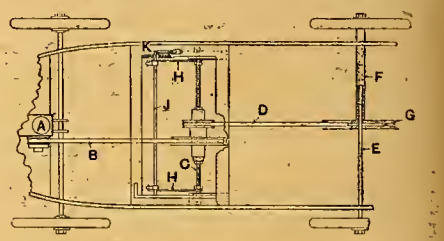
a pair of operating arms D, connected to links pivoted to an anchor on abutment

PATENTS by Eric W. Walford F.C.I.P.A.

F. The operation of the pulley is such that as the engine is swung about its pivot by the lever G the arms D are rotated in opposite directions about their axes, and vary the distance between the pulley flanges. The parts are so designed that the variation of the pulley is in suitable proportion to the movement of the engine, so that the tension of the belt remains constant for all changes of gear. Means of adjustment are provided by the screws at F1.—Zenith Motors ,Ltd., and C. M. Smith, No. 485, 1911.

A Slipping Differential.

This invention is illustrated in the accompanying plan view as applied to a light vehicle, driven by V belts. Motion is transmitted from the engine A by a belt B to a counter-shaft C, and therefrom by a belt D to the rear axle. The axle is constructed in two parts, an inner part E carrying one driving wheel and an outer sleeve part F carrying the other. Each part E and F carries one flange of the pulley G, so that when the belt D is slacked off the two pulley flanges may move in relation to one another when travelling in a curve. Slacking of the belt D is provided for by mounting the counter-shaft C to slide in the



frame, and providing it with operating mechanism consisting of links H connected by a rod J to the lower end of a pivoted lever K, oscillation of which effects the desired object. — G. Armstrong, No. 29,539, 1910.

Trade Announcement.

B. Alan Hill has joined the staff of the Hendee Manufacturing Co., W. A. Sale having resigned his post

An Unfounded Report.

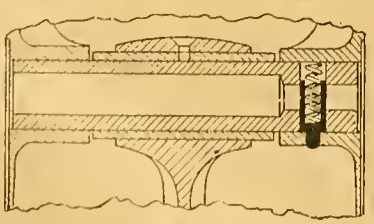
We are asked to deny a report that is current that Messrs. Brown and Barlow are giving up the manufacture of their universal type of racing carburetter, owing to its being unsatisfactory. The carburetter is not only a great success, but is enjoying a large sale.

Silent Chain Transmisson.

Hans Renold, Ltd., Manchester, are making a special silent chain suitable for chain-driven motor cycles, particularly those where a counter-shaft gear is fitted behind the engine and chain drive used from engine to counter-shaft. The new chain will be ½in. pitch by ⅜in. wide, and in place of the centre guide usually employed with silent chains for motor car transmission to prevent the chain riding off the pinions, shrouds will be fitted to the side plates.

Gudgeon Pin Fixing.

The accompanying illustration is that of the gudgeon pin fixing used on the 3½ h.p. Rover engine. The small spring-controlled plunger should be pushed up from underneath with the aid of a piece of wire or the end of a file, when the



gudgeon pin can be knocked out from the other end. When removing the Rover gudgeon pin, it should never be knocked to remove it until the plunger has been first of all forced upwards.

SPARKLETS

Catalogues Received.

As might be expected, the 1912 catalogue of the Indian motor cycles is an interesting one. Both models are well illustrated and described with a specification of each printed underneath the illustration. Eight pages are devoted to descriptions and well executed half-tone illustrations of Indian features, among which are the new rear hub, foot starting device, and rear wheel brakes. Interested readers can obtain copies on application to the Hendee Mfg. Co., 178, Great Portland Street, W

The Ariel 1912 catalogue is a well got up booklet, describing and illustrating the various models and chief features of these machines. There are also detailed illustrations of the Ariel features, hints on adjustment, lubrication, and timing of the engine. Application for copies should be made to Components, Ltd., Ariel Department, Bournbrook, Birmingham.

An exceedingly well got up catalogue, which is of inestimable value to Triumph users, is the "Triumph Repairs and Parts Catalogue," in which every single part of a Triumph machine is priced and listed. The lists are considerably aided by clear illustrations, in which each part is numbered and shown photographically. At the end of the booklet there is a list of accessories. The Triumph Cycle Company also send a copy of their 1912 catalogue of Triumph motors, which is a most artistic production printed in two colours In addition to illustrations and specifications of these well-known machines, the constructional details are very fully described and illustrated by half-tone blocks, showing many of the principal parts in section. Most of these are exclusively Triumph details, which cannot be seen in any other catalogue Application for copies should be made to Coventry.

A New M.R. Hub Clutch.

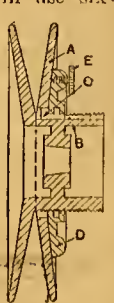
The Moto-Rêve Company are now fitting a multiple disc type hub clutch to their twenty-seven guinea model which enables the engine to be started by means of the pedals with the back wheel on the ground. The extra cost for this improvement is quite moderate, and will largely add to the convenience of this particular pattern.

Carburetter Valves Sticking.

The Aston Motor Accessories Co., Ltd., Aston, Birmingham, inform us that as there has been considerable prominence given in descriptions of winter trials to the trouble of carburetter valves sticking, they have pleasure in stating that of all the complete carburetters sent out of their latest pattern they have up to now received no complaints.

An Adjustable Pulley.

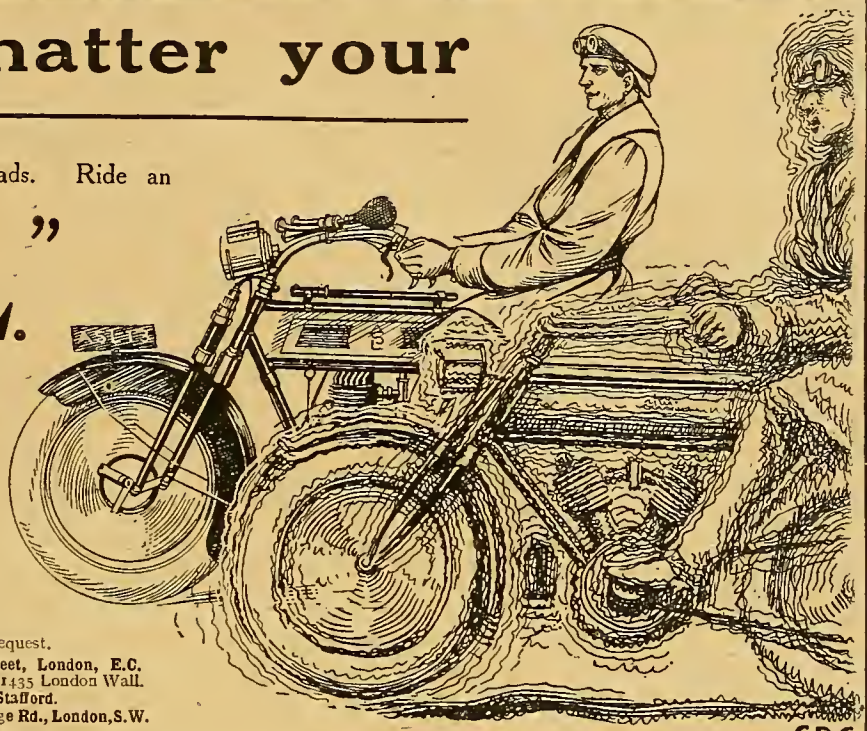
Mr. C. D. Bird sends us details of an invention which he has had in use six months with great satisfaction. The flange A screws on the boss B, and has eight keyways cut in it. The key C, which slides in a keyway on the boss, can be made to engage with any of these. This key is moved by the adjusting flange D, which also screws on to the boss B, and is locked by the screw E. The key is made slightly taper to facilitate its entrance into the keyways on the movable flange A. No tools are required for the adjustment of this pulley.



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the most comfortable of all motor cycles. ALL vibration is absorbed by the air springs front and back, the rider being literally

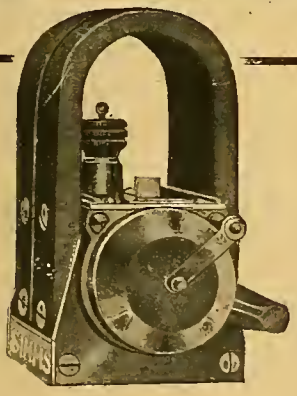
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Telephone: 3843 Paddington. Telegrams: "Expansible, London."
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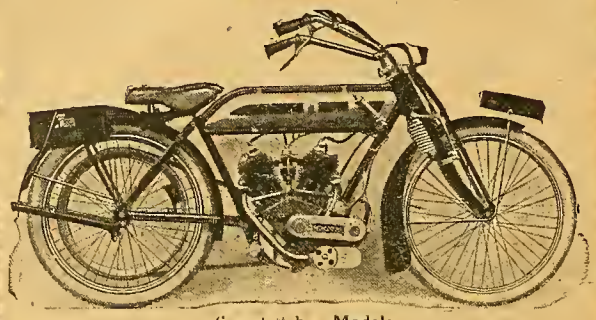
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FIRST, F. W. Barnes, Zenith Gradua.
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Upwards of 100 second hand Bargains.

Note the following and write for complete list.

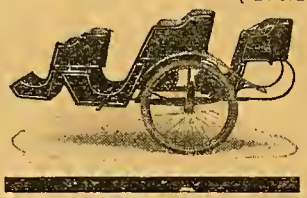
1911 3½ h.p. F.E. TRIUMPH	£43	0	0
1911 3½ h.p. T.T. TRIUMPH	£42	0	0
1909 3½ h.p. F.E. TRIUMPH	£35	0	0
1909 3½ h.p. TRIUMPH	£31	0	0
1911 3½ h.p. PREMIER	£36	0	0
1911 3½ h.p. Two-Speed HUMBER	£40	0	0
1910 3½ h.p. Two-Speed HUMBER	£35	0	0
1911 3½ h.p. KERRY	£35	0	0
1910 2¾ h.p. Twin ENFIELD	£22	10	0
1910 2¾ h.p. Twin MOTO-REVE	£22	10	0

All machines guaranteed.

ROBERT BEVAN, Castle Street, CARDIFF.

Three-seated Sidecar.

(REGISTERED.)



The unique advantages of this sidecar are very apparent.

The two smaller seats are for children of from 1 to 8 years of age.

For the use of TRAVELLERS the small seats can be removed and boxes or baskets fitted instead.

A 3½ h.p. to 5 h.p. machine with two-speed gear will take the sidecar over any ordinary roads with full load.

Price £12 12s. only. Special Terms to Agents. Immediate Delivery.

DANIEL CROTTY,

BRIDGE ST., DUNGARVAN.

NEW EDITION
. . NOW READY . .



"MODEL FLYING MACHINES"

Their Design and Construction

(Second Edition).

Revised throughout, Enlarged, and brought right up to date.

A handbook devoted to the construction of practical models of flying machines of all types. The greater part of the book is devoted to aeroplane models, but special chapters are included, dealing with direct lift and flapping wing types, and also with model dirigibles.

Profusely illustrated from drawings by the author.

The advice given is the result of the personal experience of the writer, and the book will be found of the utmost service to all who follow the fascinating and instructive hobby of making and flying models.

PRICE **1/-** Net.

Obtainable from the Publishers of "THE AERO," ILIFFE & SONS LTD., 20, Tudor Street, London, E.C., and all the leading booksellers.

Remittance must accompany post orders.

By Post. **1/2**

HOW'S THIS, BHOYS?

No.	Make.	Price. £	s.	d.	Total. £	s.	d.
50	**Matchless,** 8 h.p.	70	7	0	3,517	10	0
40	**Bradbury,** chain drive	58	10	0	2,340	0	0
20	**Humber,** 2-speed	52	10	0	1,050	0	0
36	**Bat-Japs,** 8 h.p.	72	12	0	2,613	12	0
20	**A.C.'s**	87	10	0	1,750	0	0
26	**Morgan Runabouts** ..	89	5	0	2,320	10	0
40	**Zeniths**	55	13	0	2,226	0	0
50	**P. and M.'s**	60	0	0	3,000	0	0
38	**Scotts**	65	0	0	2,470	0	0
37	**Douglas**	50	0	0	1,850	0	0
100	**Clynos**	68	5	0	6,825	0	0
6	**Premiers,** twin	52	10	0	315	0	0
20	**Lincoln Elks,** 2-speed and free-engine	42	0	0	840	0	0
	Assorted New Machines of various kinds	..			5,000	0	0
	TOTAL ..				£36,117	12	0

The above is a sum in arithmetic, and represents a portion of the New stock that Hitchen's have purchased for the coming season, 1912. All these machines have to be sold, and we look to you to help. A considerable number are already booked, but we have PLENTY FOR EVERYBODY, and anticipate your kind assistance in the matter of shifting them.

We believe we are correct in supposing that no other firm in the Kingdom has placed such large contracts for 1912 machines. We are out on the JUMP ourselves, and we hope that you are THE SAME; if not, it is time that you were, unless you wish to be left like a pebble on the beach when the tide has gone back. It is NO USE writing to us in June, as the machines will then be sold up, and the bhoys riding them. If you want a machine, GET A MOVE ON YOU, and come Morecambewards at once and see us; or if you can't, write us.

We can take your old machines in part payment for many of these, and we can sell you a machine on the Deferred; we can sell you a machine for cash! Besides the above, we have £3,000 worth of Second-hand Machines on the premises at the moment; all sorts, all sizes, and all ages—most of them, however, 1910 and 1911. Our stock of scrappage is very small! However, we have a few that we can sell the bhoys at a nice handy price for £3 down and the balance by instalments

When you have made up your mind what you are wanting to buy, don't waste a minute, but get on the buzz, and let us have your order. We would be sorry for you to find that when you are wanting, say, a Clyno, and write up to Morecambe, that Hitchen's are sold up for a month or two in advance—perhaps more. This year is going to be a KNOCK-OUT season, the biggest in the History of the Motor Cycle boom. While it is on, get on the hop, and have your machine bought. Don't pride yourself on the fact that the boom will be over by and by! Now is the time to buy. Write us, and we will put you on the right track. If you are undecided what to buy, get into touch with us and get the benefit of our experience. Our opinion will be unbiassed. We have always some of everything, and can guarantee you a right thing for your requirements. Amongst the above, you will note that threequarters of them are two-speed sidecar machines. These, together with the A.C. and Morgan Runabouts, are the **coming thing.** If you once go in for a sidecar machine, you will not give up motoring. We can supply you with these at from **£15** to **£75.** We do not tell you that one at the former price is as good as the latter, or that you can go anywhere with a 3½ h.p. machine and sidecar, because you cannot. WE can give you GOOD VALUE for your money.

You will notice that we are extensive advertisers, but we keep our yarns within the range of truth, and do not wander away and tell you a lot of bunkum.

We are still at the old, old game, bhoys! sending you goods for three days on approval. If you don't like them, send them back, and have your money back in full. We feel sure that any deal you put in hand with us will be well attended to and give you every satisfaction.

While we are on the question of sending goods on approval, we would draw the attention of a few Sunny Jims to the fact that because we do more for the public than anyone else, it does not justify them thinking that we are doormats. For instance, it is no use sending for an article and keeping it for a fortnight, and then return it and ask for your money back, as this is beyond our scope entirely, and we are not "having any." If you cannot find out in three days whether a thing is to your satisfaction, you will not do so in three months. However, you will not have your money back in this case, but what we will do for you is to exchange it. This will apply to everything. To make it clear to all, at any time within THREE DAYS we will return the money, but we will not do so **after three days.** We will exchange the goods any time, but we **will not** return the money after then. Please GET THIS HOME. It is no use writing saying that you are the Captain or Secretary of a Club, and that you will not recommend us if you don't get your money back. Neither is it any use saying that if we send your money back you will buy everything you want from us between now and the millennium; or again, it is useless saying you will tell Mr. Editor if we don't send your money back as this is all away from the mark. We have a system of business that we adhere to, and we intend YOU to DO THE SAME.

If you want anything plainer than this, write to Morecambe, and we will give you a packet on your own.

Another little thing which has dawned upon us is that when we send goods on approval, we expect to get them back—if they are returned—in the same condition as when despatched from here. We don't accept broken articles. If they are broken when received by you, you must at once claim from the Railway Company. If you break them yourself, you must be responsible. We pack all our articles very well, and send them per passenger train at company's risk. If you instruct us to send same per post, and they are lost, you must accept the responsibility yourselves. Occasionally some Sunny Jim asks to have a motor cycle and sidecar sent at Owner's risk and when the articles get damaged they expect us to make the damage good. This is a luxury we certainly cannot indulge in. If you leave the matter in our hands, we will send at Company's risk, but we accept no responsibility after the goods pass into the company's hands at Morecambe Station. If this cap fits you, put it on, but don't be insulted, as a lot of you have "asked for it" for two years now.

Note our old address, where we will be pleased to have your kind enquiries and orders.

HITCHEN'S, Euston Road, Morecambe.
'Phone: 112 Morecambe. Tels.: "Motor, Morecambe"

By the by, we have now got two canaries, so we want more orders for the seed pots.

WE LEAD

THE

RICH

DETACHABLE AIR TUBE.

RICH'S PATENT — DETACHABLE TUBE — FREE CIRCULATION OF AIR — NOT BUTT ENDED

FIRST AT STANLEY, 1904,
FIRST AT OLYMPIA, 1911,
Beat all others.

Why use Endless or Butt-ended? Have the Tube with 8 years' reputation, and save pounds.

OTHERS FOLLOW

The only perfect detachable on the market. Use the tube that gives satisfaction, and can be repaired or the inside with ordinary rubber and solution. No expensive patches required. No Butt ends to burst. Endless or Butt-ended converted. Further particulars, write for booklet.

PUNCTURES HAVE NO TERROR.
The RICH COVERS
NON-SLIPPING and RELIABLE.
One price. One quality—the BEST.

By carrying a spare tube, you can be on the way in 5 minutes.

Reduced Prices.
All sizes from 1¾ to 3½
26 x 2 26 x 2¼ 26 x 2½
14/ 16/- 18/6
Pedal Cycle, 1¾ 1¾ 1¾ 7/-
Tandem, 1¾ 1¾ 8/6
Converts—
2 / 5/6 — 2¼ / 6/- — 2½ / 6/6
Don't go by the first cost but by what you save.
Send size of Cover.

26x2	26x2¼	26x2½ B.E.	Pedal Cycle,
32/-	36/-	40/-	10/6 W.O. 11/- B.E.



RICH DETACHABLE AIR TUBE CO., CRAWLEY, Sussex.

PAGETS
PURCHASE PLAN

You can purchase any of the well-known makes of motor cycles easily and without disturbing your capital by taking advantage of Pagets' Purchase Plan.

1/5 of the total amount is payable with order, the balance being spread over 12 months. If necessary special arrangements can be made to suit individual requirements.

The interest added to the makers' cash price is small—ranging from 2%—and we can give early delivery of most of the best known makes.

EARLY DELIVERY.
Write for full details.

PAGETS LIMITED,
10-11, Jermyn Street,
LONDON, S.W.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION IX
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

NOWHERE

IN ENGLAND CAN YOU SEE SUCH A LARGE SHOW OF BEST 1912 MOTOR CYCLES

OR

SUCH A FINE DISPLAY OF NEW 1911 & GENUINE 2nd HAND BARGAINS

OR

OBTAIN SUCH MODERATE PRICES WITH PROMPT DELIVERY

AS WE OFFER TO-DAY AT

Can buyers obtain such a selection of fully guaranteed bargains as are contained in our **TO-DAY'S LIST, SENT FREE, WHICH INCLUDES—**

	h.p.	£	s.
4944.	2¾ 1911 **Douglas**..	30	0
4945.	2¾ 1911 2-speed **Douglas**, Model E	38	10
4946.	2¾ 1911 **Douglas**..	32	10
4954.	3½ 1910 free-engine **Triumph**	33	10
4956.	3½ 1911 2-speed **Humber**	37	10
4957.	8 1910 **Bat** and sidecar	40	0
4960.	3½ 1910 2-speed **P. and M.**	42	0
4961.	3½ 1911 free-engine **Rudge** ..	40	0
4964.	3½ 4-cylinder **F.N.**	12	0
4913.	3½ 1911 free-engine **Triumph**..	42	10
4919.	2¾ 1911 2-speed **Douglas**, Model E	38	0
4921.	2¾ 1911 2-speed **Douglas**, Model E	38	10
4926.	3½ 1910 **Premier**..	27	0
4929.	3½ 1907 **Triumph** and sidecar	27	10
4933.	3½ 1909 **Triumph**	30	0
4934.	3½ 1908 **Triumph**	25	0
4939.	3½ 1909 **Triumph**	28	0
4941.	3½ 1911 2-speed **Humber**	38	10
4874.	1¾ **F.N.**	7	10
4893.	3½ **Peugeot**	20	0
4903.	3½ 1911 tourist **Rex**	30	0
4868.	8 1911 2-speed **Bat**	55	0
4854.	3½ 1911 free-engine **Triumph**..	45	0
4597.	3½ 1911 **Zenith-Gradua**	42	10
4607.	3½ 1911 **Kerry-Abingdon**	32	10
4760.	5 1911 free-engine **Indian**	42	0
4863.	3½ 1911 **Chaler-Lea-Jap**	35	0
4828.	3½ 1911 **James** ..	35	0
4733.	6 1909 **Chater-Lea**, 2-sp., chain drive, and sidecar	40	0
4727.	3½ 1911 **Kerry-Abingdon**	32	10
4533.	2 1911 3-speed **Humber**	35	0
4723.	3½ 1908 **Triumph**	27	10
4758.	3½ 1911 single-speed **Humber** ..	30	0
4420.	3½ 1911 free-engine **Premier** ..	42	10
4768.	2¾ 1911 standard **Douglas**	30	0
4575.	3½ 1911 standard **Bradbury**	35	0
4638.	3½ 1911 free-engine **Triumph**..	45	0
4628.	3½ 1910 **Triumph**, Mabon, variable gear	38	Gns
4571.	3½ 1911 standard **Bat**	35	0

Write for a copy. Send details of your used motor cycle and receive our unequalled liberal exchange offer for same in part payment of a latest 1912 model.

Wauchopes
OFF FLEET ST., NEAR LUDGATE.
Telephone: 5777 Holborn.
Wires: Opificer, London.

9, SHOE LANE, LONDON, E.C.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or it "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

NEW Triumphs, ready for delivery, also new 1911 model; what offers.—Walker's.

1910 Triumph, in good condition, Whittle belt and spares; £36.—Walker's.

1911 3½h.p. Premier and spares, almost new; £37, bargain.—Walker's, Fishburn, Ferryhill.

INDIAN, 5h.p., free engine, clutch, with various spares; £35.—Holzapfel, North Elswick Hall, Newcastle.

PREMIER, 2¼h.p., 1912, brand new, never ridden once, magnificent machine; cash only, £32/10.—No. 9,630, *The Motor Cycle* Offices, Coventry.

3½h.p. Auto Moto, newly enamelled and plated, Clincher tyres, B. and B., perfect condition; sell at £8; any trial.—Burton, 95, London Rd., Carlisle.

TRIUMPH, 3½h.p., 1911 model, free engine, brand new out of crate; to clear £52, with lamp and horn; a bargain.—Turvey and Co., The Motor House, Sunderland.

TRIUMPHS, Humbers, B.S.A., Royal Enfield motor cycles, lightweights, 2 speeds, free engines; write, wire, or 'phone for immediate deliveries.—Turvey and Co., The Motor House, Sunderland. Tel.: No. 626.

1910 Triumph, first-class condition, Jones trip speedometer, Lucas lamp, generator, mirror, spare tube and case, touring valise, pump, repr. of band, tools, spares; £35.—Harburn, Peel St., Bishop Auckland.

3½h.p. Rex Motor Cycle, 1909 model, magneto, h.b.c., spring forks and seat, in splendid running order; £21 to clear.—Turvey and Co., The Motor House, Sunderland. Sole agents Triumphs, Humbers, B.S.A., Enfields, Culthorpes. Extra catalogue free.

SECTION II.

York and Lancashire.

A.S.L. A.S.L. A.S.L.

SIT on Air Springs and Cushions to Ride.

LUXURIOUS Motor Car Comfort Awheel.

MANCHESTER and District Sole Agents; inspection invited.—Motor Exchange, 32, Downing St., Ardwick Green.

HODGSON for Clynes (in stock).

HODGSON for Premiers (January).

HODGSON for Sidecars (in stock).

HODGSON, 10, Horton Rd., Bradford. Tel.: 5361.

NEW Chater-Lea No. 7 Frame, £3/10, or offer.—Halstead, wheelwright, Ossett.

CHATER-LEA No. 9 Frame (new); 50/-.—Cook, Church Lane, Eston, S.O.

In answering these advertisements it is desirable to mention "The Motor Cycle."

The Halifax Motor Exchange

Largest Rex Dealers,

16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams, "Perfection."

£4 DOWN and 5/- weekly secures prompt despatch of any of these machines.

2¾ h.p. **F.N.**, very good order	£12 10
Twin **REX**, spring forks	£16 10
Lightweight **MOTOSACOCHE**, spray, runs well	£14 10
3 h.p. **QUADRANT**	£10 10
2¾ h.p. **KERRY**, spring forks	£10 10
Twin Magneto **MOTO-REVE**	£17 10
3½ h.p. **WOLF**, spray, smart, h.b. control	£12 10
3 h.p. **HUMBER**, chain drive	£9 10
5½ h.p. Twin **REX**, spring forks	£16 10
3½ h.p. **REX**, spring forks, reliable	£15 10
3½ h.p. **BRADBURY**	£16 10
3 h.p. **ANTOINE**, b.b. control, spring forks	£12 10
2¾ h.p. **OE DION**	£10 10

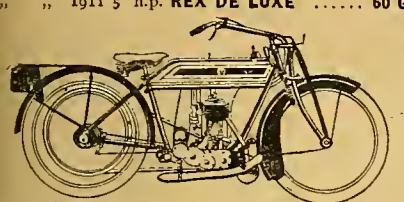
£7 deposit and 10/- weekly secures—

Magneto **TRIUMPH**	£25 10
5½ h.p. Twin **REX DE LUXE**, mag.	£22 10
Four-cylinder **F.N.**, magneto	£19 19
3½ h.p. Magneto **REX**	£19 15
Twin **MOTO-REVE**	£19 19
F.N. Magneto Lightweight	£19 19
3½ h.p. Magneto **MINERVA**	£19 10
Magneto Twin **REX**	£19 19

TYRES. SPECIAL PRICES. APPROVAL.

26 × 2 and 26 × 2¼ Clipper and Continental Covers	14/9
26 × 2½ Michelin Heavy Tricar Covers	25/-
24 × 2¼ and 26 × 2¼ Tubes	5/11

Brand New 1911 3½ h.p. Tourist **REX**	43 Gns
" " 1911 2¾ h.p. Two-speed **REX** Junior	50 Gns
" " 1911 3½ h.p. Free-engine **REX**	48 Gns
" " 1911 3½ h.p. **REX DE LUXE**	57 Gns
" " 1911 5 h.p. **REX DE LUXE**	60 Gns



Liberal Exchanges in addition to Cash Discount.

GUARANTEED IN RUNNING ORDER.

6 h.p. Magneto **G.B.**, spring forks	£26 10
1912 2¾ h.p. Two-speed **REX** Junior, NEW	£48 0
1912 Twin **REX** Sidette. In stock. NEW	£75 0
1911 3½ h.p. Plate Clutch **TRIUMPH**, only 500 miles	£47 10
1911 3½ h.p. Tourist **REX**, done 750 miles	£32 10
1911 2¾ h.p. Two-speed **REX** Junior, as new	£39 10
1911 3½ h.p. **REX**, clutch model	£37 10
1911 5 h.p. Two-speed **REX DE LUXE**	£47 10
1910 7 h.p. **REX DE LUXE**, two speeds	£48 0
1910 7 h.p. Twin **REX**, HOT STUFF	£37 10
1910 5 h.p. Twin **REX**, very fast	£29 10
1910 5 h.p. **REX DE LUXE**, fine sidecar machine	£42 10
1910 3½ h.p. **REX**, very fast, special machine	£27 10
Magneto Twin **REX**, 1911, Mabon clutch, and castor wheel sidecar	£28 0
1909 3½ h.p. **REX**, magneto, Druid fork	£24 10
1909 3½ h.p. Two-speed **REX DE LUXE**	£32 10
5½ h.p. Two-speed Twin **ROC** magneto, Druids	£32 10
1908 3½ h.p. Magneto **REX**, very fast	£22 10
1907 3½ h.p. Magneto **REX**, spring forks	£19 19
5½ h.p. Twin **REX DE LUXE**, Roc clutch, sp. forks	£22 10
Brand New 3½ h.p. **REX**, spring forks, and pedals	£31 0
Brand New Twin Magneto **REX**	£37 15
3½ h.p. Two-speed **N.S.U.**, smart	£21 0
1908 **TRIUMPH**, very powerful	£28 10
Magneto **TRIUMPH**, spring forks, specially low	£25 0
3½ h.p. **REX**, very fine condition	£15 10
Four-cylinder **F.N.**, magneto, spring forks	£13 18
F.N. Magneto Lightweight	£16 10
3½ h.p. Magneto **FAFNIR**, M.O.V.	£19 0
3½ h.p. **WOLF**, Stevens engine, h.b. control	£12 10
Twin Magneto **MOTO-REVE**	£17 10
3 h.p. **QUADRANT**, low frame	£10 10
3 h.p. **ANTOINE**, very smart machine	£12 10
2¾ h.p. **F.N.**, in very good order, recommended	£12 10
3 h.p. **HUMBER**, chain drive	£9 10
MOTOSACOCHE, Druid forks	£14 10
2¾ h.p. **KERRY**, spring forks	£10 10
3½ h.p. Magneto **MINERVA**, b.b. control	£19 10

Easy Payments at Special Rates.

1912 BRADBURY REX | IN STOCK. LIBERAL EXCHANGES.

MOTOR BICYCLES FOR SALE.

F.N., 1911 model, 5-6h.p., 4-cyl., guaranteed perfect condition, only run 700 miles, like new, spares; sacrifice £36.—Haviland and Armitage, Upperhead Row, Huddersfield.

F.N., 1½h.p., magneto, spring forks, splendid condition, good tyres, new Lyso belt, lamp, tools, many spares, fine hill-climber; £15.—Ireland, 21, Thurstane St., Halliwell, Bolton.

1911 Premier, £34; 1911 Bradbury, £35; 1910 Triumph, £35; 1910 P. and M., £38; 1912 Triumphs, P. and M.'s, Bradburys, Ivy motor cycles.—T. Reed, Nettlesworth.

FOR Sale, 1912 Zenith, 6h.p., as taken out of crate, 3in. tyres; owner going abroad, and has no use for same; cost £73, will take £66, lowest.—No. 9,635, *The Motor Cycle* Offices, Coventry.

TRIUMPH, 3½h.p., 1907, new Avon combination cover back, new Clincher Dreadnought front, adjustable pulley, in fine order; £20, first cheque secures.—Whittaker, 630, Bacup Rd., Waterfoot.

3½ h.p. 2-stroke Rex, 1910½, Bosch, Amac, h.b.c., Lyso and Whittle belts, lamp, horn, tools, spares, just re-bushed, excellent condition; £30, or near offer.—No. 9,632, *The Motor Cycle* Offices, Coventry.

PHELON-MOORE, 1909¾, completely overhauled summer, new cylinder, piston, wedgebars, chains, etc., all in perfect condition, runs like new; any examination; £39.—13, Welbury Drive, Bradford.

LIVERPOOL Agency for Triumph and Matchless Motors, Hitchings, Ltd., 74, Bold St., Liverpool, the pioneers of motor cycling in the North. It will pay you to deal with Hitchings, Ltd., an old-established firm of highest repute.

DOUGLAS, 1911, Model F, open frame, with 2-speed gear clutch, and handle starting; not ridden 500 miles; exceptionally fine condition; a bargain at £59.—Hitchings, Ltd., 74, Bold St., Liverpool.

BARGAIN.—1909 5h.p. Vindec Special, Peugeot engine, Whittle belt, new pulley, new Palmer cord, Brown and Barlow carburetter, Bosch magneto, just enamelled and overhauled; £25; any trial allowed.—J. Rogerson, 25, Ormskirk Rd., Newtown, near Wigan.

3½h.p. Triumph, 1911 as new, fit complete, £40; 3½h.p. Scott, 1910, 2-speed, and free engine, a gift, £39/10; 5h.p. Indian, 1911, free engine, not ridden 200 miles, fit complete, £45, a bargain.—J. Hebden, The St. James' Motor and Cycle Depot, Burnley.

1911 3½h.p. Touring Norton (79×100 engine), 5-70 m.p.h., well-known winner of speed trials, hill-climbs, and reliability trials, broke world's record for flying kilo in May last, only done about 1,000 miles, magnificent condition; 36 guineas.—D. Bradbury, 3, Palmer Rd., Sheffield.

1911 T.T. Roadster Triumph, very fast engine, delivered June last, not done 3,000 miles, in exceptionally fine condition, absolutely unscratched, complete with A.K. knee-grips, self-contained acetylene lamp, Lucas horn, Veeder cyclometer, Brooks luggage carrier; price £42.—Robert Spencer, Tranby Croft, Hargate.

HITCHINGS, Ltd., for Triumph and Matchless Motors; any make supplied on most favourable terms; exchanges arranged; absolute satisfaction and courteous service assured by dealing with Hitchings Ltd., 74, Bold St., Liverpool. Established over 30 years.

£4 Deposit, and 5/- weekly secures: 3h.p. Quadrant, £10/10; 3h.p. Humber, £9; Motosacoche, £14/10; 2¾h.p. Kerry, £10/10; Moto-Reve, £17/10; 3½h.p. Rex, £15/10; 3h.p. Antoine, £12/10; 2¾h.p. F.N., £12/10; 3½h.p. Bradbury, £16/10; twin Rex, £16/10.—Motor Exchange, Westgate, Halifax.

REXES.—New 1911 models; discount for cash; liberal allowances for other makes; accumulator Rexes wanted.—Motor Exchange, Westgate, Halifax.

1912 Bradburys; deliveries from stock; second-hand machines taken in exchange; send particulars; quotation by return.—Colliers, Westgate, Halifax.

FOR Sale, Triumph motor cycle, 1907 model, 3½h.p., old type, Brown and Barlow carburetter, h.b.c., accessories, £17/10, or nearest offer; also Star motor car, about 1902 model, 7-9h.p., 2-cyl., detachable back seat, 3 lamps, spare tube, jack, and pump, £35, or nearest offer.—For further particulars apply to Butterell and Ridgway, Cogan House, Hull.

A FEW High-class Bargains.—1912 Morgan runabout, 1912 hood, screen, £97/10; 1910 8h.p. Jap-Bat, £36; 1910 Triumph, £35; ditto, 1911, £39; 1911 Triumph, shop-soiled, £46; 1911 Royal Enfield, shop-soiled, £39; new Moto-Reve twin, shop-soiled, £32/10; 1911 Rex, 5-6h.p., 2-speed, £45; ditto, £42/10; three 1910 Indians, 5-6h.p., £32/10 each; 2 1910 N.S.U.'s, 5-6h.p., 2 speeds, £32/10 each; 5-seater Humber car, perfect, £145; 6h.p. Rover car, perfect, £60; 1911 F.E. Calthorpe, £45; 1911 Premier, as new, £39; 1911 8h.p. Matchless, £52/10; 1910 F.E. Motosacoche, £25; Moto-Reves from £15 to £30; 1910 Royal Enfields, £25 to £28; Triumphs, all ages; 1910 and 1911 Rex Speed Kings, £27/10 to £35. Besides these 200 more, all sorts and sizes. Weekly lists waiting. All sold on approval; money returned if not satisfactory.—Hitchens, Morecambe.

REY, 5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.

Telegrams: "Rey Hampstead." Tel. 2678 P.O., Hampstead.

EXTENDED PAYMENTS

Taken on any Machine or Runabout.

NO EXTRA CHARGE ON MOST MAKES.

TERMS: QUARTER DOWN, BALANCE IN TWELVE EQUAL MONTHLY PAYMENTS.

Following 1912 Machines for Immediate Delivery:

BRADBURY, 1912, standard	In stock	£48 0
BRADBURY, 1912, T.T.	"	£48 0
BRADBURY, 1912, free engine	"	£54 10
BRADBURY, 1912, two-speed	"	£55 0
RUDGE, 1912 standard model	"	£48 15
RUDGE, 1912 T.T.	"	£48 15
RUDGE, 1912 free engine	"	£55 0
ZENITH, 1912, 3½ h.p.	"	53 Gns.
ZENITH, 1912, 6 h.p.	"	67 Gns.
ZENITH, 1912, 8 h.p., six days	"	69 Gns.
BAT, 1912, 3½ h.p., two-speed	"	£59 0
BAT, 1912, 6 h.p., two-speed	"	£70 12
BAT, 1912, 6 h.p., standard model	"	£58 0
BAT, 1912, 8 h.p., standard model	"	£60 0
TRIUMPH, 1912, standard model	"	£48 15
TRIUMPH, 1912, free-engine model	"	£55 0
DOUGLAS, 1912, model H, two-speed	"	£47 0
DOUGLAS, 1912, model G	"	£41 0
F.N., 1912, 2¾ h.p., two-speed gear	"	45 Gns.
F.N., 1912, 5-6 h.p.	"	50 Gns.
SINGER, 3½ h.p., 1912, free engine	"	£55 0
LINCOLN ELK, 1912, 3½ h.p.	"	£34 0
LINCOLN ELK, 1912, 3 h.p.	"	£30 10
LINCOLN ELK, 1912, 2¾ h.p.	"	£28 10
SINGER, 3½ h.p., 1912, three-speed gear		£68 15
BEDELIA Cars (6 days), 7½% extra E.P.		59 Gns.
G. & N. Runabouts, 8 h.p. (in 6 weeks)	"	87 Gns.
A.C., speed sociable type (in Feb.)	"	£87 10

Any other makes on application.

ABOVE MACHINES FOR IMMEDIATE DELIVERY. NO WAITING THREE WEEKS.

LINCOLN ELKS

From £28 10s.

Sole London Agent for the famous LINCOLN ELK. Finest value on the market for quality and reliability. All models on view and for immediate delivery.

TRADE SUPPLIED WITH VARIOUS MAKES. LIBERAL DISCOUNTS ALLOWED.

Second-hand Machines at Bargain Prices to clear.

BAT, 8 h.p., 1910, with Millford sidecar	£40 0
HOBART, 2¼ h.p., new 1911	£29 0
F.N., 6 h.p., good order	£18 0
REX, 5 h.p., 1909, two-speed	£25 0
LINCOLN ELK, 3½ h.p., 1911 clutch, and sidecar	£30 0
PRECISION, 2½ h.p., 1911, almost new	£25 0
DOUGLAS, 1910, fine order	£24 0
TRIUMPH, 1910, free engine	£37 0
TRIUMPH, 1910, free engine, splendid order	£38 0
TRIUMPH, 1909, splendid order	£28 0
BRADBURY, 1911, 2-speed gear	£35 0
BAT, 5 h.p., T.T., condition like new, bargain	£45 0
REX, 4 h.p., T.T., twin, 1911 model, splendid order	£24 0
DOUGLAS, 1911, Model D, all accessories	£26 0
ZENITH, 1910, good order	£25 0
ZENITH, 1911 3½ h.p.	£39 0
ZENITH, 1911, 3½ h.p.	£40 0
ZENITH, 1911, 3½ h.p.	£42 0
TRIUMPH, 1910, F.E.	£39 0
J.A.P.-CHATER-LEA, 1911, 2¾ h.p., sp. f'ks., mag.	£18 0
ZENITH, 8 h.p., 1911, splendid order	£48 0
ZENITH, 3½ h.p., 1911, good order	£38 0
TRIUMPH Standard, 1910, with clutch	£29 0
LINCOLN ELK, 3½ h.p., and clutch	£26 0
Cane Sidecar, good condition	£4 0

All Accessories included on S.H. at the price advertised.



THE £4 - 10 REY Sidecar £3 - 10

With Hutchinson or Michelin 26 × 2¼ Tyre and Tube, 30/- extra.

The famous "REY" EXHAUST WHISTLE now reduced to 12/6 each. Triumph standard type.

The "REY" Leather Belting outlasts two of any other makes. Price 2/- per foot.

Special Discounts to Trade.

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

REY, 5, HEATH STREET, HAMPSTEAD.

LATEST BARGAINS.

Big Discount to Cash Buyers.

1912 MACHINES IN STOCK.

1912 3½ h.p. **BRADBURY**, single-speed.... £48 0
1912 3½ h.p. **BRADBURY**, two speeds £55 0
1912 3½ h.p. **NEW HUDSON**, three speeds 57 Gns
1912 2¾ h.p. **NEW HUDSON**, three speeds 47 Gns
1912 2½ h.p. **A.J.S.**, two speeds, chain drive 47 Gns

LIGHTWEIGHTS.

1¾ h.p. **WOLF**, A.J.S. engine, magneto .. £15 0
2¾ h.p. **CASWELL** vertical, Bosch, Amac, h.b. control £12 0
1910 2¾ h.p. **MOTO-REVE**, magneto, Druids £22 0
1910 2¾ h.p. **MOTO-REVE**, extra fine order £23 0
1909 2½ h.p. Twin **MOTO-REVE**, 50×70mm. £20 0
1908 Twin **MOTO-REVE**, magneto Druids £15 0

SINGLE-CYLINDER REXES.

1910 3½ h.p., fine goer £27 0
1910 3½ h.p., extra good £28 0
3½ h.p. 1909 Speed King, extra fine £23 0
3 h.p. 1908 Featherweight Rex, Bosch mag £17 0

TWIN-CYLINDER REXES.

1911 5-6 h.p. de Luxe, M.O.V., two speeds £44 0
1909 5-6 h.p. de Luxe, two speeds, fine .. £34 0
1906 5-6 h.p. Twin Rex, Mabon clutch.... £16 10
5-6 h.p., Bosch, Lloyd's variable gear £22 0
7 h.p. de Luxe, two speeds, M.O.V..... £43 0
5-6 h.p. de Luxe, 1908, two-speed model.. £28 0
5-6 h.p. de Luxe, 1908, two speeds, special £29 10
5-6 h.p. 1908 two-speed de Luxe, 1909 engine £32 0

N.S.U.s. N.S.U's N.S.U.'s.

5 h.p. twin, Bosch magneto..... £19 0
1910 6 h.p., M.O.V., two speeds..... £33 0

OTHER MAKES. OTHER MAKES.

1911 **RUDGE**, free engine, new November £45 0
1911 3½ h.p. **SINGER**, clutch model, done 200 miles £43 0
3½ h.p. **L.M.C.**, 1910 model £25 0
3 h.p. **SINGER**, Bosch, V belt drive, B.& B. £16 0
3 h.p. **QUADRANT**, Bosch, B.& B., sp. forks £16 0
3½ h.p. **QUADRANT**, h.b. control, sp. forks £16 0
1¾ h.p. **MINERVA**, V belt £4 10
3½ h.p. **MINERVA**, Bosch magneto, Amac £22 0

SIDECAR COMBINATIONS.

5-6 h.p. Clutch Model **REX** and new sidecar £29 0
5-6 h.p. Two-speed 1908 **REX** and sidecar £33 0
7-9 h.p Two-speed **REX** and sidecar £53 0
1910 6 h.p. **N.S.U.**, M.O.V., two speeds, complete with N.S.U. coach-built sidecar .. £38 0
All fitted with Magneto and Spring Forks.

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3 h.p. **REX**, vertical engine £9 0
3½ h.p. **BROWN Bicar**, M.O.V., 26in. wheels £12 0
1¾ h.p. **MINERVA**, V belt, spray carburetter £5 0

£4 DOWN SECURES ANY OF THESE. BALANCE 6/- WEEKLY.

3½ h.p. **QUADRANT**, h.b. control, sp. forks £16 0
3 h.p. **QUADRANT**, h.b. control, Bosch mag. £16 0
3 h.p. **SINGER**, Bosch magneto, h.b. control £16 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

4½-5½ h.p. **N.S.U.**, Bosch mag., h.b. control £19 0
1910 2¾ h.p. Twin **MOTO-REVE**..... £22 0
1909 2¾ h.p. Twin **MOTO-REVE**..... £20 0

CARS AND TRICARS.

5 h.p. **HUMBER** Car, two-seater, good goer £22 0
6½ h.p. **PEUGEOT** Car, two-seater £35 0
Duocar, Bosch magneto £45 0

MISCELLANEOUS BARGAINS.

New Screw-cutting Lathe, 4in. centres £6 10
Fulford Castor Wheel Sidecar..... £5 0
Pressed Accumulators (new), 15 amp. 9/8
Tricar Frame, suit 6 h.p. engine..... 35/-

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane,

Telephone 919. **HALIFAX** (Two minutes from G.P.O.)

MOTOR BICYCLES FOR SALE. SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

FOR Sale, 1910 Bradbury motor cycle.—Lloyd's Motors, Stafford.

1912 Models, any make supplied; early delivery of all the leading makes.—Moss, Wem.

1911 Triumph, free engine, bike and tyres perfect; £40.—Oakley, Station St., Hednesford.

LATE 1911 7h.p. Clutch Model Indian, £45; or exchange single and cash.—Hough, Leamore Walsall.

PHELON and Moore, brand new, 1911 standard touring model; in stock; £56/10.—Moss, Wem.

2½h.p. Daw, less tyres and coil, partly re-enamelled; £3/10.—Dolman, 27, Leicester St., Burton-on-Trent.

3½h.p. Twin Clement-Garrard, spring forks, studded tyres, perfect order; £13.—96, Overend St., West Bromwich.

HUMBER, 1911, June, 3½h.p., 2-speed, F.E., new Dunlop, excellent condition; £40. — Vickers, Congleton, Cheshire.

3½h.p. Quadrant Motor Cycle, low, perfect condition, £7; leather jacket and cap, new condition, £1.—Ison, motorist, Bloxwich.

A.S.L., 3½h.p., only ridden 1,000 miles, new condition, with speedometer, lamp, spares; best offer.—Bacon, Wellington, Salop.

ROYAL Enfield 1911 Twin Lightweight, belt driven, 38 guinea model, ridden only 10 miles; what offers?—Bacon, Wellington, Salop.

1912 Zenith, 3½h.p., unused; 50 guineas, or near offer; cash only; getting twin.—Box 9,626, *The Motor Cycle* Offices, Coventry.

BRADBURYS, 1912, free engine and 2-speed models, with all their superb improvements. — Paskells, Walsall Motor Depot, Stafford St.

ZENITH-GRADUA, 1912, 3½h.p., the motor cycle that is "barred" from all hill-climbing contests; it speaks for itself.—Sole agents for district, Paskells, Walsall Motor Depot, 250, Stafford St.

1911 Zenith-Gradua, 6h.p. twin, only arrived October; the one and only one for heavy work.—Paskells, 250, Stafford St., Walsall.

CLYNO.—Sole district agents for the hill-climbing Clyno; book at once for early delivery.—Paskells, 250, Stafford St., Walsall.

1911 New Triumph, ridden under 150 miles; cash wanted; £42; private owner seller.—Box L5,876, *The Motor Cycle* Offices, 20, Tudor St., E.C.

1911 7h.p. Indian, 2 speeds, practically new condition throughout, run 800 miles, most luxurious sidecar machine; sacrifice £47.—R. Else, Leawood, Matlock.

3½h.p. C.T.E., spring forks, h.b.c. Bosch, Phelon and Moore 2-speed, tyres as new, very low, in perfect condition; trial; £20.—Hallam, Baths, George St., Buxton.

£12.—Rex, 1908, 3½h.p., splendid running order; real bargain; Continental. Bates, Shamrock-Gloria, overhauling cost £10 recently.—Liberty Stores, Wem, Shropshire.

5-6h.p. T.T. Rex, in splendid condition throughout, complete with lamp, horn, tools, and spares; must sell; £17.—Apply, A. Wakefield, 35, Water St., Northwich, Cheshire.

3½h.p. Minerva, very low, good climber, just been overhauled, new accumulator; nearest £16; offers and exchanges considered.—Yearsley, 84, High St., Winsford, Cheshire.

BIRKENHEAD.—Triumph 1909, 2-speed, free, and sidecar coach-built, engine had 1911 fittings, trial, £39; Triumph, £22/10; 3½h.p. Minerva, £16, torpedo, h.b.c.—Keller, Grange Rd., W.

4½h.p. Twin Minerva, low, long handle-bars, spring forks, B. and B., variable, Wattle, £17; with sidecar £19; or exchange for 7h.p. Peugeot or J.A.P. engine and cash.—26, Moorland Rd., Stockport.

SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

GRIFFON, 3h.p., new tyres, good order; splendid bargain, £6/10.—Plaistow, Grimsby.

WOODGATE for Triumphs; stock, or early deliveries of all models; also several second-hand.

WOODGATE for Singers, 2¼, 3¼, and 4h.p. models, with 1, 2, and 3 speeds; two second-hand.

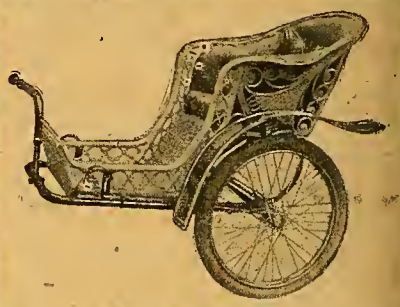
WOODGATE for Royal Enfields; immediate delivery 2¾h.p. 2-speed, and 6h.p. sidecar combination.

WOODGATE for Rudges, Ariels, Rexes, or any other make you may fancy; also for really high-class second-hands. Let us have your enquiries.—J. J. Woodgate's Motor Depot (estab. 1900), Coventry Rd., Birmingham. 'Phone: 372 Victoria.

REX, 3½h.p., magneto, lamp, horn, h.b.c.; £21, or nearest.—Owen, 32, Coundon Rd., Coventry.

LIGHTWEIGHT Wolf, h.b.c., splendid condition; £10, no offers.—P. J. Collier, St. John's, Wurwick.

FARRAR'S



Model C, £7.

Our other Models are:

MODEL DE LUXE £6 6
MODEL E, with child's seat £7 5
MODEL D, coach-built £8 0

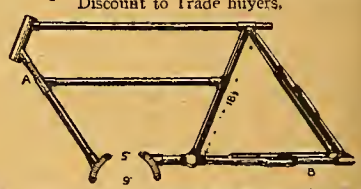
Carriage paid to your home.

All complete with Michelin or Continental Tyres. Customers have option of Round or Car Pattern Mudguards.

The following refinements are fitted to all models. No extra charge whatever:

1. **Kick-up Stand** for jacking up sidecar wheel for tyre repairs.
2. Large sized **Cocoanut Mat** fitted to foot of sidecar.
3. **Special Sidecar Lamp** (plated), and fitted to show white light at front and red light to rear.
4. **Extra Rapid** Quick Detachable Joints.
5. **We pay carriage to any town in the United Kingdom.**

Discount to Trade buyers.



MOTOR CYCLE FRAMES

We have a quantity of frames by well-known maker. **Price 32/6 each.**

Rigid forks, 7/6 extra. Druid forks, 45/- extra. Enamelled and plated in first-class style.

TYRES.	TYRES.	TYRES.	
Heavy Rubber-studded Covers, 26×2¼			18/6
26×2¼ Hutchinson Heavy T.T. Covers			25/-
26×2 and 26×2¼ Wired-edge Covers			12/6
Continental Rubber Non-skids, 26×2¼ or 2½			30/-
Hutchinson Ribbed Tread, 26×2¼			18/6
Continental, beaded, 26×2			18/8
Tubes, all sizes, guaranteed			9/6
New Butted Tube, 26×2¼			8/6
New Butted Tube, 26×2½			9/3
Special Heavy 26×2¼ Tubes, guaranteed ..			7/6

MISCELLANEOUS BARGAINS.

Mabon Clutch, fits twin Rex 55/-
Brooks B100 Saddle 9/6
Brooks B105 Saddle 11/6
Lycett's L109 Saddle (new) 11/6
Lycett's ditto, padded top (new) 14/6
Cocoa Fibre Sidecar Footmats 3/-
Soiled Amac Carburetters, h.b. control 15/-
Second-hand ditto 12/6
New Bosch D A V Twin Magneto, 48° £4 4
Bosch Magneto, D A 2, single-cylinder 67/8
Rex Pattern Belt Rim Brake (new) 6/8
Lycett's Carrier Toolbags (new) 7/8
1 h.p. Electric Motor, 230 volts £7 0
New 4 h.p. N.S.U. Engine, perfect £7 0
3½ h.p. Rex Engine, M O V £5 10
6 h.p. Stationary Engine, carburetter, coil .. £8 0
Sidecar Lamps, show red light behind 7/6
Trailer, 26in. wheels 25/-
New Toolbags, 9×6×3½in. 4/6
Sidecar Aprons, green or red, with studs .. 7/6
Druid Spring Forks (new) £2 6
New Lycett's Tubular Carriers 4/11
Longuemare Carburetters 5/-

FARRAR'S MOTOR EXCHANGE,

19, 21, 23, 25, Hopwood Lane,

HALIFAX (Two minutes from G.P.O.)

Telephone 919.

In answering these advertisements it is desirable to mention "The Motor Cycle."

AN IDEAL SIDECAR MACHINE

Two-speed Free Engine

RUDGE.

The engine starts with back wheel on the ground, and on test these Rudges give 8 h.p.

RUDGE, two speeds, free engine £56 10

ALL MACHINES GUARANTEED AND ACTUALLY IN STOCK.

RUDGE, 1912 standard £48
RUDGE, 1912 standard £48
RUDGE, Multi-gear Model, delivered 1st March.
ROYAL ENFIELD, 1911 model, two speeds, handle starting, a beauty £38
TRIUMPH, bike new, not done 500 miles, guaranteed £40
RUDGE, free engine 1911, Palmer Cord covers ... common £45
BRADBURY, standard 1911, unscratched, elaborate condition £39
RUDGE, Racing Model, 1911 all improvements, very speedy, first-class condition £40
N.S.U., 4½ h.p., twin, 2-speed gear, Bosch magneto, very fast £24
N.S.U., 3½ h.p., 1908, magneto, h.b.c., good and sound throughout £21
HUMBER, 1909, 3½ h.p., two speeds, very powerful, ... £28
N.S.U., 3 h.p., magneto, all improvements .. £18
QUADRANT, 3½ h.p., take a sidecar, good condition £12
REX, 1911, brand new twin-cylinder, Bosch aluminium, footboards, all improvements £38
REX, 5 h.p., 1909, spring forks, adjustable pulleys £26
REX DE LUXE, 1909, 5-6 h.p., 2-speed gear, variable pulley £32
REX DE LUXE, 5-6 h.p., Bosch, spring forks, two speeds, handle starting £28
ADVANCE, 6 h.p., magneto, h.b.c., twin cylinder, powerful £17
PORTLAND, Peugeot engine, 3½ h.p., 1911 model, Bosch magneto, rubber non-skids, machine little and carefully used £32
MINERVA, 8 h.p., Roc 2-speed, handle starting, torpedo tank, grey finish, very elaborate and smart, complete with sidecar £47 10
CENTAUR, P. & M., two speeds, complete with sidecar, splendid running £28
REX, 5-6 h.p., 1911, M.O. valves, two speeds, free engine, Binks' carburetter, sidecar, good tyres to all wheels, splendid order throughout £42 10
LLOYDS, 2 h.p., smartly finished £8
DE DION, Phœnix 2-speed gear, low and racy £10
REX, 2 h.p., spray carburetter £7

CASH, CREDIT, or EXCHANGE TERMS TO SUIT YOUR POCKET. WRITE US.

S. & R. Sidecar, wicker basket, nicely upholstered £5 5
S. & R. with wheel supported at both sides £6 6
S. & R. with white cane basket £7 7
S. & R. with torpedo enclosed body £8 8
S. & R. with coach-built body £11 10

MISCELLANEOUS.

1911 Brown and Barlow carburetter..... 25/-
Pest Horns, Lucas pattern, very loud and musical 12/6
New Fuller Midget Coil 7/6
Long Handle-bars 4/9
Second-hand P. and H. Lamp, excellent condition and order 6/6
Rubber-studded Genuine 26 x 2in. Avon Tyre 20/-

SCOTT'S,

Victoria Motor House,

POWELL STREET, HALIFAX.

Telephone—433 National.
Telegrams—"SCOTT, Powell Street, Halifax."

MOTOR BICYCLES FOR SALE.

1911 6h.p. Zenith, shop-soiled, delivered Dec.; £65.

1911 3½h.p. Zenith, shop-soiled, delivered Dec.; £50.

1911 2¾h.p. Standard Douglas, shop-soiled; £35.

1911 Standard Ariel, second-hand, grand condition; £28.

1911 2-speed Douglas, clutch model, grand condition; £38.

1911 Second-hand 3½h.p. Zenith, only run 500 miles; £42.

1909 2¾h.p. Douglas, standard model, good condition; £20.—Colmore Depot, 62, High St., Leicester.

1912 Douglas, all models; book now for early delivery.

1912 Zenith, all models; spring deliveries selling fast. Order at once.

1912 New Hudson, the famous 3-speed machine; call and get description.

1912 Clyno, the sensation of the Show; a few left of the spring deliveries.

1912 Matchless, the Tourist Trophy race winners.—Colmore Depot, 62, High St., Leicester.

TRIUMPH, 3h.p., B.B. carburetter, h.b.c., new tyre; £10/10.—Plastow, Grimsby.

TRIUMPH, 1910, F.E., speedometer, lamp, generator, horn, back rest, new condition; £42/10.—Plastow, Grimsby.

HUMBER, 1911, 2-speed, Cowey speedometer, lamp, generator, horn, whistle, sidecar, only ridden 2,300 miles; £45.—Plastow, Grimsby.

HUMBER, 1911, 2-speed, brand new heavy Kempshall tyres; £35.—Plastow, Grimsby.

DOUGLAS, 1911 model E., 2-speed, free engine, handle starting, ridden 2,000 miles; £37/10.—Plastow, Grimsby.

DOUGLAS, 1911 Model D., new condition; £29.—Plastow, Grimsby.

DOUGLAS, 1910 Model D., absolutely perfect; £27.—Plastow, Grimsby.

MINERVA, 3½h.p., 1910, B.B. carburetter, new Palmer cord tyre, perfect order; £21.—Plastow, Grimsby.

1912 Triumphs in stock, Douglas, B.S.A., Bradbury, Rudge, Zenith; offers.—Clifford, Eastwood, Notts. Exchanges.

TRIUMPH, 1910, clutch model, accessories; expert examination; £36.—J., 100, Pershore Rd., Birmingham.

HUMBER, 1911 model, 3½h.p., free engine, 2 speeds, Dunlops, practically new; bargain, £33/10; cost £52—12, Bull Ring, Birmingham.

TRIUMPH, 1911, 3½h.p., Dunlop studded tyres, free engine, as new; bargain, £40.—12, Bull Ring, Birmingham.

1910 Rex, twin-cyl., 5-6h.p., plate clutch, free engine, spring forks and seat, grand sidecar motor.—12, Bull Ring, Birmingham.

REX De Luxe, 1911 model, twin-cyl., 6h.p., free engine, 2 speeds, magneto, drip feed, aluminium footboards, as new; bargain, £40.—Brown's, 12, Bull Ring, Birmingham.

ARNO, 1910 model, 3½h.p., magneto ignition, Druid spring forks, Dunlop studded tyres, h.b.c.; bargain, £19/10.—12, Bull Ring, Birmingham.

N.S.U., 1910 model, 3½h.p., magneto, spring forks, h.b.c.; bargain, £19/10.—Brown's, 12, Bull Ring, Birmingham.

1911 3½h.p. Standard Bradbury, new, numbered; £40, lowest; private owner.—9,633, *The Motor Cycle* Offices, Coventry.

3½h.p. Late 1911 Zenith Gradua, in perfect condition, very little used; what offers?—H. F. Thornley, 32, St. Mary's Crescent, Leamington.

1911 Twin Rex de Luxe, 5-6h.p., free engine, 2 speeds, brand new, just delivered. — Box No. 9,634, *The Motor Cycle* Offices, Coventry.

1911 4½h.p. Precision, h.b.c., Chater-Lea frame, Druid forks, lamp, horn, like new; £28.—Rowe, Station House, Little Bytham, Grantham.

1911 P. and M., sidecar machine, 2¾in. tyres, and extra fittings, not run 2,500 miles, condition as new; £50.—120, Pershore St., Birmingham.

TRIUMPH, 1909, Whittle belt, Cowey, head light and generator, soused tyres, perfect running order; £27/10, bargain.—Stevens, Third Av., Nottingham.

1912 F.E. Triumphs, B.S.A.'s, Rudges, Bradburys, Premiers, for immediate delivery; 1911 new F.E. Rudge, delivered November, offers.—Plastow, Grimsby.

TRIUMPH, clutch model, 1911 engine and gears, all accessories, perfect condition, grand sidecar machine; £35.—41, Spring Rd., Edgbaston, Birmingham.

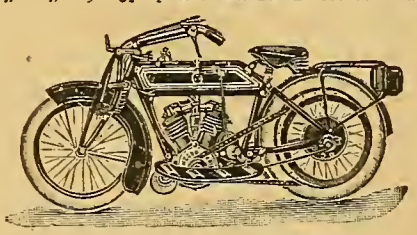
B.S.A., 3½h.p., 1911, variable pulley, Albion free engine, excellent condition; £42; seen by appointment.—Doctor, 19, Montague Rd., Edgbaston, Birmingham.

Collier's Motories,

Westgate, Halifax,

ENGLAND.

Brand New 1911 3½ h.p. Tourist **REX** ..... 43 Gns
" " 1911 2¾ h.p. Two-speed **REX** Junior.. 50 Gns
" " 1911 3½ h.p. Free-engine **REX** ..... 48 Gns
" " 1911 3½ h.p. **REX DE LUXE** ..... 57 Gns



Also 1911 New 2-speed Twin **REX DE LUXE** as per illustration..... 60 Gns.

Discount to Cash Buyers. Liberal Exchanges.

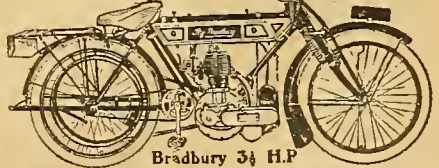
SECOND-HAND MACHINES.

CASH, EXCHANGE, OR EASY PAYMENTS.

1911 3½ h.p. **SINGER**, free engine, new..... £49 0
1911 Twin Two-speed **REX DE LUXE** £47 10
6 h.p. Twin **ZEDEL**, Bosch, B. & B., spring forks £26 10
1910 7 h.p. Twin **REX**, M.O.V. £37 10
FAFNIR, Bosch, h.b.c., Indian red, Druids £19 10
Magneto **TRIUMPH**, spring forks, very smart .. £25 10
Magneto Twin **REX** £19 19
REX, 1910, 3½ h.p., "hot stuff" £29 10
5½ h.p. Two-speed Twin **REX DE LUXE** £29 10
5 h.p. 1910 Twin **REX**, special machine £29 10
4½ h.p. Four-cylinder **F.N.**, magneto £19 19
5½ h.p. Twin **REX**, very smart £16 10
2¾ h.p. **KERRY**, runs well, spring forks £10 10
1910 3½ h.p. T.T. **REX**, very fast £27 10
TRIUMPH, 1908, very good £23 10
2¾ h.p. **DE DION**, spray carburetter £10 10
3 h.p. **HUMBER**, chain drive £7 10
1909 3½ h.p. **REX DE LUXE**, two speeds £32 10
1908 3½ h.p. Magneto **REX**, spring forks £22 10
1907 3½ h.p. Magneto **REX**, spring forks £19 19
3½ h.p. Tourist **REX**, brand new £29 10
1910 Twin **REX DE LUXE**, two speeds £42 10
New Twin **REX**, Cantilever seat ..... 36 Gns
Twin **REX DE LUXE** and sidecar £27 10
3½ h.p. Magneto **MINERVA** £19 10
MOTO-REVE, magneto, Druids £19 19
MOTOSACOCHE Lightweight £14 10
3½ h.p. **MINERVA**, M.O.V. £14 10
F.N. Lightweight, magneto spring forks £19 19
REX, 3½ h.p., spring forks £15 10
1911 3½ h.p. Tourist **REX** £32 10
1911 Twin **REX DE LUXE** £46 10
1911 Single-cylinder Two-speed **REX**, 300 miles .. £42 10
3½ h.p. Two-speed **N.S.U.**, extra good £21 0
3 h.p. **ANTOINE**, h.b. control £12 10
2¾ h.p. **F.N.**, h.b. control, very smart £12 10

A CALL WILL REPAY YOU.

Early deliveries of 1912 Bradbury machines.



Bradbury 3½ H.P.

Exchanges Quoted. Distance no objection.

28 x 2¾ CALMON and CLINCHER Covers 14/6
26 x 2¼ Wired MICHELIN Heavy Tricar Covers .. 17/6
Tubes, all sizes, guaranteed 5/11
24 x 2¼ REFLEX Beaded Covers 12/6
Tubes 5/11

MOTOR BICYCLES FOR SALE.

TRIUMPH, 1910, free engine, exceptional condition; no winter or sidecar use; ridden and well looked after by owner only; price £35, real bargain.—Wheeler, Sparkbrook Co., Coventry.

ZENITH, 1911, 3½h.p., with patent handle starting, also Montgomery sidecar, Lucas lamp, spares; £52; grand combination.—F. J. Evans, 358, Stratford Rd., Birmingham.

HUMBER, 3½h.p., 2-speed model, complete with sidecar, lamp, spares; £42.—F. J. Evans, 358, Stratford Rd., Birmingham.

CLYNOS, 1912 models in stock; also Montgomery, Clyno, and Canadelet sidecars; exchanges and trials arranged.—F. J. Evans, Sparkhill, Birmingham.

HUMBER, 3½h.p., 2-speed, 1911, only been driven 500 miles, condition as new, with lamp, horn, Garner alarm, tool kit etc.: £35.—Apply, No. 9,617, *The Motor Cycle* Offices, Coventry.

TRIUMPH, 1909-10, Bosch, B. and B. variable jet, Palmer cords, lamp, generator, horn, to suit spares, condition like new; £30.—Evans, c/o Brown and Barlow, Westwood Rd., Witton, Birmingham.

1911 Triumph, free engine, condition as new, Dunlops (new back), F.R.S. 58/6 set, spares, £45; also 1911 (June) Rudge-Whitworth, free engine, tyres as new, Rey exhaust whistle, mirror, watch, tools, £42.—Wheeler, Earl St., Coventry.

TRIUMPH, 1911, free engine, speedometer, £45; F.N., 1910, 2-speed, free engine, 2¼h.p., Lead light, accessories, £27/10; Premier, 1911, free engine, new, £50; Minerva, 2¾h.p., new B. and B. carburetter, £13.—Westgate Motor Co., Peterborough.

1911 5h.p. T.T. Matchless, overhead valves, not ridden 300 miles, in excellent order, £42; 1911 3½h.p. Humber, new July, 2-speed gear, free engine, splendid condition, £39; 1910 3½h.p. Triumph, very little used, and in good order; £29.—8, Shakespeare St., Nottingham.

SECOND-HAND Motor Cycles.—We never hang on to second-hands. A quick turnover is what we want, and that is why we offer second-hand motor cycles at pounds below other houses. We have just received delivery of a large number of new 1912 Douglas machines, and have placed these with customers who have exchanged their 1911 and 1910 mounts. You know the saying, "Once a Douglas rider always a Douglas rider." These second-hands are being thoroughly renovated, and will be cleared at bargain prices. 1910 Douglas, from £22. 1911 Douglas, from £27. £25 spent on a Colmore Douglas will prove a fine investment. Let us send you a list of about 60 really good second-hands in stock.—Colmore Depot, 27, Colmore Row, Birmingham.

SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon and Bedford.

MANN, Egerton and Co., Ltd., of Norwich, have the following motor cycles for sale:

3½h.p. 1911 Premier, free engine, only run 1,200 miles; £42/10.

3½h.p. 1910 Triumph, free engine, completely equipped with Cowey speedometer, Lucas head lamp and generator, horn, etc., in excellent order; £40.

ZENITH Bicar, in good running order; £8, or near offer.

1912 Bradbury, free engine model, in stock; first cheque £54/10 secures.—Willmott Bros., Norwich.

1912 Rover, free engine model, £55/5; also 2 h.p. twin Centaur, £42; both in stock.—Willmott Bros., Norwich.

£9.—2¾h.p. Kerry, B. and B., h.b.c., new C.A.V. accumulator, Lyso beat, perfect.—Brett, High St., Brandon.

TRIUMPHS, Bradburys, B.S.A.'s, Humbers, Rudges, Enfields, Premiers, Matchless, from stock.—Lambert, Thetford.

NEW Kerry-Abingdon, 3½h.p., standard model; £45; in stock; pleased to show to likely buyers.—Hitchcock, Elmswell.

DOUGLAS, 1910, engine just returned Douglas, tyres excellent condition; £27.—Robinson's, Green St., Cambridge.

1911 Triumph Standard, 3½h.p. engine, excellent, £39; standard Triumph, 1909 pattern, £29.—Robinson's, Green St., Cambridge.

ZENITH, 1911 pattern, 3½h.p., with lamp, horn, speedometer; £45.—Robinson's, Green St., Cambridge.

1911 Premier, 3½h.p., free engine, under 200 miles; £39.—Robinson's, Green St., Cambridge.

CLYNOS, Clynos, 1912,—2-speed (the sidecar special), in stock, instant delivery; £68/5.—Robinson's, Green St., Cambridge.

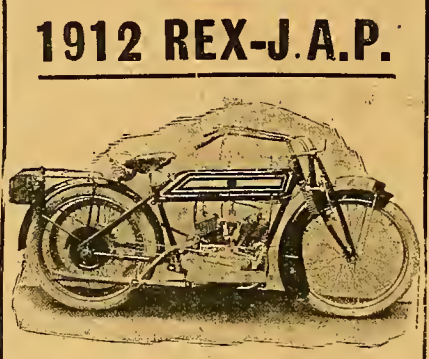
1909 Moto-Reve, recently overhauled, £16; 1911 Moto-Reve £20.—Robinson's, Green St., Cambridge.

1912 Triumph, free engine, in stock; instant delivery £55.—Robinson's, Green St., Cambridge.

1911 Premier, free engine, 3½h.p., quite new, £45; 1911 Vred 3 h.p., quite new, £42.—Robinson's, Green St., Cambridge.

REX-J.A.P.

1912 REX-J.A.P.



— the Motor Cycle of the year

and the machine you should purchase if you require a powerful, reliable, Motor Cycle, easy running, simple to drive, capable of climbing any hill with sidecar and passenger, and with Frame and Tyres which will stand the strain.

THE CLUTCH AND TWO SPEED GEAR, with handle starting, live axle (made under 'Roc' license) is self-contained, of simple construction, and highly efficient, the belt speed being constant. Direct drive on top speed. Correct gear engagement is positive. Either gear may be engaged without passing through the other.

ONLY TWO PEDALS—there can be no mistake in selecting the gear, so that speed changes may be made confidently. Simply "Press the Pedal" and the clutch engages gradually, smoothly, and without shock. The machine can be started on any hill. It gives you perfect control in traffic, and enables you to stop and start at will without leaving the saddle. It is the only perfect, reliable clutch and two-speed gear for Sidecar work, and has been fully tested and proved.

We shall be pleased to post you Catalogue describing the many advantages of this unique machine.

AGENTS—Write for Contract terms.

COLONIAL DEALERS—The Rex-J.A.P. Colonial models will be of interest to **YOU.**

THE PREMIER MOTOR CO., LTD.,
Aston Road,
BIRMINGHAM.

Telegrams: "Primus, Birmingham."
Telephone: Central 4310.

REX-J.A.P.

MOTOR BICYCLES FOR SALE.

B.S.A., 3½h.p., new September, 1911, unscratched and untarnished, very little ridden; £44/10.—Huwat, Southwold.

PREMIER, 3½h.p. twin, late 1910, not ridden last year or this, perfect order, tyres as new; £32.—41, High St., Southwold.

F.N., 1910, 2¼h.p., 2-speed, 1911 pattern cylinder, lamp horn, spares, excellent condition, carefully used.—Shepperson, Keyworth, Benwick, March.

1909 Triumph, recently overhauled, new piston, studded tyres, Whittle, lamp, horn, etc.; perfect order; £28.—Booker, Wereham, Stoke Ferry.

T. H. NICE and Co., Bury St. Edmunds, etc., for immediate delivery Humbers, New Hudsons, Premiers, B.S.A.'s; exceptional allowances for old machines.

B.S.A.! B.S.A.! B.S.A.! — Early deliveries of all models of these celebrated machines; second-hand machines part payment.—A. F. Garnham and Co., sole agents Ipswich.

1912 Triumph, B.S.A., Rudge, Bradbury in stock; exchanges. 1911 free engine Triumph, new, £48; 1911 free engine Triumph, horn, lamp, mirror, £45; 1911 Tourist Trophy Triumph, horn, lamp, mirror, £42; 1910 lightweight Enfield, £18; 1911 8h.p. Bat and sidecar, 2-speed, horn, speedometer, nearly new, £63.—Parker and Son, St. Ives, Hunts. Instalments taken.

SECTION VI.

Worcestershire, Hereford hire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SINGER, 1911, 2h.p., perfect condition throughout; £26, or near offer.—Saunders, Usk.

HUMBER Lightweight, 2¼h.p., in perfect order; £25.—W. T. Graham, Norton Barracks, Worcester.

HUMBER, 1911, 3½h.p., 2-speed, perfect throughout; £37/10.—Seen, Marriotts Motor House, Hereford.

N.S.U. Lightweight, 1¾h.p., Bosch, 1,000 miles; £15/15, or exchange 3½h.p.—Mowbray Joyce, Pontypridd.

TRIUMPH, 1912, free engine, arrived to-day; instant delivery from stock.—Tilley, Motors, Ledbury, Herefordshire.

B.S.A., 1911, 3½h.p., Albion clutch, lamp, horn, Garner, perfect condition; 38 guineas.—Williams, Springfield, Pontypridd.

FOR Earliest Deliveries of Triumph, Humber, Enfields, Singer, Premier, apply at once, Griffiths, Cycle Emporium, Llanelly.

1911½ Bradbury, 3½h.p., excellent condition; best cash offer, or exchange 1912 F.E. Triumph.—L. W. Thackway, Eign St., Hereford.

P. AND M., 3½h.p., 2-speed, done 4,600 miles, splendid condition, lately overhauled, new Kempshall tyre, spares, Cowey speedometer; £36.—Oakes, Pershore.

BRADBURY, 1910¾, condition like new, lately overhauled, new Palmer tyre, spares, very fast; £30.—Oakes, Pershore.

BRADBURY, 3½h.p., standard 1911, only ridden 400 miles, as new; cost £48/15, sell £38, a bargain.—On view, W. Pugh, 12, Lion St., Hay, Hereford.

MINERVA, 2¾h.p., h.b.c. magneto, adjustable pulley, new tyres, Binks carburetter; Quadrant engine, 3h.p., first-class condition; Nilmelior coil, 3/-.—Bowling, chemist, Pembroke Dock.

1906 Triumph, 3½h.p., unridden since overhauling at the cost of £10, including new Simms magneto, B and B carburetter, footrests, handle-bar, stand, etc., engine like new, Wilride belt, Cinchers tyres; bargain, £22.—Collier, 52, Somerset St., Abertillery.

IVOR ROBERTS, Oxford St., Swansea.—1910 free engine 3½h.p. Triumph £37/10; 1910 twin Enfield, 2¼h.p., not ridden 2,000 miles, £24; 1910 twin Enfield, 2¼h.p., £18; 1910 2¼h.p. Moto-Reve lightweight, £21/10; 1¾h.p. Minerva £3; 1911 2¼h.p. twin Enfield, 2-speed, free engine, chain drive, not ridden 1,000 miles, £40; 2¾h.p. Clement-Garrard, good condition, £5; 1910 Viudoo Special, 2-speed, free engine, 7h.p., with Fulford radial wheel sidecar, £55; in stock, 1912 2-speed free engine 2¾h.p. twin Enfield, 1912 Rudge, 1912 free engine B.S.A.

SECTION VII.

Gloucester, Oxford, Buckingham, Berks Wilts, and Hants, and Channel Islands.

2¾h.p. Enfield, new July; £45.—McBride, Lucknam, Chippenham.

DOUGLAS, 1911, 2-speed, perfect condition; £35.—Wasley, 9, Victoria St., Bristol.

1911 New Bradburys, standard and 2-speed models; bargain prices, cash offers.—Ginger, Motors, Banbury.

1910 Triumph, clutch model, perfect, and good condition; £36, or nearest offer.—3, Alma Court, Newbury.

DOUGLAS, 1910, little used, new tyre, etc., splendid condition; £27; approval.—26, London Rd., Gloucester.

MOTOR BICYCLES FOR SALE.

5h.p. Twin Viudec, special Truffault spring forks, magneto, two new tyres new Whittle belt, just overhauled; £25.—Below.

2¼h.p. Kerry, spring forks, B. and B. carburetter, 26in wheels, Clincher tyres, nearly new Lyso belt, footrests, stand, 2 brakes, low build, as new; £14.—Apply, The Warminster Motor Co., Ltd., Warminster, Wilts.

1911 T.T. Triumph, splendid condition, very little used, lamp, horn, spare belt and carrier; price £38.—E. A. Davis, Ringwood, Hants.

DOUGLAS, 2½h.p., 2-speed gear, footboards, and starting handle, 1911 model; £35.—T. Baker and Sons, Friar St., Reading.

DOUGLAS, 2½h.p., 1910 model; £25.—T. Baker and Sons, Friar St., Reading.

DOUGLAS, 2½h.p., 1911 model; £28.—T. Baker and Sons, Friar St., Reading.

TRIUMPH, 3½h.p., late 1909 model, all accessories; £30.—T. Baker and Sons, Reading.

DOUGLAS, 2½h.p., 1911 model; £32.—T. Baker and Sons, Friar St., Reading.

F.N. Lightweight, 2-speed, free engine; £28.—T. Baker and Sons, Friar St., Reading.

PREMIER, 3½h.p., 1912 model, with 1911 engine fitted, splendid order and condition; £27/10.—T. Baker and Sons, Reading.

2¾h.p. Douglas, late 1910 Whittle, 2 extra tyres, fine hill-climber; £26; wanting 2-seater.—G.S., 48, Lind St., Portsmouth.

2¾h.p. Minerva-Ariel, new tyres and tubes, engine rebushed, low built; £6/10 bargain.—Fenton, Palmers Stores, Cheltenham.

1912 Triumph, free engine, not unpacked; also second-hand Quadrant, 3½h.p., Bosch magneto, good order.—Merrett, Corsham.

5-6h.p. F.N., new condition throughout, magneto, climb anything, very powerful; bargain, £19.—119, Haviland Rd., Boarnemouth.

B.S.A., 1911, standard, only done 1,800 miles, complete with lamp, horn, etc.; £38.—Frank Belcher, Marston St. Laurence, Banbury.

RUDGE and Bradbury Models, for prompt delivery; trial runs; exchanges entertained; send for lists.—Agent, Barnes, Colnbrook, Bucks.

IMMEDIATE Delivery from stock 1912 3½h.p. B.S.A., free engine, £56/10; 1912 2¾h.p. Singer, £39.—Davenport Vernon and Co., High Wycombe.

2¼h.p. Magneto Brown, very low, spring forks, Amac, nearly new tyres, rebored, enamelled, and plated; £22.—Dale, Pound St., Warminster, Wilts.

1911 Douglas, absolutely as new, only used week-ends; owner going abroad; any trial; £28, or near offer.—Gordon Judd, Barton Stacey, Hants.

TRIUMPH, 1910, July, done 2,557 miles, variable pulley; £32 for quick sale, or sidecar £35/10; no offers.—Jacoo, Noel Cottage, Bletchley, Bucks.

3¼h.p. Chain Drive Humber, in excellent condition, just rebushed, h.b.c., XL All spring forks, good tyres, and greatly improved; £9.—Sharps, Bradford-on-Avon.

EYLES and Eyles, Motor Cycle Garage, Oxford.—Bargains in second-hand machines; Indians (single and twin, free engine), Douglas, B.S.A., Premier, Humber (2-speed).

EYLES and Eyles, Motor Cycle Garage, Oxford.—Latest models Bat, B.S.A., Premier, and Ivy Precision motor cycles; cane and coach-built sidecars in stock.

1909 2h.p. Twin Moto-Reve, magneto, h.b.c., Whittle belt, adjustable pulley, tyres as new, in perfect running order; must sell; £16/16.—Burnett, Burnett Tyre Co., Melksham.

1914 Triumph, Mabon free engine, Lucas 50/- lamp, ridden under 900 miles, accessories and spares, practically unscratched and faultless; 38 guineas.—T. H. Bennett, Portsmouth Waterworks.

RUDGE-WHITWORTH, 3½h.p., 1910 model, new March, only slight use, perfect condition, Lucas lamp, all spares, tools, new Dunlop spare tyre; £40, or offer.—Orr Ewing, Christ Church, Oxford.

2¾h.p. Douglas, perfect running order, tyres good, butted tubes, complete accessories and spares, including belt, tyre, and 2 tubes; 16 guineas; wanted, sidecar machine.—Gosnell, High School, Melksham.

ENFIELD, 2½h.p., 1911, free engine, 2-speed, chain drive, driving chain completely encased, practically new, new November, run 350 miles; owner getting sidecar model; £40.—R., Basdale, Alexandra Rd., Andover.

SECOND-HAND Motor Cycles.—We have the largest stock in the county, comprising passenger, solo, and lightweight machines, all in excellent condition; list free per return. — Morris, Motor Cycle Garage, Oxford.

1912 Models, all makes for earliest delivery, cash or easy payments; book your machine now for certain Easter delivery and avoid disappointments.—Morris, Motor Cycle Garage, Oxford.

1909½ Twin Moto-Reve, just been re-enamelled, overhauled, 1912 B. and B., Lycetts saddle, Watawata, P. and H. head light (new), mirror, tools, etc., complete, perfect condition; sacrifice, £23/10; no offers.—Chas. Siggs, Wolverton, Bucks.

The Famous Garner M.C. Alarm.

Nickel Plated **12/6**

Black Plated **13/6**

Postage 5d. extra



Stocked by all best agents and factors in the kingdom.

Sole Makers & Patentees—

HENRY GARNER, Ltd.,

Moseley Motor Works,

BIRMINGHAM.

'Phones: South, 3 and 4.

Telegrams: "Dependable, Moseley."

Birmingham Showrooms:

NEW STREET (opposite G.P.O.)

MOTOR BICYCLES FOR SALE.

IN Stock, one F.E. 3½h.p. Triumph, one F.E. 3½h.p. Rudge, one F.E. 3½h.p. Rudge, one 2¼h.p. L.W. Premier, all four 1911 models; also one new 1911 3½h.p. Lincoln Elk, one second-hand 2¼h.p. twin Moto-Reve; what offers?—Randall, Andover.

1912 Matchless Motors; early deliveries 6h.p. clutch model; 60 guineas; 1912 Hazlewood motors from stock, 3 speeds, free engine, 47 guineas; catalogues, particulars free; 1911 Rudge, July, 320 miles, as new, spare valves, tools, £40.—Balfours, Motor Works, Banbury.

SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

EDMUNDS and Wadden, Weybridge, Surrey.

REAL Bargains.

1911 F.E. Triumphs at £35, £40, £42, and £44.

1912 Clutch Triumphs in stock; £55.

1912 F.E. Rudge, new; £55.

1912 New Hudson, 3-speed, free engine; 57 guineas.

1908 Triumph, 2-speed, £25; 1910 Triumph, £32.

1911 Indian, F.E., 5h.p.; £40.

40 More Real Good Mounts. Must sell.

TELEPHONE: 343 Weybridge. — Edmunds and Wadden.

B.S.A. 1912 2-speed Models in stock.—Rivett, Leytonstone.

B.S.A. 1912 Free Engine Models in stock.—Rivett, Leytonstone.

B.S.A. 1912 Fixed Engine Models in stock.—Rivett, Leytonstone.

MOTOR Supplies.—Up-to-date stock at Rivett's, 236, High Rd., Leytonstone.

F.N., 4-cyl., 1911 model, perfect order; £30.—Bunting, Wealdstone.

F.N., 4-cyl., 1910 model; another bargain, £25.—Bunting, Wealdstone.

LIGHTWEIGHT Humber, 1911 doctor's machine; 25 guineas.—Banting, Wealdstone.

ARIEL, 3½h.p., variable gear, grand sidecar machine; £37/10.—Bunting, Wealdstone.

ARNO Depot.—3½h.p. 1912 T.T. model, in stock; £45; old machine part payment.

ARNO Depot.—3½h.p. 1912 Tourist, in stock; £45; gold medal, 24 hours' M.C.C. trials.

ARNO Depot.—2¼h.p., in stock, 1912 model, gold medal 24 hours' M.C.C.; 39 guineas.

ARNO Depot.—2¼h.p., in stock, splendid machine for town use; 36 guineas.

ARNO Depot.—Any of above machines may be purchased on deferred payment system.

ARNO Depot.—5½h.p. twin Rex, magneto, Roc, free engine; taken in part payment for our 1912 Arno; £23/10.

ARNO Depot.—5h.p. twin V.S., magneto, and sidecar, Whittle belt, splendid condition; taken in part payment 1912 Arno; £30.

ARNO Depot.—1911 Triumph, free engine, run about 600 miles, as new; £45.

ARNO Depot.—Sidecars from £4/17/6, complete with tyre and tube.

ARNO Depot.—Wholesale and Retail Agents, 2, The Parade, Kilburn, Maida Vale, N.W.

QUADRANTS.—16 distinct models for 1912.—Apply, Cass's (see below).

CASS'S Motor Mart, 5, Warren St., Euston Rd., W., sole agents for the famous Quadrant motor cycles; catalogue upon application; exchanges entertained; book at once for delivery before Easter.

QUADRANTS 1912 Quadrants, with Armstrong 3-speed gear, are the cheapest and best 4½h.p. machines on the market for sidecar work.—Apply, Cass's (see above).

MOTOSACOCHE, 2¼h.p., 1912, new, variable gear; immediate delivery; £40.—Cass's (see below).

BRADBURY, 3½h.p., 1911, with new sidecar; machine in excellent condition; £45.—Cass's (see below).

REX de Luxe, 5h.p., new sidecar, speedometer, lamp, accessories, just overhauled; £27.—Cass's Motor below).

TORPEDO, brand new, 2½h.p., Amac carburetter, Precision engine; £37.—Cass's (see below).

TRIUMPH, 3½h.p., 2-speed and free engine, h.b.c., accessories, just overhauled; £27.—Cass's Motor Mart, 5, Warren St., Euston Rd., W. (opposite Warren St. Tube Station). Tel.: 3624 Mayfair.

MOTOR BICYCLES FOR SALE.

EAGLES.—Rex, 3½h.p., magneto, dropped frame, spring forks, h.b.c., nne order; £18/10.

EAGLES.—Bradbury, 1911, standard model, nearly new, with all accessories; £36.

EAGLES—N.S.U., 3h.p., single-cyl., enamelled cream, new last Oct., Eisemann magneto, 1911 spring forks, low frame; £24.

EAGLES—N S U., 2¼h.p., single-cyl., new last Oct., only ridden 200 miles, Bosch magneto, latest spring frame, 2 speeds, and free engine; £35, as new.

EAGLES—F.N., 4-cyl., 5-6h.p., 1911 model, as new, latest improvements, automatic carburetter, drip lubrication; £38; exchange lower power.

EAGLES.—Triumph, 1910, free engine model, had little use, equal to new; £39/10.

EAGLES.—N.S.U., 3½h.p. model de luxe, 1910, Bosch magneto, 2 speeds, free engine, only run 1,500 miles, speedometer, etc.; £34/10.

EAGLES.—Motosacoche lightweight, Hellesen ignition, Whittle belt, fine condition; bargain, £9/15.

EAGLES and Co., High St., Acton.—N.S.U. West London district agency. Early delivery of 1912 models; liberal allowances for machines in part payment. Tel.; 556 Chiswick.

CROYDON.—1912 Enfields in stock; no waiting.—Call and see the agents, 86, South End, Croydon.

CROYDON.—1912 Hoharts, all models, immediate delivery.—Agents, 86, South End, Croydon.

CROYDON.—1912 Levis, 2-stroke; a trial run will convince; immediate delivery.—86, South End, Croydon

CROYDON.—Send for lists of second-hand machines; exchanges entertained.—The Croydon Motor Mart, 86, South End, Croydon. Tel.: P.O. 797.

P. and M., 1912, still in crate; what offers over £60? —J., 58, Portland Place, W.

FAFNIR, 3h.p., Lyso, lamp, good tyres; £10, or near offer.—Thompson, Argent St., Grays.

2½h.p. Peugeot; exchange higher power; give cash.—Young, 241, High St., Berkhamsted.

SCOTT, 1911, little used, perfect condition; £46; bought car.—204, High Rd., Wood Green, N.

3½h.p. N.S.U., Amac, h.b.c., fast and powerful; sacrifice, £12.—Speechley, 45, Church Rd., Acton.

ROVERS, 3-speed, clutch or fixed engine, in stock —Chatwin and Hartley, King St., Richmond.

MINERVA, 2¼h.p., perfect, splendid running order, £6, or offer.—Gough, 81, Endwell Rd., Brockley.

DOUGLAS, 1910, in excellent condition, spare tyre, accessories; £25.—Apply, 28, Lisson Grove, N.W

2¾h.p. Enfield, hardly used, lamp, tools, etc., perfect throughout; offers.—124, Romford Rd., Stratford.

3½h.p. Minerva, low built, perfect condition; £10/10 quick sale.—49, Shrublands Av., Berkhamsted.

ARIELS, variable gear, and T.T. models; immediate delivery.—Chatwin and Hartley, King St., Richmond

ZENITHS, 3½ and 6h.p. models in stock; exchanges arranged.—Storey's, 1, Endell St., Long Acre, W.C.

SPECIAL T.T. Brown, very fast, B. and B., Druids, Hutchinson, perfect; £15.—262, Hornsey Rd., N.

1912 Triumphs, in stock, clutch models; £55.—F. Spearman, Bridge Street Garage, Bishop's Stortford.

1912 Rudge-Whitworth, in stock, clutch model; £55. —F. Spearman, Bridge Street Garage, Bishop's Stortford.

1912 New Hudsons, in stock, 2¼h.p. lightweight, 47 guineas; 3½h.p., 57 guineas; all fitted with free engine and 3-speed gear.—F. Spearman, Bridge Street Garage, Bishop's Stortford

HUMBER, 2¾h.p. 1912 twin, used once, £38; 3½h.p 2-speeder, £52/10, or exchange.—French, Newhaven, Sussex.

NEW Hudsons, Triumphs, Bradhurys; order now for early deliveries.—Godfrees, 124, Romford Rd., Stratford.

3h.p. Triumph, magneto, good tyres, standard model, excellent order; £16/10.—29, East St., Barking

3½h.p. 1909 Triumph, magneto, h.b.c., spring forks, good tyres, excellent order; £27.—29, East St., Barking.

3½h.p. 1910 Triumph, condition perfect, lamp, horn; sacrifice, £34.—54, Wellington Rd., St. John's Wood.

3½h.p. Minerva (1909), £19; 3½h.p. Singer, £13; magnetos, both overhauled.—Clifford Cant, Braiswick, Colchester.

1910 Humber, 3½h.p., 2-speed, free engine, splendid condition; £28.—Salter, 20, Nelson St., Greenwich, S.E.

LATE 1910 Kerry-Abingdon, perfect condition, lamp, and spares, new Dunlop tyres; £25.—Wheaton, Leatherhead.

TRIUMPH, 1908, splendid condition, accessories; bargain, £28. — Seen at Davis's Garage, Tooting Junction, S.W.

TRIUMPH, 1909, magneto, lamp, horn, spare valves, etc., new condition; £30.—70, Askew Rd., Shepherd's Bush.

ESTABLISHED 20 YEARS "IN THE HEART OF THE TRADE"



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ENFIELD

Walsall:

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ZENITH
CLYNO

Liverpool:

CHATER-LEA
BAT
DOUGLAS

Manchester:

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CLYNO
NEW HUDSON
DOUGLAS

COLMORE DEPOT,

35, Colmore Row, BIRMINGHAM.

And at

MANCHESTER: 261, Deansgate.
LEICESTER: 62, High Street.
LIVERPOOL: 18, Renshaw Street.

MOTOR BICYCLES FOR SALE.

WANDSWORTH.—Two Brand New F.N. Latest 4-cyls., cost £52/10, full guarantee; £46 each.—Below.

WANDSWORTH.—Brand New Chater-Lea-Jap, 8h.p., m.o.v., magneto, written guarantee; great sacrifice, £47/10.—Below.

WANDSWORTH.—Zenith-Gradua, latest 1911, 3½-4h.p. m.o.v., J.A.P., magneto, like new; cheap, 38 guineas.—Below.

WANDSWORTH.—Humber, latest 1911, 3½h.p., magneto, 2 speeds, handle starting, as new; £38/10.—Below.

WANDSWORTH.—F.N., latest 1911 model, 4h.p., magneto, drip feed, nearly new; £36.—Below.

WANDSWORTH.—V.S., 5-6h.p., twin, magneto, Truffault forks, guaranteed, nearly new, unscratched; bargain, £29/15.—Below.

WANDSWORTH.—Triumph, late 1909, 3½h.p., m.o.v., magneto, h.b.c., good order; special, £25.—Below.

WANDSWORTH.—Rex de Luxe, latest 1909, 5-6h.p., twin, magneto, runs well; extra cheap, £22/10.—Below.

WANDSWORTH.—Bat, 3½h.p., Roc 2 speeds; £12/15; exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth.

REX 5-7h.p. Twin, magneto, faultless condition; £25; would entertain cycle in part.—27, Princes Sq., Kennington.

5-6h.p. Brough, Peugeot, Chater-Lea 6, Bosch, Barlow, footboards; £24; with Mabon £26.—French, Newhaven, Sussex.

TRIUMPH, 1907-8, 3½h.p., splendid condition, £3 spent, Watawata, accessories; £24/10.—4, Gutter Lane, Cheapside.

3h.p. Kerry Motor Cycle, low machine, vertical engine splendid condition; £12.—Murray, 37a, Church St., Hatton Garden.

4¼h.p. Fafnir, first-class condition, £20; 4h.p. Antoine, £10/10; Mabon clutch, 30/-.—35, Tasman Rd., Stockwell.

TRIUMPHS, Bradburys, Singers, Rudges, and others; exchanges; send us your enquiry.—Storey's, 1, Endell St., W.C.

MINERVA, 3½h.p., 26in. wheels, new Hellesen, good running order; £11.—Williams, 43, Poynders Rd., Clapham 'Phone.

TRIUMPH, 3½h.p., late 1907, magneto, splendid condition; nearest 20 guineas.—Moyse, 15, Barlby Rd., North Kensington.

2½h.p. J.A.P. Motor Cycle for sale, taken for debt, needs slight attention; £8, or offer.—R.J.W., 199, Church St., Deptford.

INDIAN, twin, 5-6h.p., red, perfect, very powerful; 39 guineas; exchange Triumph.—2, Lyall Mews, Eaton Sq., London.

ALCYON, twin Zedel, 65×75 magneto, spring forks, good 2¼ Dunlops; £16.—"Alcyon," 14, Lansdowne Gardens, London, S.W.

1910 3½h.p. N.S.U., magneto, new tyres, belt, just overhauled, and perfect; £15. — Wallis, Abbey Hotel, Saffron Walden.

DOUGLAS, late 1909, 2-speed, free engine, as new, marvel of comfort, accessories; bargain.—S., 20, Clavering Av., Barnes.

1911 Standard Triumph, everything as new; any examination; little used; £38.—Brady, 3, Allen St., Canonbury, London.

55/-.—2¼h.p. Minerva, in good order (wants new front tyre); owner going away.—The Beeches, Florence Rd., Sanderstead.

1912 Zenith-Gradua, latest 3½h.p., not ridden a yard; going abroad unexpectedly; sacrifice, £51.—Landan, 43, Harrow Rd., W.

IF You Want a really good 1910 Triumph, call at the Metropolitan Mechanists' Co., Ltd., 248, Bishopsgate, London, E.C.

PREMIER, 1911, 3½h.p., 2-speed hub gear, new cover to back wheel, good condition.—Apply, D. Osmond, 233, Essex Rd., Islington, N.

REX, 3½h.p., 1911 Amac, Palmer cords, new back, accessories, perfect running order; £12. — Ringewell, Mildmay Rd., Romford.

IN Stock, fixed Rover, free engine Rover, free engine Singer, 3½h.p. Zenith; who wants?—Walbro Engineering Co., Saffron Walden.

ROC-PEUGEOT, 5h.p., 1910, 2-speed, Druids, Bosch, B. and B., Whittle, F.R.S. lamp; £30.—Garaged, Mecks, Archway Rd., Highgate.

P. and M., 1909, mileage 1,500, in excellent condition, speedometer, etc.; £38.—Pinder, 1, Chaffinch Rd., Beckenham. Appointment.

MOTO-REVE, 1910, 2¾h.p., twin, Kempshall, Continental perfect condition; £20/10.—33, Dorset Rd., West Green Rd., Tottenham.

F.N., 2h.p., Michelin tyres, new tube and belt, thorough running order; seen any time; £8/10.—161, Church St., Kensington, W.

TRIUMPH, 3½h.p., 1911, perfect condition, very little used, lamp, generator, spare tyre, etc.; £42.—Byron, 20, Pembridge Rd., Notting Hill Gate, London, W.

THE MOTOR CYCLE

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ADDRESS: 20, TUDOR STREET, LONDON, E.C.

Free Engines in Important Trials.

ONE of the regulations for the Auto Cycle Union one-day trial reads as follows: "To qualify for a first-class certificate the machine must be equipped with either a free engine or variable gear." This rule has caused some heart-burning, but those who think they have a grievance against the Auto Cycle Union on this score should bear in mind that the A.C.U. trials are not run as sporting events, but for the general improvement of motor cycles. The regulations for the A.C.U. one-day and other trials were threshed out at joint conferences between members of the trade and the A.C.U. Competitions Committee, and the above rule is the outcome of these deliberations. Those who find themselves barred from the A.C.U. trials because they own machines that are not fitted with either variable gear or free engine should console themselves with the reflection that, although they are prevented from taking part in the important A.C.U. events, there will be a great many club competitions open to them during the year in which they will find plenty of opportunity to display their sporting instincts which inspire them with a desire to oppose their single-geared clutchless mounts against those provided with change-speed gears and free engines. The grumblers should also remember that the rules are framed to assist the improvement of the very mounts which they will probably purchase at a later date. Those who complain of the regulation say that with pedal assistance they could climb all the test hills. In our opinion, however, the A.C.U. is quite right to prohibit pedalling, as the public wants to see and hear of what the engines can do, and is not particularly interested in the muscular efforts of the rider.

L.G.B. and the Cut-out.

THE announcement that the new regulation with regard to cut-outs does not extend to motor cycles can only be interpreted as a somewhat lenient view taken by the Local Government Board, and a decision which has doubtless been arrived at as the result of the tests, recently described in these pages, whereby the L.G.B. officials had proof that, if cut-outs were absolutely prohibited on many makes of motor cycles, it would seriously hamper the industry at a most inopportune time. Now while the Board state that they have not found it possible to deal with the use of cut-outs in connection with motor cycles in the present order, they are considering the practicability of requiring motor cycles to be fitted in every case with a suitable silencer for reducing noise, a source of annoyance to others. We feel confident that the L.G.B. have waived the question of prohibiting cut-outs on motor cycles only for a time, as they thoughtfully decline to interfere with manufacturers' designs at this juncture. The absolute prohibition of cut-outs would have meant a serious loss to manufacturers at this season of the year when deliveries are being urgently hurried forward, but it is certain that they will insist upon efficient silencers being fitted in the future. The exemption of motor cycles, therefore, should not be taken too lightly, and increased efforts should be made to reduce noise as much as possible. With the cut-out closed there are several makes of motor cycles which run quite silently; therefore if the L.G.B. could see their way to allow a reasonably sized cut-out to be fitted on the silencer only and to institute proceedings against riders who make themselves a nuisance by indiscriminate use of the cut-out, their action would be welcomed.



ONE day last week we made our annual pilgrimage to Stoneleigh Hill, the testing ground of Coventry motor cycle manufacturers, and found the hill literally alive with testers on new pattern motor cycles. Never have we known such an animated scene, and it is just a further instance of the wonderfully increased activity in the motor cycle world. Similarly, just as the pronounced increase in the number of motor cycles on the road is apparent, so is the marked increase in efficiency of the present-day engine—for that unit, after all, is the heart and soul of a motor cycle. First of all one of our photographers demanded the attentions of the group, which, by the way, was constantly increasing in numbers as one by one the testers arrived to carry out their daily task. What a jolly lot of fellows these testers are! Good natured chaff is their usual greeting, and not only the riders have nicknames but their machines have some weird pseudonym typical of a peculiarity they may possess—none too complimentary to the makers in some instances, for the tester is a wily bird.

The Ignominy of Knocking.

Should some unfortunate tester muddle his ignition or air lever and cause his engine to omit a knock, it is immediately echoed and reverberated down the hill, and in bad cases the defaulting tester has no peace the rest of that day.

On the occasion of our visit there were Humbers, Rexes, Triumphs, Premiers, Rudges, Hazlewoods, Rovers, and Singers being tested up the hill, and what a pace some of them attained on the 1 in 9 gradient! Of course, 1 in 9 is nothing to a motor cycle nowadays; but Stoneleigh happens to be the steepest hill within easy reach of Coventry, so other methods than a mere rush up the gradient have to be resorted to. Some



Four passengers on a 6 h.p. Rex sidotte, which took the load up the hill with ease.

A Morning with the Testers.—

makers, for instance, specify that the machine shall climb the hill from practically a standing start on a higher gear ratio than standard, others demand that the machine shall take two riders up the hill at full speed, and we watched with interest the machines swoop up the hill one by one till it got monotonous. After watching a 3½ h.p. Rover and Triumph take an extra rider up, which performance was easily overshadowed by a 2½ h.p. lightweight Singer which followed their example, we suggested that someone should try three on the machine. W. F. Newsome was the first volunteer, and the spectators thought he had done something wonderful when he succeeded at the first attempt. His pace at the top we estimated at 22 m.p.h., which led us to suggest

Still Another Passenger.

But the difficulty was how to pack him on the machine. Young Crawley first clambered on to the handle-bars, but in this position the driver was afraid of the right angle bend at the hill foot. Eventually, by squeezing two on to the saddle, Crawley was crammed on to the carrier tail, and the ascent commenced. To everybody's intense surprise and admiration the machine with its human freight of 37 stones sailed up at a good bat, the engine never once raising signs of distress. We measured the gear ratio and proved it to be 5⅛ to 1, so what would a 1912 Triumph do with the limit ratio of 6¾ to 1? Next F. H. Ayres, an ambitious rider of a low geared 2½ h.p. Singer, tried three up, but after a brave show he stopped on the steepest section, which is 1 in 8.9.

Meanwhile, a couple of twin Rex machines put in an appearance, and what a fine engine the 6 h.p. m.o.i.v. with side by side valves really is. A soothing purr from the long exhaust pipe, and that is all one hears as it regularly sweeps over Stoneleigh with a sidecar and passenger on top gear of 4 to 1. The limit of its capabilities was not reached when it climbed the hill with four up on a gear of 8 to 1.



Seven different makes of motor cycles at Stoneleigh last week. Left to right: Hazlewood, Rover, Triumph, Humber, Rudge, Premier, and Singer. The Rex arrived later.



A Standard 3½ n.p. free engine Trinmph climbing Stoneleigh with four up.

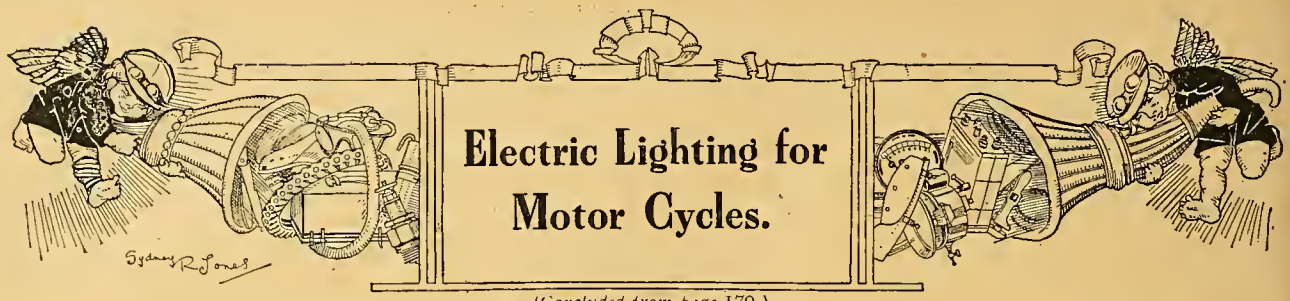
This was the first occasion we had seen the three-speed Hazlewood perform on a hill. One with a 2¾ h.p. engine made no mistake about the way it went up on the middle gear even with an extra passenger on the carrier. The Rudge, Premier, and Humber riders were content to make the usual test ascents without attempting anything sensational.

After witnessing the single-geared clutch machines restart on the steepest section with an extra passenger on the carrier we left with a firm conviction that the general all-round improvement in 1912 engines is more real than some would have us believe. Progress is slow but sure, and the commencement of every year marks a decided step toward the attainment of the ideal motor cycle.

L.G.B. AND THE SILENCER CUT-OUT.

Official Notification.

WITH reference to the paragraph published last week on the prohibition of cut-outs on motor cars, the Local Government Board point out in a circular letter to *The Motor Cycle* announcing the new regulations, that, although "the Board have not found it possible to deal with the use of cut-outs or similar contrivances in connection with motor cycles in the present order, they are considering the practicability of requiring motor cycles, when used on the public highways, to be provided in every case with a suitable or sufficient silencer for reducing the noise commonly caused by these vehicles."



Electric Lighting for Motor Cycles.

(*Concluded from page* 179.)

The Voltalite.

The Voltalite, whilst being a much more modest instrument than the one described above, is, nevertheless, an extremely practical and simple little device, which is produced at so low a figure as to bring it well within the reach of all. The drawing of the complete dynamo, which together with the head lamp forms the complete installation, is given in fig. 6. It consists of a pair of specially shaped permanent magnets between the pole-pieces of which runs an H section armature, very similar to that of a magneto. The whole is encased in an aluminium dirt and dust-proof case, and the armature runs on self-contained ball bearings which are carried in gunmetal end pieces. The armature-shaft terminates in a rubber-tyred friction wheel, by which the dynamo is driven from the rim of either the front or back wheel of the machine, and for this purpose special brackets are provided for attachment of the device into whichever position is found most convenient. Wires are taken direct from the dynamo to the lamp bulb, no automatic switches being in this case necessary.

The reason of this is that, owing to the use of permanent magnets the magnetic field in which the armature revolves remains to all intents and purposes absolutely constant in intensity, and hence the voltage of the current generated does not rise with an increase in armature speed; but, on the other hand, the amount of current produced, that is to say, the ampèrage, does increase, but as no accumulator is used it is only necessary to provide a lamp capable of taking the maximum amount of current generated without damage.

Owing to the large size of the armature and the constancy of the fields a sufficient current to light the bulb is produced at quite a low speed; in fact, quite a practical light is produced at about walking pace. The maximum light is given at about eight miles per hour, after which it remains constant up to almost any speed. Fig 7 illustrates the armature of the Voltalite dynamo, and shows also the neat spring collector brush which is fitted to one end of the armature spindle, and communicates with a screw at the end of the ball bearing housing (see fig. 6). This screw is mounted on a cone which is insulated from the body of the machine by a fibre ring.

Two rubber driving wheels are provided, one having a vulcanised tread of special canvas for use in wet weather in order to prevent the pulley slipping on the rim. The rubber wheels can be changed in about ten seconds, as it is only a case of slipping one off and the other on.

The only switch used in the circuit is a mechanical one, which takes the rubber wheel out of contact with the rim and so throws the Voltalite completely out of action. The device is mounted on a special gunmetal bracket (see fig. 8), which is clipped to one of the tubes of the frame. This, it will be seen, is slotted in order to allow a certain amount of latitude of position so as to get the driving pulley in the correct position relative to the wheel rim. The dynamo is carried in a bracket forming a sort of trunnion, which allows the dynamo to be swivelled to and from the wheel of the motor cycle rim, and works on the dead centre principle so that the pulley can be thrown off or on as desired. In one position a spring, clearly shown in fig. 8, holds the pulley on to the rim and in the other holds it away from it.

The head lamp and its bracket are shown in fig. 9, and although light in weight, are strongly made of brass. The mirror is of the metal parabolic type, and is practically hermetically sealed. The lamp is fitted on a stem which slides in a special clip at the back, this being of sufficient diameter to allow the bulb to be completely withdrawn when necessary, as well as to be adjusted to any desired position. Both leads are taken to binding screws fitted to a fibre disc at the back of the focussing tube. The bracket, as shown in the sketch, allows the lamp to be adjusted to any position, the locking device being exceedingly secure and providing great rigidity in spite of its simplicity.

The makers are Messrs. Ward and Goldstone, Sampson Works, Springfield Lane, Salford, Manchester; and the London agents are Messrs. the Service Co., High Holborn, W.C.

The Rip.

The Rip dynamo electric lighting set for motor cycles is quite a new introduction, and although similar in principle to the Voltalite described above, the application is somewhat different. As in the previous design, the generator is of the constant voltage type, and no battery is used. Light is therefore only obtainable when the machine is in motion. As will be seen from fig. 10, the generator in outward appearance resembles a miniature high-tension magneto, having two stout little horse-shoe magnets between the special pole-pieces on which the H section armature revolves. This latter is exactly

THE VOLTALITE GENERATOR AND HEAD LAMP.

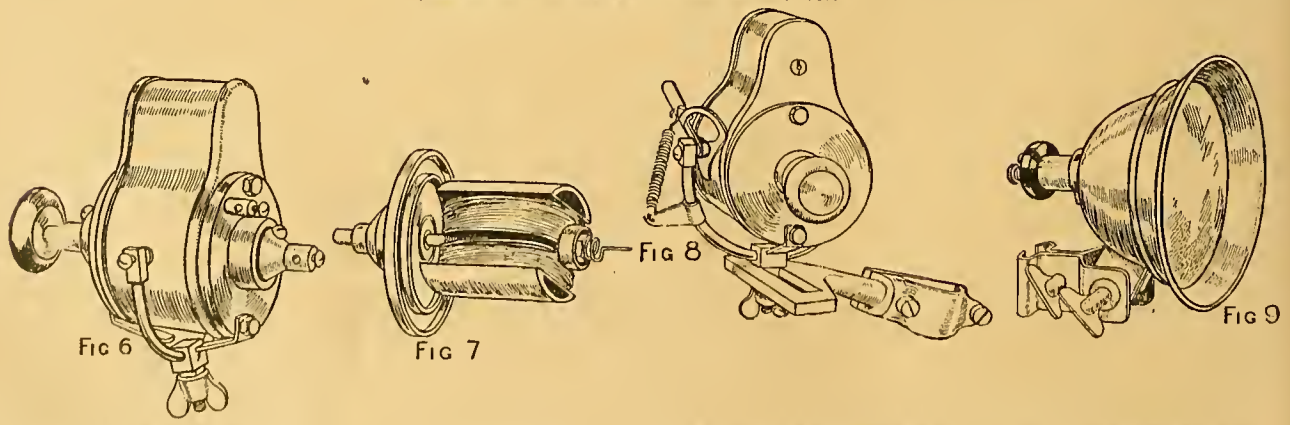


Fig. 6.—The dynamo showing (left) rubber-tyred friction wheel and (right) terminals for wire conductors.

Fig. 7.—The armature.

Fig. 8.—The generator clamped to its special gunmetal bracket, which is clipped to the cycle frame at a convenient point on back stay or front fork.

Fig. 9.—Head lamp and adjustable bracket.

Electric Lighting for Motor Cycles.—similar in construction to that of a high-tension magneto, except that it only has one winding, which is shown in detail in fig. 11. One end of the winding is, of course, earthed, whilst the other is carried along the armature-shaft to an insulated brush at its non-driving end. The armature-shaft revolves on plain bearings, which form the end plates of the machine, and is driven through a rubber-tyred friction disc which rolls on the beaded edge of the rear tyre rim. The position that this little dynamo occupies in working is shown in fig. 12. It may be mentioned

RIP FRICTION-DRIVEN ELECTRIC GENERATOR DEVICE.

FIG. 10

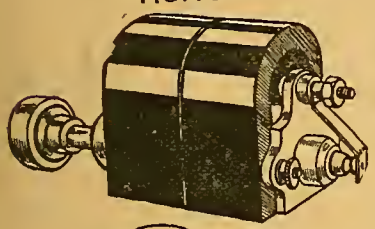
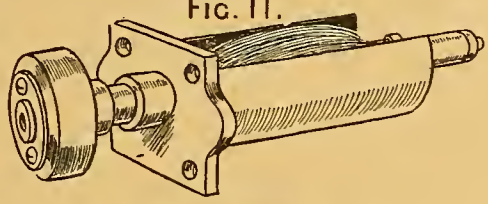


FIG. 11.



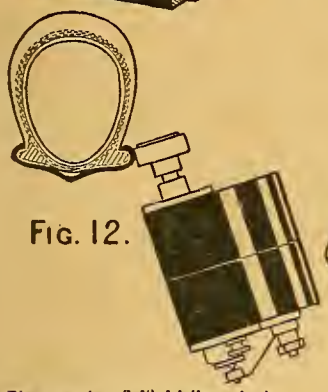


FIG. 12.

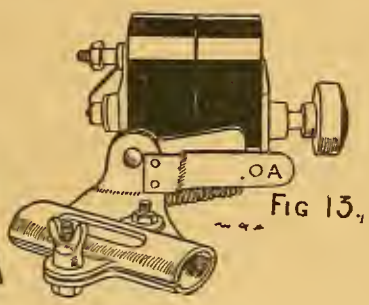


FIG 13.

Fig. 10.—Rip generator, (left) friction wheel, (right) collector brush and binding screw.
Fig. 12.—Method of driving the generator from beaded edge of tyre rim.

Fig. 11.—Single wound armature used on the Rip generator.
Fig. 13.—Bracket supporting generator normally held in engagement with the tyre rim by means of a spring. A. Spring plate carrying spigot.

that the Rip is quite a tiny little affair, its overall length being about three inches, its height and breadth about two and a half inches each, whilst its weight is only about 1 lb. For all that, its concentrated form enables it to give a very practicable supply of current.

The instrument is shown with its supporting bracket in fig. 13. This latter is clamped to one of the back stays of the frame, and supports the generator on a swivel piece, a strong spring normally holding the wheel in contact with the rim bead. To disconnect the dynamo, it is bodily swivelled on this pin until the spigot of a spring plate marked A in the sketch drops into a depression in the bracket fixed to the base of the dynamo itself, and holds the friction drive out of action. To throw it into action, the spring is released by a touch upon the plate A. Reference to fig. 10 will show how an outside collector brush is used to take the current from the insulated end of the armature-shaft to a binding screw carried in a fibre bush, the other binding screw being earthed to the body of the generator.

The head lamp supplied with the Rip is shown in fig. 14. This is, as can be seen, mounted on a spring bracket, which, however, is not likely to prove so satisfactory for motor cycle work as a rigid bracket, as there is no difficulty in obtaining bulbs which will stand quite heavy vibration. The mirror is a polished metal parabolic one, and the position of the glow lamp can be adjusted as to focus with a simple form of slide. The makers are Leo Ripault and Co., 64a, Poland Street, Oxford Street, W.

It will be gathered from the above descriptions that those who are attending to the requirements of motor cyclists in the matter of electric lighting are tackling the problem in two very different ways. The Polkey set may be described as a car lighting installation reduced to motor cycle size, while the Voltalite and the Rip may equally be described as push bicycle accessories brought up to motor cycle requirements. At the same time it must not be by any means forgotten that the difference in price between the one type and the other is very marked indeed. To our view, two points stand out very strongly. First and foremost, the difficulty of arranging the dynamo and its drive in a place where it could be protected from mud, dust, and wet. On muddy and bad roads the present arrangements scarcely allow the devices to

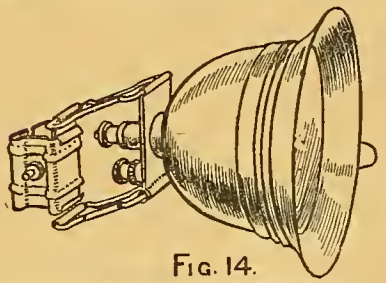


FIG. 14.

Fig. 14.—Rip head lamp and spring bracket.

demonstrate their good qualities, and I certainly think it desirable that a more perfect form of drive should be provided.

The second point is with regard to the head lamps themselves. Every means should, I think, be taken to promote the efficiency of the lamp itself, not only as regards the strength but also with regard to the illuminating power. Since the light provided by these dynamos is comparatively small, it is essential that only the best types of mirror should be used. Although the price of the two smaller sets is exceptionally low, I cannot help feeling that it might be reasonably increased without raising any objection, provided a stronger, better, and more easily cleaned head lamp were included in the set.

W. G. ASTON.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"V.H.K." (Grimsby) desires owners' experiences of the 3½ h.p. two-speed Lincoln-Elk and sidecar.

"A.R.W.B." (Stanmore). 3¾ h.p. 1912 Scott for 14½ stone rider.

"P.H.J." (Horley). 1912 3½ h.p. T.T. Peugeot engine; also 3½ h.p. Lincoln-Elk. Strength and durability.

"H.J." (London, N.W.). 3½ h.p. Lincoln-Elk.

"H.A.N." (March).—Lomax detachable non-skid.

"H.W.H." (Bromborough).—Albion two-speed and free engine hub for 3½ h.p. touring machine.

"C.A.B." (Co. Mayo).—N.S.U. automatic carburetter, particularly with regard to consumption; 3½ h.p. single-cylinder N.S.U with sidecar.

"H.W.S." (Edinburgh).—8 h.p. No. 7 Chater-Lea, Bosch dual ignition, Senspray carburetter.

"A.C." (Begelly).—3½ h.p. 1911 Rover.

"A.V.G." (Hyde Park).—5-6 h.p. Clyno and 8 h.p. Matchless sidecars.

"R.W.M." (Whalley).—3½ h.p. Rudge 1912 model.

"O.C." (Horrabridge).—2½ and 3 h.p. Lincoln-Elk, reliability, hill-climbing.

"E.B.H." (London).—3½ h.p. two-speed Humber and sidecar.

"W.R.H." (Blackburn).—3½ h.p. Zenith-Gradua with Canoelet sidecar.

"F.W." (Walthamstow).—1911 two-stroke Scott.

"W.A.E." (Birmingham).—Gradua gear.

"A.H.C." (Bristol.) Mabon variable gear on 3½ h.p. motor cycle.

"F.G." (Hamilton).—Dot with V.S. gear.

"F.J.H." (Hull).—Electric head lamps, reliability, etc.

"E.W.H." (Hayfield).—6 h.p. Zenith-Gradua sidecar; also 3¾ h.p. Scott and sidecar.

"J.Y." (Cambuslang).—Mabon gear fitted to 3½ h.p. with and without sidecar.

"J.I.E." (Openshaw).—Albion and Mabon clutches.

Occasional Comment

By "Ixion"

Betwixt and Between.

The analysis of the quadcar and runabout market on a weight basis, published on page 138 of the issue for February 8th, shows the wild confusion at present existing in this comparatively new department of the industry. In addition to those in the list, there are several three and four-wheeled vehicles of a semi-motor cycle character in existence, and the inventors of many of them intend to manufacture on a large scale if (it is a large "if") they can procure the necessary capital. Even in the short list referred to the weights ranged from 300 lbs. (the Bedelia) to 896 lbs. (the Eric), and no two vehicles in the list are even approximately similar in design and specification. Apart from the fact that engines, ignition, and carburation have been considerably improved, we are no nearer standardisation than we were in the premature tricar boom of half a dozen years ago.

Probably a majority of the untried passenger vehicles will prove to be lacking in durability, or marred by grave faults of design, or so costly to build that their production can never be commercially remunerative. Until experience has progressed further, and design finally settles down upon well-tried lines, it would be a grave mistake to crystallize definitions, and to organise machinery for pushing a type of vehicle which may or may not prove satisfactory.

There are always a few individuals who regard themselves as inspired men of genius, and are eager to hustle evolution. Some of the lay papers up and down the country have already done a deal of harm by publishing glowing descriptions of immature designs, and informing their credulous and ignorant readers that such and such a runabout was destined to revolutionise economical motoring. I recall one particularly glaring instance. A small provincial paper was somehow persuaded to print a glowing eulogy of a certain runabout. There was in existence but a single sample of this machine, namely, the original experimental chassis—and a very bad chassis it was, though even its maker and user had no conception of its many glaring faults. The article resulted in a number of local orders, and I do not know whom to pity most—the editor, the maker, the reporter, or the men who have got delivery.

THE MOTOR CYCLE IN THE TRANSVAAL.



Scenes near Johannesburg. The inset gives an idea of the difficulties to be overcome in touring in that climate where drifts and spruits are frequently encountered. The machine is a Rudge.

Within a year or two quite a number of these vehicles may have "made good," and the time will then be ripe for a formal definition, for fresh legislation or L.G.B. orders, for a decision whether the R.A.C. or the A.C.U. shall undertake the supervision of such vehicles. In the meantime, there are several well-tried machines of the type on the market, of which the powers and reliability are sufficiently exposed.

Readers who are thirsty for light passenger outfits will do well to confine their interest to these sources of supply. It is not the tradition of sound British industry to let the buying public do the experimental work, and the maker who adopts such a tradition soon weaves a noose for his own neck.

Acceleration in the T.T. Race.

The decision to adopt the longer Manx course again will have a greater effect on the T.T. races than anyone who has not been a spectator of the 1911 events can imagine. A great deal of time is either saved or lost by each competitor on the climb up Snaefell out of Ramsey. The first stiff stretch is about two miles long, and commences with the ill-famed "Hairpin"; this stretch terminates in the other ugly bend nicknamed the "Gooseneck," above which there is almost another mile of quite steep gradient. At no point in the race are good engines so clearly differentiated from bad engines as at these two points. Both corners are sufficiently severe to slow even the best riders right down to a crawl, and the acute observer can put any engine in its proper class by noticing the smoothness and rapidity with which it gets away again after these bends.

Last year the use of variable gears complicated the question, and after watching a lap at the Hairpin I walked up some little distance beyond it. Here the men who had dropped on to low gears at the corner, in order to procure a lightning pick-up, were trying to get back to their top gears, and here again engine quality was differentiated. Some of the second-rate engines did not get going on top gear until the second or third attempt, and others "chunk-chunked" heavily for many yards, while the pick of the machines accepted top gear at the first time of asking, and shot away like cannon-balls without even a momentary baulk.

The few entrants who relied on single gears performed uncommonly well. I particularly noticed two 3½ h.p. machines of different makes, which enjoy a somewhat similar reputation on the open market. One had a variable gear, but even with this assistance to hill-climbing it was very handsomely beaten on each lap by its single-geared rival.

Mixing Sulphuric Ether in Petrol.

A CORRESPONDENT hailing from America recently suggested in these columns that a mixture of sulphuric ether and petrol is preferable, during the winter months, to ordinary petrol used alone. A friend of ours who dabbles in chemistry and kindred subjects has kindly sent us the following notes regarding this mixture, and is careful to point out that they are merely theoretical deductions, and that, as a perfect test of the advantages or disadvantages of such a mixture, the only true method is a road trial. He says: "The proportions recommended were half an ounce of ether to each gallon of petrol. Since this mixture contains less than 1% of ether, it is evident that no noticeable gain in power will result, as the power which a given fuel will produce is proportional to its calorific value (everything else being kept constant). The calorific value of ether is not high, so that the addition of 1% will hardly affect the power produced per gallon of spirit. There is one point, however, in which ether will probably score: it is exceedingly volatile, and will fire at a very low temperature, so that, by having a vapour which contains a mixture of ether and petrol, easy starting is assured. This is a very important point in the cold weather, although in summer the advantage will hardly be so self-evident. The mixture will also have a beneficial effect on the 'picking-up' qualities of the machine, on hills, etc. Sulphuric ether is usually known in England simply as 'ether.' The variety which is prepared from methylated spirit, and known as 'methylated ether,' is the cheapest form, and quite good enough for the purpose. Probably the use of 'petroleum ether' (which, chemically speaking, is not an 'ether' at all) would have a better effect than sulphuric ether, as its volatility is much higher and its flash point lower."



THE NORMAN GATEWAY AT LAUNCESTON, CORNWALL.

AN INTERESTING EXHIBIT AT SOUTH KENSINGTON MUSEUM.

IN the Science Museum at South Kensington may be seen many articles that perhaps may be looked upon as curiosities, but at the period of their existence they were considered the acme of perfection.

About fifteen years ago a motor bicycle was made and ridden by Col. H. C. L. Holden, F.R.S. It is one of the first made, has been on exhibition at the museum for a number of years as showing what the first motor bicycles were like. This motor bicycle is a four-cylinder machine with handle-bar control. All four exhaust valves lifted simultaneously. Weight, 105 lbs.

Recently an example of the latest motor bicycle has been placed on exhibition at the Museum alongside that made by Col. Holden. The machine selected by the authorities is a Rudge. Its original engine design with the radiating fins largest at the combustion head—its drop-pedal device giving a riding position comparable only to the perfect seat on horseback—free engine clutch, and easy accessibility, are some of the points that make the Rudge so distinctive.

E.

Radiator Fins on V Twin Engines.

THE radiator fins on a modern V twin-cylinder are almost invariably set at an oblique angle to the axis of the cylinder. This is obviously more expensive than the older type, if only because it means that the single-cylinder castings cannot be used in a twin-cylinder of double the power. The prospective purchaser is therefore duly impressed at the mathematical precision of the maker's endeavours to obtain the maximum efficiency at whatever cost. The ostensible idea, of course, is that, by casting the fins parallel to the plane in which the engine moves, the horizontal currents of air, induced by that motion, shall have freer circulation, and so presumably carry away the heated air round the cylinder more readily, and keep the engine cooler than it would be if the older type of fins were adopted, with planes at right angles to the cylinder axis.

It would be interesting to know how far these "skew" fins are the result of actual experiment, or whether they are not rather the outcome of theory.

The Principles of Cooling.

A few elementary principles must be considered here. A heated body such as an engine cylinder gets rid of its heat in three ways—radiation, convection, and conduction. The heat felt on approaching the hand to the cylinder, when the machine is standing, is principally radiant heat, *i.e.*, rays of heat which pass through the air without materially raising its temperature. These rays are quite unaffected by a current of air, and are therefore foreign to the present discussion. Cooling by their means is precisely the same, whether the machine is moving or standing, or whether the fins are straight, skew, or New Art, provided their area is the same. Convection is the second means of cooling, and is really only a continuous form of the third means—conduction. The air in immediate contact with the cylinder is heated, and, becoming lighter, rises, its place being taken by cold air, which in its turn is heated and moves on, thus forming a steady natural current. This is how a cylinder chiefly cools, when standing with the engine stopped, as may be proved by noting the difference in the heat felt by the hand at the side and then above the cylinder, the first being the effect of radiation only, and the second both radiation and convection.

Convection and Conduction.

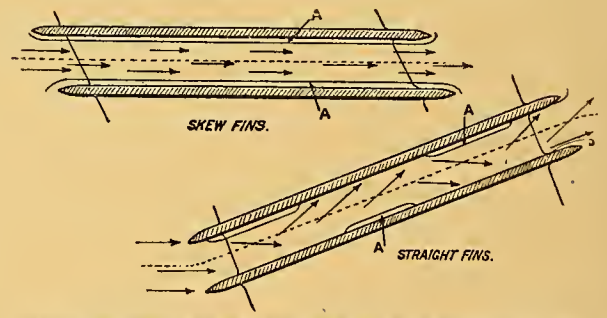
The natural currents due to convection, however, are entirely overpowered and lost in the currents set up between the radiator fins when the machine is moving, so that convection also may be disregarded in comparing the two types of fins. It may be pointed out, however, that any advantage on this score is all on the side of the straight fins. Being at an inclination to the horizontal, they assist the gentle current of heated air to rise; whereas the skew fins are at right angles to this natural current, and so retard it.

But, it will be said, since the skew fins are parallel to the currents set up by the motor cycle's motion, they will, by the same reasoning, offer less resistance to the artificial convection resulting. The same argument does not hold, as the conditions are very different. With the (relatively speaking) immensely powerful currents set up when in motion, it is an advantage to offer some opposition to their direct flow.

The reason is simple. Air is a very bad conductor. Therefore, only a very thin layer of air in immediate contact with the area of the cylinder and its fins is heated at all; and were it not for the convection currents, or the artificial currents we are now considering, would remain like a blanket round the heated cylinder, preventing it from cooling. What happens, however, in practice is that this strong artificial current sweeps away the thin layer of heated air, and brings a continuous stream of cold air into contact with the heated metal, carrying away its superfluous heat.

Which is the Better.

The whole crux of the question is whether the straight or skew fins the better help this action. A reference to the diagram would go to show that the slight opposition offered by the straight fins is a real advantage, and though it is possible they very slightly retard the currents, the difference in time during which any given particle of air is in contact with the hot metal is too infinitesimal to have any effect. The diagram shows a pair of skew fins and a pair of straight fins. Round each is depicted a (much exaggerated) thin layer of heated air, A. A current of cold air of relatively high speed is coming in the direction

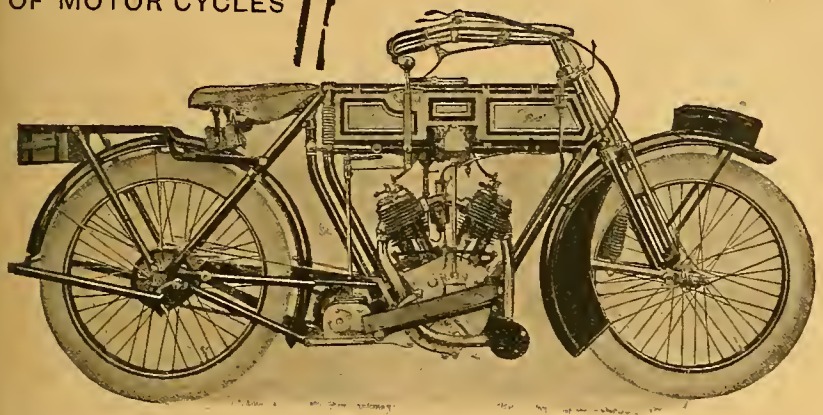


Note how the layers of hot air A over which (the writer points out) the cold air glides in one case, and how they are broken up in the lower diagram.

of the arrows. In the one case this current flows straight through between the two fins, and, it is obvious, never comes directly in contact with the heated metal. Of course the heated air, being light is swept away in its train, but the action is weak. With straight fins, the current, travelling horizontally, impinges on the layer of hot air on the lower flange, and bores its way right through to the metal. Further, it will be reflected thence on to the upper flange, where it will have the same effect. Moreover, the general course of the current resulting will be as shown by the dotted lines, and hence, in addition to the direct action of the horizontal components, there is the same general effect as with skew fins. It is sufficiently obvious, then, that on this reasoning the straight fins should be the more efficient.

Of course, it is possible actual experiments may have been made which have satisfied makers that skew fins are really something more than a talking point. If so, they will probably let us know the fact; but, if not, it is more than likely that in practice there is no perceptible difference in efficiency between the two types, whatever may be argued theoretically. And therefore the straight fins are to be preferred, if only on the score of workshop convenience. H.R.T.

THE PULLMAN CAR OF MOTOR CYCLES



Bat is Best

New Catalogue awaits your request.

(This we say in no boastful spirit: we merely repeat what is being affirmed by all Bat riders).

Take this twin-cylinder, two-speed model. It embodies the best ideas in motor cycle construction, realised in the best material, by best workmanship. Its applications in use are many. As a solo mount it can be driven at a crawl through traffic and interesting country, or it may be speeded up to a pace that equals records. United with a sidecar, it affords an exceptionally efficient passenger combination, capable of anything yet accomplished on the road. It will give willingly and untiringly the best service, for

BEST AFTER BAT TESTS

Bat means Best

1912 Models and Prices—

3½-4 h.p.	£48	10	0	7-8 h.p. Special Two-speed Model	£75	0	0
Ditto, with P. & M. 2-speed Gear	59	0	0	T.T. Model, 3½ h.p.	50	0	0
6-6 h.p.	58	0	0	Do. 5 h.p.	62	0	0
Ditto, Special Two-speed Model..	73	0	0	Do. 8 h.p.	65	0	0
7-8 h.p.	60	0	0	Any make of sidecar will fit.			

The BAT MOTOR MANFG. CO., PENGE, S.E.

3½ h.p. ROVER

"The Daily Mail," February 2, 1912,

says

"IDEAL MOTOR CYCLE."

"Here, surely, is as near the ideal for its type as one can expect motor cycle manufacturers to produce.

It is in perfection of detail that this machine makes so rare an appeal.

Never have I ridden a machine of this type which was genuinely quieter under all conditions of driving.

This engine proves a veritable delight in its instant responsiveness.

The workmanship is obviously of the very best."

1912 Models from £49.

THE ROVER CO., LTD.,

COVENTRY.

LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

How to Exhibit a Badge.

Sir,—I see your correspondent "P" suggests the front number plate is the best position for exhibiting the A.A. badge. This I suggest is quite wrong, and is borne out by a conversation with one of the A.A. scouts, which I had at Ascot last summer. Having stopped to enquire the way, the conversation turned on badge position. I was then carrying mine well up on the handle-bar and facing the direction of travel. The scout remarked that he wished all motor cyclists would do the same, as when the badge is on the number plate it is impossible to see it until the rider is opposite the scout. He said carrying the badge in the position I had it made it visible some distance away.

J. R. BELCHER.

Cooling the Exhaust Valve.

Sir,—I notice in your issue of February 8th, a report of a meeting of the A.C.U. at which a paper was read entitled "Speed and Power," and one of the devices shown was intended to force cold air on to the exhaust valve for cooling the engine.

I beg to call your attention to the fact that I hold a patent, No. 25533, 1909, for cooling internal combustion engines by admitting cold air to the exhaust valve. I shall be glad if you will give this the same publicity that you have given to the meeting of the A.C.U. F. B. WELLS.

[Devices for cooling the exhaust valves of internal combustion engines in a somewhat similar manner to those mentioned have been patented by several, notably by Mr. Harry Reed, Manchester.—ED.]

The All-weather Motor Cycle.

Sir,—I am sending two photographs of myself riding my 3½ h.p. 1910 Bradbury motor cycle on my way to business through very deep snow, which fell at Leeds early this month, Although I found it extremely difficult to keep upright, my engine never failed me until I was about twenty yards from my place of business, when the back wheel, as can be seen, got completely clogged up going through a very deep snowdrift.

E. M. GLEN.

Who will Adopt the Quadcar?

Sir,—I am quite in accord with your leaderette of the 8th inst., "Who will adopt the Quadcar?" There is no doubt that a large market awaits this type of vehicle. The suggestion that makers should submit their machines to an R.A.C. trial is a good one. I see no reason why a properly designed and built quadcar should not be quite as reliable as a sidecar combination.

Seven years ago I designed and built a light car on what is now described as "up to date lines," and I should certainly have no hesitation in submitting a similar one to such a test, the original machine having passed out of my hands. Had I the capital at my command now I should certainly place it on the market. B.J. 305.

The Proposed R.A.C. Road Guides. Attitude of the A.A. and M.U.

Sir,—The following letter has been addressed to the secretary of the Royal Automobile Club:

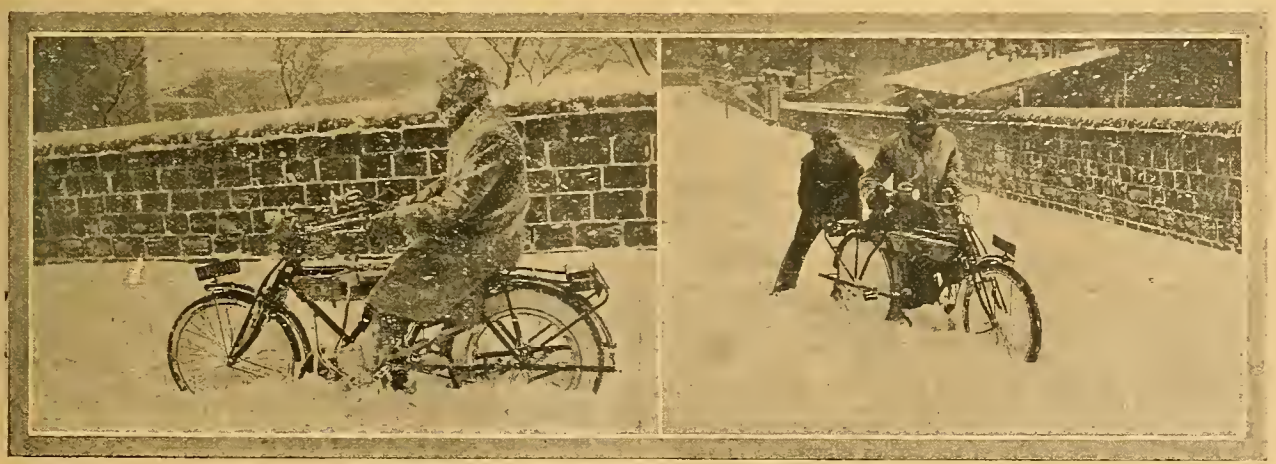
12th February, 1912.

Sir,—I am directed by my committee to communicate with you in regard to the scheme for the establishment by the Royal Automobile Club of a system of road "guides" in uniform, the details of which have been published.

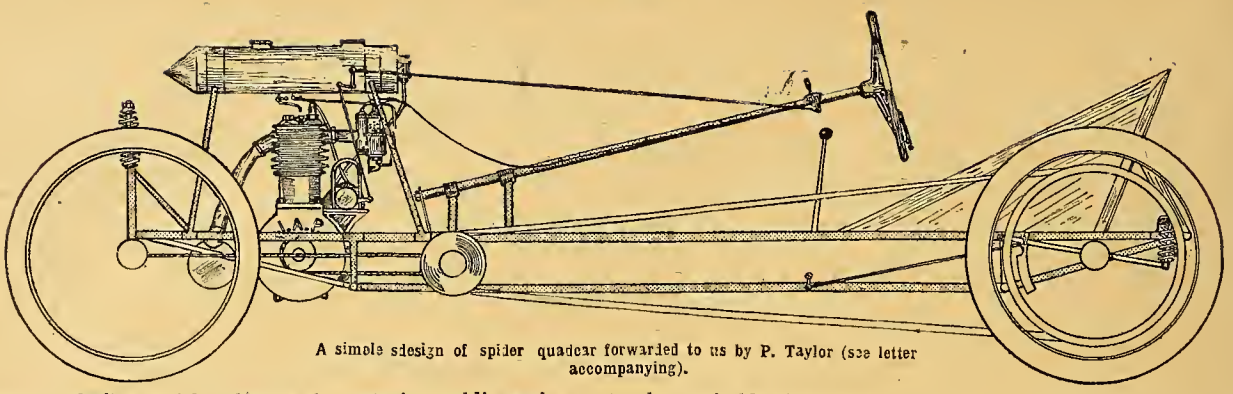
It is unnecessary to point out that the duties which it is stated these road "guides" will perform are identical with those which have been carried out for the past seven years by the patrols of this association, at a cost at the present time of over £20,000 per annum.

It is difficult to believe that your club seriously contemplates the adoption of a scheme, which is not only an encroachment upon work to which this Association has been devoted since its inception, but which will also, if persisted in, lead to unnecessary overlapping, to the detriment of the reasonable motorist whose welfare should be our common concern.

The unanimous approval which greeted the amalgamation between the Automobile Association and Motor Union (which now numbers over 39,000 members) is evidence of



Motor cycling in the snow. (See letter signed E. M. Glen on this page.)



A simple design of spider quadcar forwarded to us by P. Taylor (see letter accompanying).

the strong feeling which animates the motoring public against unnecessary duplication of work. Any action which would tend to a recurrence of friction and lack of unity between the national motoring institutions cannot be too strongly deprecated.

My committee hope that the General Committee of the Royal Automobile Club will pause before embarking upon a policy which can only be construed into an act of aggression directed against a friendly organisation.

STENSON COOKE, Secretary A.A. and M.U.

Sir,—Reference has been made in the press to "The Coming Fight between the Royal Automobile Club and the Automobile Association."

The real position is as follows: For years the Automobile Association has been in the habit of rendering its members certain assistance on the road, and this assistance has been carefully confined to its members.

The members and associates of the Royal Automobile Club, numbering over 25,000, have asked that similar assistance should be rendered to them by their own organisation, and this assistance it is now proposed to give to the members and associates of the Royal Automobile Club

The club does not propose in any way to interfere between the Automobile Association and its members, and sees no reason why the Automobile Association should interfere between the club and its members.

This position presents no materials for a "fight," each body being entirely free to render such assistance to its own members as it sees fit.

J. W. ORDE.
Secretary Royal Automobile Club.

Stream-line Bodies for Motor Cycles.

Sir,—Perhaps a short account of a personal experience last winter may be of interest to any of your readers who may contemplate "stream-line" bodies on their motor cycles.

The motor cycle I used had an open frame, and therefore offered unusual facilities. A flat shield was fitted something after the nature of a car dashboard, reaching as high as the seat and slanting upwards and backwards just in front of the rider's legs, as this was found to give the maximum of warmth and protection. It was speedily found necessary to attach side pieces for the protection of the outside of one's trousers and boots. Incidentally, I found that if the roads were in the least dry dust flew up the slanting dashboard, covering the rider's front and face to a most astonishing degree. The great disadvantage experienced, however, was the feeling of insecurity from being boxed in. The degree of warmth and protection was such that I persevered, nevertheless. One day, on turning a corner at the top of a hill, I was met by a gust of wind, which, catching the shield, for a moment made steering to my right side a bit difficult and erratic. Before I had regained complete control, a car appeared round the corner, coming fairly fast. A collision resulted. Usually, in such a case, the motor cyclist is thrown clear; and this would have occurred in my case but for the shield, which, crumpling up, pinned me helpless to the machine. The clever driving of the car alone saved my life, and I escaped with a badly crushed foot.

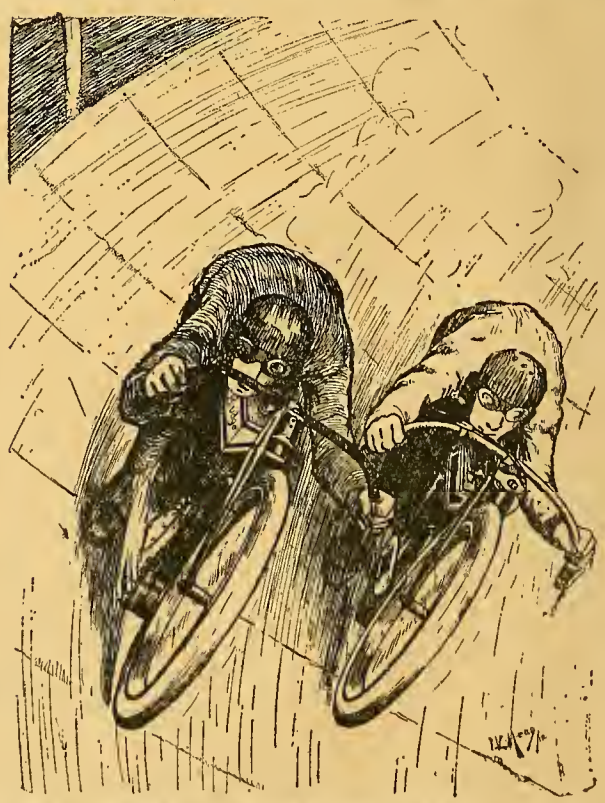
I have no hesitation in saying that on a two-wheeled motor cycle anything in the nature of the bodies illustrated in your recent article, and referred to by "Ixion" in his note, would be veritable death-traps for all but the most expert. I cannot see that there is any way out of the difficulty "Ixion" mentions, save first to adopt the three or four-wheeled machine, which is stable of itself, and then to fit the stream-line body.

H.M.

A Simple Form of Quadcar.

Sir,—I am submitting to your notice a design for a light four-wheeled runabout which may be of interest to your readers. No, my name is *not* "Dew," although I am indebted to him (through the medium of your esteemed journal) for what the artists calls the "altogether." I I think the drawing will explain itself. The details differ from those of Mr. Dew, and are mostly original.

The engine is a standard 3½ h.p. J.A.P., and this, in conjunction with a counter-shaft clutch and two-speed gear, should prove an ideal propulsion for a sporting "go anywhere" type of mount. The one illustrated should present little difficulty in upkeep over and above that of a motor cycle. I may say that the drawing is not a lesson in draughtsmanship, and I hope your readers will overlook



NECK AND NECK! A motor cycle racing incident. The artist has endeavoured to depict (and we must say with considerable success) a Triumph and a Rudge rider in a great duel.

technical errors. I have had an offer by a leading cycle and motor cycle man in the district (Keighley) to construct a runabout on the lines illustrated for £50 complete, which I consider very reasonable. Wishing your valuable paper a continuation of the success it has deservedly attained,

P. TAYLOR.

Sheffield and Hallamshire M.C.C. and Affiliation.

Sir,—In reading the account of the Sheffield and Hallamshire Club's general meeting in Club News of last week's issue, I note that it is stated that this club has affiliated to the A.A. and M.U. As a member of this club, and one who was present at this meeting, I suggest that the writer has no authority in making the statement, as the club did not affiliate to the above body. J. HASLAM.

[It appears that a proposal to affiliate to the A.C.U. was defeated, and an offer of free legal defence of the members accepted from the A.A. and M.U.—ED.]

Necessity is the Mother of Invention.

Sir,—On page 173 of the last issue, under the above heading, you report how a motor cyclist thawed the generator of his lamp over a petrol fire which he made on the road. This method, to my mind, is waste of good petrol, and an addition to a bad tax—the petrol tax.

Three of us here (Royston) had similar trouble with our generators one evening when we went skating. When we were returning, we found that the generators were frozen hard, and we adopted a very simple method. First we unscrewed our carbide containers, and filled the remaining space available above the carbide with snow, which we collected from the side of the road. We then spat on the snow and replaced our containers as soon as possible. The saliva started the formation of gas and heat, the heat in its turn dissolved the snow, which produced more gas and heat, and the heat from this melted the ice in the water compartments.

When once we got a good flame it would have been an easy matter, had the heat not thawed the ice, to remove the burner and play the flame on the container for a few minutes. Of course, I mean, when I say remove the burner, that the burner is easily removed with its seating, as is the case in the excellent F.R.S. lamp.

Wishing *The Motor Cycle* every success, which it richly deserves. (Dr.) SELBY CLARE.

Inclined Engines.

Sir,—In reply to "Ixion's" remarks on the subject of engines inclined backwards, I should like to say that my omission was deliberate. Having set out to state the case for a departure from the usual vertical engine, I failed completely to discover either by reasoning or experience any notable advantages in the inclined-backwards construction. Now, however, Mr. W. H. Wells has stepped into the breach and made good my deficiency. Therefore, further comment from me on that branch of the subject would be supererogatory.

In referring to the Scott machine, Mr. Samson asserts that its steadiness is due, not as I suggested, in part to a forward position of the centre of gravity, but, on the contrary, to a backward position of the load. Mr. Samson implies that there is more weight on the back wheel and less on the front wheel of a Scott machine than on most other makes. Now this flat contradiction comes as rather a shock, because it is customary to study facts and figures before making such assertions as the above. I will presently quote figures which seem to indicate that Mr. Samson has not done so.

I agree that much depends upon the ability or otherwise of the rider, but should like to point out that it is very often otherwise. Does Mr. Samson build his machines for men of Mr. J. Marsball's calibre? To do so is not a commercial proposition. It is for ordinary unskilful amateurs like myself who go to hill-climbs and races but do not go in for them that machines are turned out by the thousand.

I should like to refer again to my experience along the Holyhead Road, over the best limestone butter. The machine I described was, of course, a P. and M., the weight distribution of which is the most remarkable, and also the most satisfactory from the said amateur's point of view of any of the three types quoted below.

Assuming the load on the back wheel to be unity, I give the proportionate load on the front wheel in three cases. It is best to put it that way because weights like ages—time and gravity are merciless, blind, undiscriminating—are often better unrevealed. The first case is, of course, a criterion for a large number of standard machines at present on the market, and the result is obtained from measurement. The results in the second and third cases are from figures supplied by the makers: Free engine Triumph, .76; Scott, .79; P. and M., .96.

Convention demands that I should state the unfortunate fact that I have no financial interest in the three firms mentioned.

B.Sc.

Lubrication Systems.

Sir,—I think most readers will agree with the opinions expressed that ball bearings, inside flywheels, oil drag, excessive cylinder lubrication, carbon deposit and rapid bearing wear are serious objections to the modern engine, and that the various methods suggested for overcoming these, such as the outside flywheel and plain bearings, have objections from other points of view. As an engineer especially interested in internal combustion engines, there appears to me to be only one satisfactory method of getting over these difficulties, that is by adopting forced lubrication. In this case the flywheel does not drag in the oil, lubrication of the cylinder depends on oil pressure, and can be regulated; there is no bearing wear and no necessity for an outside flywheel.

In writing this, I have in mind the W.D. engine, which was described in your paper at the time of the Olympia Show. With an engine designed as cleanly as this one, it appears to me that there is not even a single compensating disadvantage, as the complication involved is less than with many of the mechanical lubricators now on the market, which are at best only a slight improvement upon the old-fashioned hand pump.

R. H. DOWNS.

To the Tyrol and Back.

Sir,—"R.M.B.J." takes me somewhat to task for execrating the road from Domo d'Ossola up the Simplon Pass, in my article "To the Tyrol and Back." I only gave my impression of the road, and it may be a guide when I say that in 1901 there was a landslide that swept away châlets, a forest, and covered an area twice the size of Hyde Park with *débris*, burying the road 30ft., and a detour is now made to go round this area. It was perhaps here that I was thrown on a road resembling a quarry bottom; in fact, "R.M.B.J." says "there are large stretches of unrolled stones." Quite so; and this on a climb of over twenty miles. Is it not a fact that "R.M.B.J." came down the worst side, and, therefore, was not so inconvenienced?

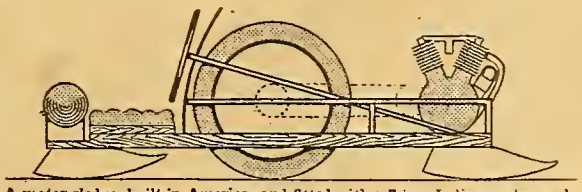
As to a steam roller, I may say we only saw two during the whole of our tour, but then a steam roller is not necessary to make a road smooth. The Simplon rises to a mere 6,600ft., and is a disgrace, whereas the Stelvio rises to over 9,000ft. and the surface has the Simplon "chased up a back street."

"R.M.B.J." asks me if I would not have liked a two-speed, putting aside the sport in a single gear, and in answer I may say he has asked me a puzzler, as the answer is yes, and yet no, because there were a few times only when I could have done with a lower gear ratio than the boss in the J.A.P. will allow; but, in any case, I should not have relished a twenty-miles grind on a machine geared 4½ and 9 to 1. If I was going exactly the same tour again and had to have a two-speed, I should choose a gear giving 4¼ and 6¼ to 1, or one that will give any reasonable gear, say the Gradua.

However, what my machine is to be, single or two-speed on my next tour, is "on the knees of the gods."

W. FAWCETT.

S.I.A.M.T., Ltd., write that they wish to correct the impression that has gained ground that the machine entered in the Herts County A.C. Trial was a 2½ h.p. The machine was fitted with the standard 2¼ h.p. engine, and was single-geared.



A motor sledge, built in America, and fitted with a 7 h.p. Indian motor cycle engine. The wheel steering will be noted. (See page 173 last week.)



TIME TO LIGHT LAMPS.

Feb. 22nd	... ...	6.23 p.m.
,, 24th	... ...	6.27 ,,
,, 26th	... ...	6.30 ,,
,, 28th	... ...	6.34 ,,

English-Dutch Trial.

Further news respecting the above international trial will be published in our next issue.

Oxford Club's Programme.

For the annual open hill-climb of the Oxford M.C.C. on April 13th, a class for sidecar combinations and runabouts will be included. A further event proposed by the Oxford M.C.C. is an open speed trial in a private park, also a 100 miles open reliability trial over an extremely difficult course.

Hill-climb in New Zealand.

A hill-climb organised by the Otago M.C.C. (New Zealand) at Saddle Hill proved a great success, the class winners being as under:

Private Owners.—A. MacDougall (3½ h.p. Triumph)

Trade Riders.—G. Paterson (2¾ h.p. T.T. New Hudson).

Sealed Handicap.—Private Owners: S. Poole (5 h.p. Indian).

Ladies' Competition and Easter Tour to Harrogate.

Particulars of the second lady motor cyclists' trial organised by the Herts County A.C. are now ready, and may be obtained from Mrs. C. C. Cooke, North Mimms, Hatfield. The run to Harrogate is on Good Friday. On the Saturday there is to be an open hill-climb at Barden Moor, and for the North v. South contest Messrs. Phelon and Moore, Ltd., have presented a challenge cup. Easter Monday marks the termination of the tour, when the return journey to London will be commenced.

Twenty-nine T.T. Entries.

Entries to date for the Tourist Trophy Races are as under:

SENIOR.

O. C. Godfrey (holder)	Hal Hill
C. R. Collier	E. T. Bolton
H. A. Collier	J. Norton
S. A. M. Witham	P. Brewster
Blumfield, Ltd. (3 machines)	Scott Engineering Co. (2 machines)
John Gibson	J. W. Woodhouse
W. H. Bashall	I. B. Hart-Davies
J. T. Bashall	C. B. Franklin
D. C. Bolton	P. W. Owen
	P. Butler

JUNIOR.

P. J. Evans (holder)	J. W. Woodhouse
C. R. Collier	W. H. Bashall
A. Collier	P. W. Owen
F. W. Applebee	

New Company to Manufacture Quadcars.

In a recent issue we referred to a company which was in process of formation to manufacture quadcars. The prospectus is now in the hands of the public, and the subscription list will be closed on Monday next, the 26th inst. The title of the concern is Duo-cars, Ltd., the authorised capital being £10,000. Prospectuses and further information may be obtained from the secretary (*pro tem.*), Mr. W. H. Stirling, 114-121, Mansion House Chambers, 11, Queen Victoria Street, E.C.

Arms Hill an Attraction.

Another party of motor cyclists journeyed from town to Arms Hill, near Henley, at the week-end, and on arrival there found quite a number of motor cyclists actively engaged in trying to conquer the ascent. Any other readers wishful to try their prowess should refer to *The Motor Cycle* of February 1st last, wherein the first mention of the hill was made, and a map published showing its location. We have received a communication claiming that the first ascent on a fixed geared 500 c.c. single-cylinder was made by a Mr. Shaw on a T.T. Rudge. The first ascent on a variably-geared 500 c.c. is claimed by C. Q. Roberts on a three-speed Rover.

SPECIAL FEATURES.

Midland Open Reliability Trial.
New Western Artery for London.
A Morning with the Testers.
Will Makers Support the T.T.?

Stolen Machines.

Burglars succeeded in purloining a motor cycle from a lock up shed at Richmond a few nights ago. The stolen mount is a 2½ h.p. 1912 N.S.U., engine number 19394, registration mark LE 977. The owner, Mr. R. S. Ingram, "Strathearne." King's Road, Richmond, offers a reward of £5.

Motor cycle and sidecar, the property of Mr. W. Wilson, Tottenham. 4¼ h.p. Precision, No. 1462, Eisemann. Druids, Binks carburetter, Wood Milne back, Michelin front, wicker sidecar.

The premises of the Colmore Depot, 49, John Bright Street, Birmingham, were broken into between last Saturday night and Monday morning, and two motor cycles stolen—one 1911 two-speed Douglas, registered No. O 4537, the other Macheth-Precision, Armstrong three speeds, two pairs footrests, no pedals, registered No. O 7411. Two suits of motor clothing were also taken, one belonging to C. R. Collier, which he left after the Midland Trial.



FAST CORNERING IN THE GREASE.

Four competitors in the Midland Trial, at the bad bend on Sunrising Hill. W. W. Douglas (Douglas), C. H. Walden (Premier), S. Fontaine (Quadrant), and J. Chater Lea (Chater Lea sidecar.) A less fortunate competitor is looking on disconsolately.

Thursday March 21st

The date of *The Motor Cycle* Special Spring Number

Motor Cyclists' Progressive Association.

The meeting of the newly-formed Motor Cyclists' Progressive Association is *to-night*, Thursday, at the Holborn Restaurant, at 7.30. All members of the A.C.U. and its affiliated clubs will be welcome.

Owners' Experience.

A sign of the times is the increase in the number of "Experiences Wanted" in this issue The queries are sent by readers anxious to place orders for the motor cycles and accessories enumerated, subject, of course, to favourable reports by fellow readers of this journal.

Sunderland Motor Cyclist gets Damages.

W. F. Ranshaw, a motor cyclist of Sunderland, has been successful in a claim for damages against a firm of market gardeners owing to the negligent driving of a trolley, which did not allow sufficient room for the motor cycle to pass.

Illuminated Speed Limit Signs.

The R.A.C. and the A.A. and M.U. representatives met the Hants C.C. with regard to the proposed speed limit in Basingstoke. After an inspection of the roads it was agreed to waive all objection on the local authority agreeing to supplement the ordinary speed limit signs with special illuminated signs, so that motorists should have adequate warning of the existence of the restriction at night.

A Monster Motor.

Ceurremans the well-known Belgian pacemaker, is at present in Paris superintending the building of what promises to be the largest motor cycle ever used for pacing purposes. It is to have four cylinders, and when complete, Ceurremans with Arthur Vanderstuyft following in his trail, will endeavour to wipe out Paul Guignard's long standing paced push cycle world's hour record of 63 miles 256 yards set up at Munich a few years ago.

A Misstatement.

Misguided people often step in where angels fear to tread. The rumour contradicted in our last issue that Jake de Rosier would ride a Matchless in the T.T. Race was a feat of sublime imagination. Poor de Rosier is suffering from the effects of an accident that occurred in the autumn, and, so we are informed, his doctor has advised him to refrain from riding for some time to come. Consequently he has, since his recovery, occupied himself with track promoting.

Motor Cycle Paced Racing at Home.

Motor cycle paced racing promises to form one of the popular attractions at cycle race meetings during the coming season. Several well-known riders have purchased motor cycles for pacing purposes, for their own private use, and it is very probable that a four-cornered paced match will figure in the S.C.C.U. programme at Herne Hill on Good Friday. Now that motor cycles are so plentiful, one wonders why this form of interesting racing has not been more encouraged. It has great possibilities.

FUTURE EVENTS

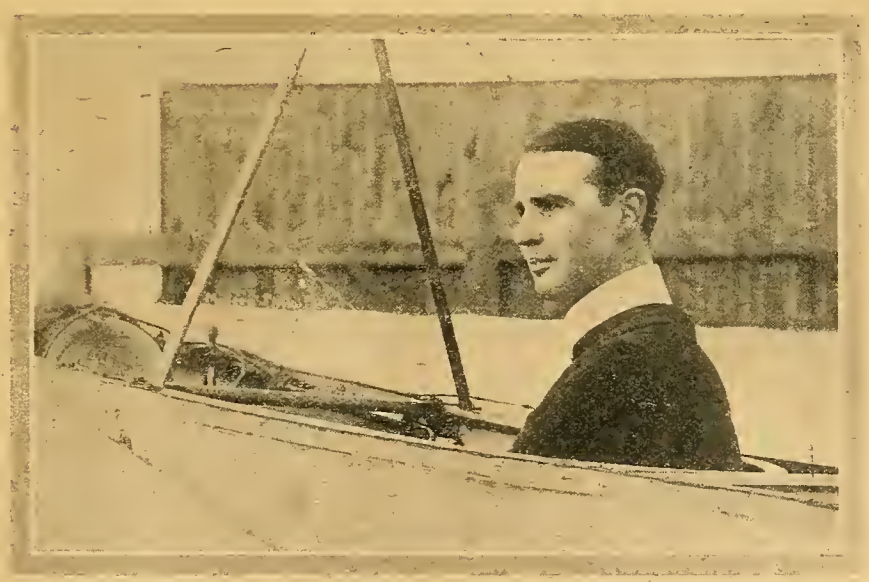
Mar. 2.—A.C.U. Open One Day Trial.
" 16.—Essex M.C.C. Open Hill-climb.
" 22.—B.M.C.R.C. Race Meeting.
" 23—Herts. County A.C. Open Quarterly Trial.
" 30.—Derby and District M.C.C. Open Hill-climb.
Apl. 5-8.—N.W. London and Herts. County M.C.C. Joint Trial and Open Hill-climb (Yorks.) and Ladies' Competition.
8.—Westmorland M.C.C. Open Hill-climb on Brigster Brow
13.—Oxford M.C.C. Open Hill-climb

The Late Mr. D. G. Gilmour.

On Saturday last England lost one of her most daring and skilful aviators, who sacrificed his life to the cause of science. Douglas Graham Gilmour was known intimately to the writer, who knew him to be one of those intrepid Englishmen of whom his country may be justly proud. Very many of his friends blamed Gilmour for his rashness, but though his doings on motor bicycle, car, and aeroplane were of the hair-raising order, his extraordinary skill led those who knew him better to criticise him more kindly. Apparently the terrible accident which removed him from our midst was in no way his fault. It was in 1907 that he rode through the Six Days' Trials on a 9 h.p. twin Bat, 85 × 95 mm., and with it gained a first-class certificate. That large engine was thought to be a terrible monstrosity in those days. Yet Gilmour would make it start at the first push, and would walk in a circle beside it, with each cylinder firing with perfect regularity. He was intensely amusing, and well does the writer remember how, on the occasion of these trials, there happened to him one of those thrilling incidents which he so dearly loved. "I was going quietly through a village when a stupid old horse in a cart started to run away. Of course, I chased it and passed it easily, and then a police inspector stopped me and said it was my fault. Silly ass! I can tell you I told him what I thought of him." Some years after, Mr. George Reynolds, who had been a judge in the 1907 trials, was walking across the Brooklands flying ground, above which Gilmour was soaring in a monoplane. He never forgot his old motor cycle friends, and, swooping over Reynolds like a hawk, scared the life out of him. Hardly had Reynolds recovered from his trepidation when a cheery voice called out, "Hallo! Reynolds. I thought I recognised you just now. Sorry I came so close, but I had to make sure it was you." None of those splendid sportsmen whose doings have been recorded in *The Motor Cycle* will be regretted more than our old friend, whose name has been added to the too long list of those whom aviation has claimed for her own.

The R.I.A. in Surrey.

The East Surrey Centre of the R.I.A. is taking a very active interest in the scheme for the construction of the relief road at Croydon. At its last meeting, the chairman (Councillor A. T. Lewis) made a special report thereon. The Corporation are now completing surveys and plans of the complete road (Thornton Heath to Purley), the total cost of which the borough surveyor estimates at £60,000. Towards this the Road Board have definitely agreed to contribute £30,000, the Ecclesiastical Commissioners £5,500 and provide the necessary land and compensate the present owners, and the L.B. and S.C. Railway Company have agreed to provide new bridges at Waddon and Mitcham Road Crossings. A scheme for widening the Shalford to Reigate Road was discussed and further details are to be obtained, and the matter will be further considered at the next meeting.



The late D. Graham Gilmour, a one time motor cyclist, who was killed in a monoplane accident at Richmond last Saturday. He personally gave us the above photograph.

AUTO CYCLE UNION NOTES.

MEMBERSHIP.—Seventy-two touring members and seven private members were elected at the last committee meeting. The 5s. touring membership scheme is going well, and enables motor cyclists to obtain valuable benefits at a smaller subscription than any other motoring institution demands.

NOTTINGHAM CENTRE.—We are given to understand that a Nottingham Centre is in process of formation.

NATIONAL AUTOMOBILE COUNCIL.—The National Automobile Council on which the A.C.U. is represented is fortunate in having the Right Hon. Walter Long as chairman.

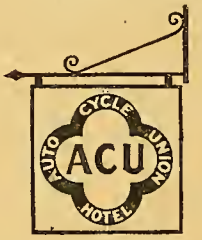
JUDGES IN A.C.U. TRIALS.—The names of a number of members from which the A.C.U. may make a selection of judges for A.C.U. competitions is to be submitted to the Manufacturers' Union.

SUB-COMMITTEE TO CONSIDER TOURIST TROPHY REGULATIONS.—The above consists of Mr. J. R. Nisbet, vice-chairman, Messrs. J. W. G. Brooker, A. J. Moorhouse, and E. M. P. Boileau.

QUADCARS.—The A.C.U. Competitions Sub-committee and the R.A.C. Competitions Committee met and discussed the question of the control of the above vehicles last Thursday, but nothing definite was decided. A further joint meeting will be held this evening.

A sub-committee consisting of Messrs. Victor Hart, H. P. E. Harding, M. G. Duncan, Otto Thomas, C. A. Smith, J. W. G. Brooker, and F. A. Hardy met recently to discuss the question of representation upon the A.C.U. General Committee, and it was unanimously recommended that, in order to give every affiliated club an equal voice in the control of affairs, a revised system of election of club representatives should be instituted in accordance with the following scheme: (1.) At least twenty-eight days prior to the annual general meeting the secretary shall issue requests in writing to all affiliated clubs to nominate individuals for representation on the General Committee to the number of the agreed club representation. Such nominations must be received from the clubs not less than fourteen days prior to the annual general meeting. Thereupon the nominations shall be printed on a voting paper and circulated to the clubs, who shall return them completed to the A.C.U not later than three days prior to the annual general meeting. (2.) Such ballot paper shall contain the names and towns of residence of the individuals nominated, together with the name of the club of which the nominee is a member, and the names of the club or clubs nominating him. (3.) The result of the voting shall be reported by the secretary at the annual general meeting of the council, and the stipulated number receiving the largest number of votes will then be qualified to serve on the General Committee.

ONE-DAY SPRING TRIAL.—The above event will be held on Saturday, March 2nd, starting from the Swan and Sugarloaf Hotel, Croydon, at 8.30 a.m. The course will extend over about 160 miles in a southerly direction, the luncheon stopping place being at Tunbridge Wells. Motor cyclists who are willing to act as honorary observers along the route between Croydon and Tunbridge Wells are invited to send their names to the secretary, the A.C.U., R.A.C. Buildings, Pall Mall, S.W.



The new Auto Cycle Union sign to be exhibited outside recommended hotels for motor cyclists.

Will Makers Support the T.T.?

THE above question is being asked by almost everyone interested in the T.T. races, to be held in the Isle of Man on Friday, June 28th, and Monday, July 1st. Every motor cyclist knows that practically the whole of the trade have signed a bond which places them under a heavy penalty if they directly or indirectly support the races. Naturally, a bond becomes null and void if the signatories agree that it shall be cancelled, and the question now arises will the Manufacturers' Union, in view of public opinion, waive the bond or allow it to run its course? At the time of writing no one can say definitely what the trade decision will be, but a meeting which was to take place after these pages had gone to press would decide the matter, and we know which way the wind was blowing.

Considerable indignation was caused among Manxmen, motor cyclists, and, in fact, certain manufacturers, members of the trade union, by the letter sent to the Manx Highway Board, urging it to refuse to grant permission for the T.T. races to be held this year on the grounds of danger, etc. It now transpires that the communication was not sanctioned by the motor cycle section of the Manufacturers' Union at all, and that the members of that section do not recognise the document

Naturally this letter has been interpreted by motor cyclists to mean that motor cycle manufacturers are opposed to sporting events.

The makers' contention is that they have done nothing to discourage sport; their view is that they have endeavoured to prevent a professional race, and had the Auto Cycle Union been willing to confine the race to amateur riders they (the manufacturers) would have done nothing to interfere with the contest in any way. The A.C.U. did not see eye to eye with the makers, and decided to hold an open event which according to the makers has altered the circumstances, and the Tourist Trophy Race bond now requires some further consideration. We are informed there is no lack of cohesion among the makers, but the altered conditions justify them in reconsidering the question. We think the real situation is that the Manufacturers' Union thought that without their support the A.C.U. would abandon the races, or they would at least confine them to amateur riders, which was the desire of the makers. The A.C.U. have, however, gone ahead, obtained the necessary permission to use the Isle of Man roads, already secured a fairly important entry, and the opinion now is among a number of makers that they cannot afford to be left out. We should not be surprised if the "bond" were thrown to the wind.

A SUGGESTED SILENCER.

THE primitive form of silencer is a straight pipe of uniform bore. A step toward efficiency is made by perforating this. The series of holes, by which a portion of the escaping gas is released, lessens the pressure and volume, thus reducing the impact occurring at the main outlet. No coercion is, however, brought to bear; as much of the gas escapes as pleases. Now I propose to force the escape by pressing in the side of each perforation furthest from the valve. By this means the holes become a series of scoops, and that a good percentage of gas shall escape becomes a point assured. By making the pipe of diminishing bore—of course increasing the number of perforations in ratio to increasing pressure—this point is further assured. The coiling of the pipe is a natural outcome of the cumbrousness of an efficient length of pipe.

The point aimed at in evolving what might be styled "The Snake Silencer" is a combination of the above essentials in a form neat, readily assembled, and cheaply manufactured.

This it is proposed to do by making it in two portions, an outer and an inner, each to be a hollow cone—the former bearing the impress of a convex spiral, constantly diminishing on its outer surface; the latter a concavity to match; the pair forming, with the latter wedged within the former, a continuous duct joined at its interstices by a double sheet, or sheet-like, connection of metal, an integral part of the whole.

The material used might be copper, brass, or aluminium spun, or pressed, or both; or iron, cast or pressed. The efficiency being in no way impaired so long as the form were retained, the material and method would be of no importance, and would be decided by economy. Spun and pressed aluminium would be, probably, found most satisfactory.

In the accompanying sketches I have attempted to illustrate the complete contrivance. The inner portion is the complement of the outer.

The joint between silencer and exhaust pipe would be made to suit exigencies The pipe might be tapered off, wedged in, and secured by a pin and two nuts; or, better still, a permanent union could be affixed to the silencer. Neither method would involve any difficulty.

Except for the initial cost of plant, which need be by no means great, the whole process would be inexpensive.

Two alternatives offer regarding the position of the perforations, which might consist of one or more rows, the total area exceeding that of the entrance to the silencer. If on the outside, the escape will be in all directions. Perforated on the inside, with the small end of the cone sealed, the gases would be ejected at the large end in a uniform direction. No cut-out would be required.

H. A. ROGERS.

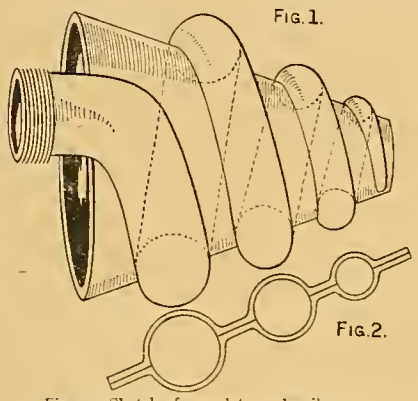
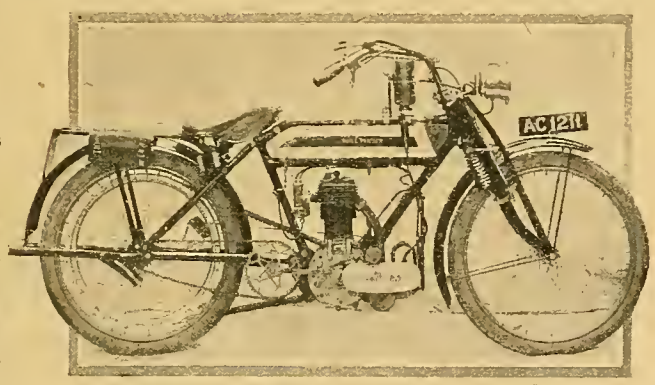


Fig. 1.—Sketch of complete snake silencer.
Fig. 2.—Section of one side of cone showing method of putting together—
The perforations which may be inside or outside are not shown.

THE NOBLE-PRECISION.

Herewith we illustrate a new motor cycle built by Alfred Noble and Co., Stoneleigh Works, Hill Street, Coventry. The machine is on standard lines, being fitted with Druid forks, dropped top tube, and the Precision engine unit. Great attention has been paid to the detail work on this machine, and it has obviously been constructed by a practical rider. It is noticeable, for instance, that the petrol and oil pipes are carefully annealed and left unplated. The stand and carrier are particularly substantial. 2in. Davidson filler caps are used on the tank, while the lubrication is by the Best and Lloyd semi-automatic system.



A specimen of the 3½ h.p. Noble with Precision engine.

The bottom bracket is formed so as to make the attachment of a counter-shaft gear a simple matter should it be desired—that is, by undoing two nuts and removing the pedalling gear.

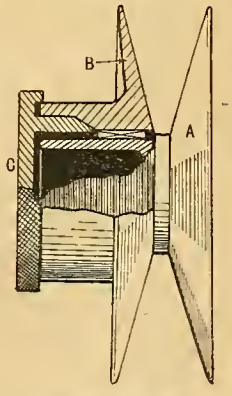
The standard machine is fitted with Dunlop 26in. × 2½in. tyres and 1in. Midland belt. The handle-bars are very comfortable and are bent in a pleasing sweep, the ends being well dropped so as to give a natural position to the rider's wrists. Both front and rear mudguards are of unusual width. Altogether the machine has a smart and workmanlike appearance, and throughout it is built on standard lines, with a dropped top tube to give a low position.

THE 8 h.p. CHATER-LEA ENGINE.

Though the Chater Lea Manufacturing Co. have been manufacturing engines for same time, Mr. Chater-Lea recently told us that even now many people were of the opinion that his engine was not made at the Golden Lane works. This is absurd, as we have seen the engine actually being manufactured, and a very interesting engine it is. This twin-cylinder, 85 × 85 mm., is designed specially for the propulsion of the Chater-Lea No. 7 sidecar machine and the Chater-Lea quadcar, and has a low compression so that it may keep cool. Not the least interesting part about it is the valve gear, which is both simple and ingenious. Though it is a twin-cylinder fitted with mechanically-operated inlet valves, there are only three timing wheels—that on the main-shaft and the two half-time wheels. On the two latter there are two sets of cams, one set, internally cut, operating the inlet valves, and the other set on the other side of the wheels of the usual type working the exhaust valves. Each set of valves is controlled by rockers with rollers at the end engaging with the cams, so as to reduce the friction to a minimum. The internal exhaust lifter is interesting, consisting as it does of a flat-ended spindle to which the control arm operated by Bowden wire is fastened. The flat end, which has rounded edges, presses against the exhaust rockers when turned, and thus raises the valves.

NEW NORTON PULLEY.

Mr. J. L. Norton has lately produced an extremely simple and ingenious adjustable pulley, which he has patented. Herewith we give a sketch showing the principle. The inner flange A carries a boss, which is screwed on the outside and has a keyway cut in it. A key fixed to the outer flange B fits this, and allows B to slide but not to revolve. C is a milled cap which is screwed internally to fit the screwed boss on A. Machined on this cap is a coned face, cut at such an angle that, so long as the belt is in position forcing the flange B outwards, it grips a corresponding coned face in B and locks the whole pulley solid.



The new Norton adjustable pulley.

MILITARY MOTOR CYCLING NOTES



BY "CELERITER"

ALL motor cyclists who in the past have taken part in Army Manœuvres should feel sympathy with Mr. Stewart in his present unfortunate predicament, for it is to him they are indebted for being invited to take part in the operations; for it was he who organised the intelligence service and to a great extent defrayed the expenses thereof out of his own pocket.

Those motor cyclists, therefore, who in recent years have taken part in Army Manœuvres will have watched with great interest the trial of Mr. Stewart for espionage at Liepsig. Mr. Stewart has paid the penalty of being too keen. Last July, ignorant of the German language, he went over to the Fatherland during the Morocco crisis to find out for himself what the chances of war might be. Within forty-eight hours he was arrested as a spy, locked up for six months, and now at his trial he has been given three more years of confinement. For some years past Mr. Stewart has during manœuvres been attached to the staff of the Cavalry Division. We motor cyclists who like to take part in Army Manœuvres will miss him this year—his tact, his energy, unfailing good humour, and kindly consideration for all those with whom he came in contact. The Germans may call Mr. Stewart a spy and imprison him as such, but those of us who know him vote him a "jolly good fellow," and will be glad to see him back.

Motor Cyclists for Manœuvres.

It was Mr. Stewart who was asked last year to draw up a report for the authorities on the best means of obtaining motor cyclists for manœuvres, and it is an open secret that two alternatives were set forth.

The first was that which *The Motor Cycle* has consistently advocated, that of forming a Motor Cycle Staff Corps as an independent unit of the Territorial Army, the members being attached for drill, etc., to the nearest Territorial unit, but grouped in sections all over the kingdom. The other alternative was officially to recognise the motor cyclist sections belonging to the thirteen cyclist battalions, giving the men suitable petrol allowances and special pay to cover the wear and tear of machines. For reasons of economy the second alternative will be adopted, and in April next we may expect to hear that motor cyclists will be organised on the lines suggested in my notes last month.

This Year's Army Manœuvres.

It is proverbially unprofitable to attempt to foreshadow forthcoming events, but there seems every indication, provided Parliament assents, that this year Army Manœuvres will be held on a very big scale over much the same ground as was contemplated last year, that is, in East Anglia. In August there will be a cavalry concentration of four or perhaps even five brigades, and it is on the cards that four or six battalions of Territorial cyclists will also be called upon to take part.

The dates will probably be from September 14th to the 19th. Also there will be the Divisional Manœuvres, when cyclists and motor cyclists will be employed, lasting until Mid September, when the season will finish up with a week of grand manœuvres for all arms. Motor cyclists who wish to participate should take steps soon to join one of the Territorial cyclist battalions, as it is more than likely that outsiders who do not join this year will not in future years be invited to come out and participate in the fun and excitement of Army Manœuvres. These prophecies may be false, but unless I had good reason to believe them approximately correct I would not put them forward.

The Ideal Military Motor Cycle.

In view of the divergence of opinion amongst motor cyclists as to the most suitable form of motor cycle for military purposes, it would be interesting to have the opinions of those who have most experience. In this matter it must be remembered how very few experts there are, if any, for a man may well be an expert in all that regards the riding and handling of his machine and yet be a novice in military matters, or *vice versa*, and since the readers of *The Motor Cycle* are more likely to be expert motor cyclists than expert soldiers, it might be as well to postulate some of the most important features that a machine should possess from the purely military point of view in order to approximate the ideal military mount.

A machine used for military purposes must essentially possess the following characteristics:

1. Be able to go dead slow amongst troops, and as fast as possible on an open road. It must not only be foolproof and weather-proof, but liable to as little mechanical derangement or tyre trouble as possible, and it must have sufficient power to be able to start on a steep gradient if stopped on a hill.
2. It must have sufficient power to tow a cyclist when required, or to carry the blankets, spares, and kit of its rider.
3. It must be particularly well-sprung, especially as regards the front forks. Now almost any two-speed free engine of high power when suitably built up is able to fulfil the above, but at the same time it is extremely advisable that a military machine should not be so heavy that when the engine is at fault the rider is powerless to move the cycle along.

I do not pretend to be a motor expert, but I have ridden many and various types of machines at Army Manœuvres, and my experience leads me to believe that if it were possible to mount a three-speed 4 h.p. twin engine on to a light frame so that the cycle complete would not exceed one hundredweight we should then have something as near the ideal as possible.

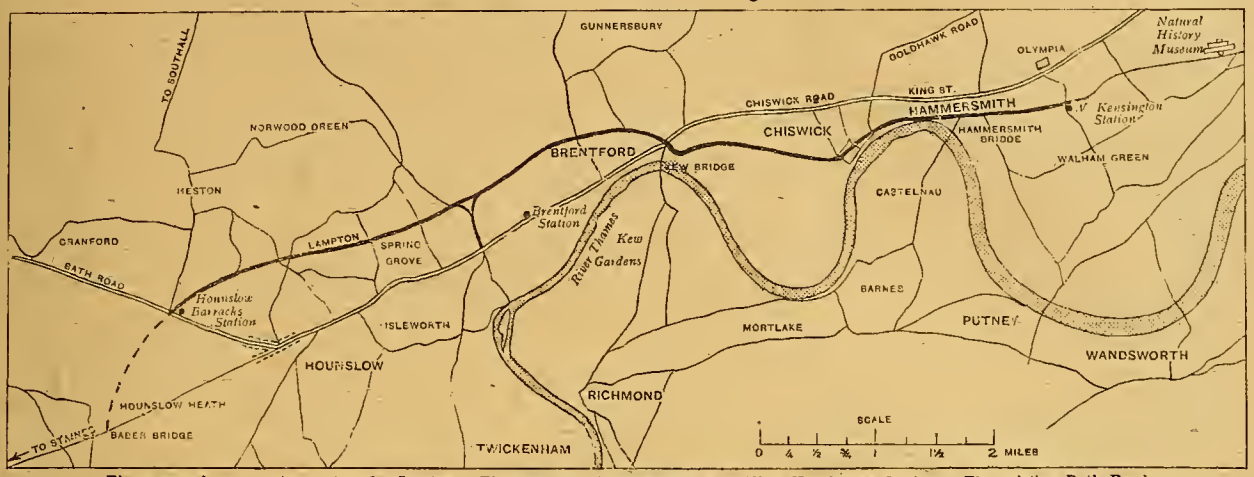
One point to remember is that one does not want a machine that needs a lot of adjustment, or that is difficult to start. Nor does one want a racer. A machine that can average 30 m.p.h. on an open road and climb any gradient from a standstill is what is required. Doubtless such a machine if made would also find a ready market amongst non-military riders.



SIDECARING AT NINETY-NINE.

The veteran sidecarist is the Rev. H. M. Sherwood who died a few weeks ago at Pershore. In the warm weather he was fond of riding in a sidecar attached to his son's 1911 Triumph. The deceased gentleman rode a boneshaker bicycle in the sixties; it was therefore fitting that he should find the sidecar a great improvement upon a Bath chair.

A New Western Artery for London.



The proposed new western artery for London. The eastern end commences near West Kensington Station. The existing Bath Road is shown by a double line.

SEVERAL announcements have been made of late which serve to show that active steps are being taken to better the lot of Metropolitan motorists. If the road conditions are improved for the car user the motor cyclist will derive ten times more benefit. Only those who are active users of motor bicycles can appreciate how much a good surfaced road not thronged with heavy traffic means to them. The latest announcement is that of the Road Board, which proposes to construct a new westerly main road exit from the Metropolis. That such a road is wanted there is no shadow of doubt. Hammersmith Broadway, King Street, Hammersmith, and the disgraceful Brentford "bottle-neck," with its double line of trams, are objectionable and dangerous items in a long tram-laid road, which riders even in these days of flexible engines do not care to face on a single-geared machine. Thanks to the courtesy of the secretary of the Road Board, we have been enabled to go over the original map showing the course of the projected new route.

The proposal is that the West Cromwell Road should be extended and a bridge made over the West London Extension Railway, and the road carried due west, leaving Hammersmith Broadway on the right. The river is then followed for a short distance, and a due westerly direction is then struck until Kew Bridge is reached. This is an important point, as here the proposed new route crosses the Hounslow Road at right angles, strikes north-west and then west, completely avoiding the abominable Brentford. When level with the end of Brentford's death trap, a loop road is to be constructed leading into the Hounslow thoroughfare. Leaving this point, the road extends through comparatively open country until it joins the Bath Road at Hounslow Barracks. From this point a dotted line is shown on the map leading to East Bedfont, on the Exeter Road.

Of Special Value to Motor Cyclists.

No words can express the value of the proposed route to motor cyclists entering or leaving London, but the question arises as to whether or not the Road Board, which has none too much money to spend, would be justified in paying £850,000 of the estimated cost—£1,750,000. Would it not be better for the Board to continue its good work of improving the main thoroughfares in the country by smoothing out dangerous corners, and thus making its influence more widely felt throughout the kingdom? We are inclined to think so, but we do hold that the Brentford by-pass might be built, as the condition of the main road through the Middlesex capital is a disgrace to civilisation. Reverting again to the proposed route, we noticed, on perusing the original map, that apparently very few existing roads will be utilised, and as the building of the new road will necessitate much pulling down of old buildings, the purchase of much property, and the construction of a bridge, the estimate appears to be none too liberal.

New Route to avoid London.

In another direction much good road work is being done, and that is the mapping out of a route round London, which is being carried on by the Royal Automobile Club, and very shortly a map, drawn up by a capable committee, will be published by a well-known firm which will enable motorists to see how to travel east to west and north to south on the outskirts of the Metropolis without once meeting thick traffic. The county rider is equally benefited thereby, as by using it he will be able to travel, say, from Doncaster to Croydon, from Hounslow to St. Albans, or from Dartford to Enfield without getting tied up in a maze of carts, omnibuses, and electric trams. Such a map was given in an issue of *The Autocar* about two years ago, but the R.A.C. map will be sold separately, and will be on a rather more elaborate scale. That such a map is badly wanted is clearly proved by the number of routes we are asked to work out so as to avoid London

MOTOR ROLLER SKATES FOR ROAD AND TRACK.



A French production fitted with a V type two-cylinder engine of ¼ h.p. It is said to be capable of 30 m.p.h. The accumulators and spare wheels are carried in a case attached to the waist of the skater.

Midland Open Reliability Trial



Scene at the Start

ON Saturday last the Sutton Coldfield A.C. annual open reliability trial was held over typical winter roads, the entries, which numbered 106, constituting a record for a reliability trial. The chief award was the Colmore Cup, presented by Mr. F. S. Whitworth, and held by Mr. W. D. South, who last year rode a Scott. The best represented makes in the trial were the Premier and Rudge with seven each, there being six New Hudsons and five Quadrants. Thirty-four amateurs entered for the special prize, but this section performed disappointingly, for only six accomplished non-stop runs.

The start was at 9.30 a.m. from the Gun Barrels Hotel, Bristol Road, Birmingham, and just before the starting time the long line of competitors' machines, together with the many officials and spectators, formed an impressive sight.

The regulations for this trial were, in our opinion, most praiseworthy. The ordinary long-distance trial over a flat course is as uninteresting and valueless as one can possibly imagine, and the Sutton Coldfield A.C., recognising this fact, select several well-known acclivities for embodiment in the route, and rely mainly upon the hill-climbs to weed out the weaklings. Further, they demand that the hills be taken on the run with hot engines, which makes the test still more instructive and nearer the ideal.

104 Starters.

One hundred and four entrants answered to the roll-call, and they were despatched in pairs at half-minute intervals. One of the non-starters, James St. John, the energetic trials hon. secretary, unfortunately skidded on the exceedingly treacherous road surface, breaking his magneto bracket. Most of the competitors had adopted some special form of mud shield, undertan or belt guard, on the lines of those illustrated in these columns of former trials, and they were badly needed on Saturday, for the roads could hardly have been in a worse state. There were two ladies in the trial, Miss Berend and Miss Hough, the former riding a new model, a three-speed O.K.-Precision with sidecar, the bicycle of which had an unusual design of frame, half diamond and half open. Harry Reed's Dot was noticeably quiet, and on investigation we found he had adopted a recent suggestion of *The Motor Cycle*, viz., to fit an extra large silencer under the frame of the sidecar. C. R. Collier was competing in his first reliability trial. Fancy the English champion a novice!

Marks were awarded for ease of starting, so that before getting under way several competitors lost marks, including A. B. Wade (Zenith sidecar), whose passenger pushed and leapt over the back of the sidecar, A. D. Arter (James), E. Smith (Regal-Precision), A. Winchcombe (Macbeth), N. M. Hall (Corah), and W. W. Douglas (Douglas). Within a stone's throw of the start Cheshire (Triumph) experienced a fall.

The route was *viâ* Longbridge and Rednal to Rose Hill. This ascent is not a severe one, but hereabouts the surface was particularly slippery, which accounted for the fact that at this point no less than sixteen spoilt their non-stops. Through Bromsgrove to Crabb's Cross, Alcester and Stratford presented no difficulties except to keep upright. N. Crozier (2¾ Levis) had the high-tension wire come out of the magneto terminal, and he lost much time fitting it in again.



W. D. South (3½ h.p. Rudge) at the top of Sunrising hill.



Competitors preparing to re-start from the foot of Warmington Hill.

H. Morgan suffered a burst tube, and later the throttle wire broke and caused a further stop. H. Egginton (New Hudson sidecar) broke a valve and, after almost having made up time, punctured. P. Brewster (Norton sidecar) retired, as his low gear would not grip, whilst T. Peck (Rudge) also dropped out of the running, reason not stated. Miss Berend was early in trouble with her new machine, and was considerably delayed, but undaunted, she kept on.

The conditions overhead were excellent, a fine bracing air with the sun doing its best to peep from behind the clouds. Troubles were continually befalling the riders, though of a minor character. W. H. H. Sheldon (Regal-Precision) several times pulled up with mysterious overheating, W. Russell (Quadrant) was passed effecting an adjustment. E. V. Pratt (Ivy) stopped to clear the jet which choked three times during the day, and N. Allday (3½ Alldays) had a petrol pipe break.

The Ascent of Sunrising.

At Sunrising a small crowd had gathered, and we noticed with pleasure that on this occasion there was no dearth of officials to observe the performances. It is indeed good to think that so many honorary workers are willing to give up their Saturdays in the interest of the pastime, and so many others willing to loan official cars.



J. Chater-Lea (8 h.p. Chater-Lea) making a good ascent of Warmington. He made a non-stop run.

Sunrising, as was to be expected, fetched many out of the saddles, but to turn to the other side there were some really excellent performances. Jack Woodhouse (Regal-Precision) was up first, and travelled at a fine pace to the top; albeit, his machine was noisy, and at the finish he was disqualified along with R. H. Clark (T.T. Corah) for excessive noise. W. D. South (Rudge)—the holder of the Colmore cup—by dint of judicious slipping of the clutch, managed to get up, his slow speed being explained by a choked jet. R. Lord (6 h.p. Rex) created an excellent impression as also E. F. Baxter on a sister machine; W. W. Douglas, who with back down shot up as if he were Tee Teeing, and H. C. Newman (Ivy) performed splendidly. Probably R. H. Clark (T.T. Corah) was the fastest, but there was little to choose between him and G. Brough (6 h.p. Brough), W. F. Newsome, and E. W. Cheshire (free engine Triumphs). By the way, the two last mentioned machines were noticeably quiet, probably in anticipation of the much-boomed A.C.U. cut-out rule being carried into effect for the first time!

Good Ascents on Variably-geared Mounts.

Some of the variably geared machines, which travelled slowly but surely, included Arter's James, Graham Dixon's and Beard's New Hudsons, Winchcombe's Macbeth, Gibb's Douglas, Greaves's Enfield, Bushby's twin Humber, Taylor's Rudge, North's Ariel, Mundy's P. and M., and Slaughter's L.M.C. P. J. Evans climbed practically all the way on the top gear of his 1912 3½ h.p. Humber, which machine, beside being prettier, is much more powerful than its predecessors, a fact of which we have had practical proof.

One or two had very hard lines. For instance, Seymour Smith (Norton) got almost on the crest of the hill but his high gear just failed him. Fenn missed gear on his Humber and stopped. P. Moss (3½ h.p. Premier sidecar) found the gradient just too much for his limited engine power and ran alongside a few yards; whilst E. A. Marshall (2¼ h.p. S.I.A.M.T.) got up with pedalling—an excellent performance for such a tiny engine. But the eye-opening performance was by H. Newey on a 2¼ h.p. two-stroke Levis. He had no pedals, yet climbed the hill unaided in astonishingly good style.

The passenger machines, generally, made a fine showing, C. R. Collier on an 8 h.p. Matchless with double belt drive and V.S. two-speed gear made no mistake; the two Morgan runabouts had plenty of power in hand, which may also be said of F. Smith's Clyno, Colver's Enfield, J. Chater Lea's sidecar, and Yates and Bryant's Rex-Japs. F. W. Finnemore (Veloce) broke his high gear and retired, whilst W. Russell (Quadrant) punctured.

Continuing along the ridge of hills, competitors descended Edge Hill, turned to the right in the village of Kineton and proceeded to Warmington, where a stop was arranged. The hill was really no test after Sunrising, especially as engines

Midland Open Reliability Trial.—

were cooled at the foot, yet three came to a standstill. Lunch was taken at the Red Lion, Banbury, one and a half hours being allowed.

The Re-start.

It was not permitted to start engines on the stand, and on receiving the word to go, officials noted the ease with which the engines responded and deducted marks accordingly. The return route was over the same roads as in the morning, the *pièce de résistance* being the ascent of Edge Hill, the corresponding ascent to Sunrising, concerning the respective severity of which gradients no two motorists are agreed. There was a big crowd of motor cyclists and car owners assembled to witness the fun.

Practically all who did well on Sunrising reproduced their success, South (Rudge) making no mistake this time. Newey made another brave attempt to conquer the hill on his little Levis, but failed near the top owing to a slipping belt. Descending after tightening it, he annihilated the 1 in 6 gradient with ease. H. Pickering (2½ h.p. A.J.S.), who was going well, missed his gear change, but picked up again after assisting with his feet, which procedure involved loss of marks. By the way, this rider had a small water tank on the top tube which allowed cold water to drip on to the exhaust valve cap. Moss (Premier) had to stop this time, as also Spittle. H. Berwick (until lately riding Humbers and now with the New Hudson Co.) had to pedal, but Rigby, Dixon, and Beard (3½ h.p. New Hudsons), appeared to have plenty in hand. The twin Rexes ridden by Lord and Baxter again pleased the spectators, and were certainly among the fastest machines. Brough let his machine out on this hill for the first time. C. Peers (Lincoln Elk) had a most unusual experience. He was going well when the celluloid inflator attached to the bottom rail must have come in contact with the hot cylinder, for it burst into flames. W. S. Overend (P.V.) was again brought off solely owing to belt slip. Miss Hough (Douglas) received a well-deserved ovation. The only exciting incidents were when Gibb (Douglas) and Rowlandson (Rudge) finding themselves side by side were seized with the spirit of emulation, and crouching low down on their machines, tried to outpace each other. Eventually the little Douglas forged ahead and won by ten yards, on its low gear at a speed of about fifteen miles per hour. The other incident was when three sidecarists, all going well, were almost abreast and scattered the line of spectators. Marshall was another who failed owing to a slipping belt, the muddy state of the roads no doubt accounting for this trouble. Walsgrove (Hazlewood) this time made a clean climb, though he fumbled his gear on Sunrising. A. A. Tye (on a 2½ h.p. Premier) stopped on the very crest; he deserved a better fate. Viggers (Enfield) had a stop near the Round Tower, so he went home to Banbury.

After descending Sunrising the only ascent of note was Gorcutt Hill near the finish, which troubled nobody except



F. H. Stevenson (Morgan Runabout) climbing Warmington. He was one of the few amateurs to make a non-stop run.



The usual busy scene in the yard of the Red Lion Hotel, Banbury, the turning point of last Saturday's trial.

Midland Open Reliability Trial.—



E. W. Allday (3½ h.p. two-speed Alldays) nearing the summit of Edge Hill where the gradient is steepest.

the unlucky, one of whom was Miss Hough, whose gear lever jumped into neutral. Troubles were not over. N. R. Davies (Blumfield) ran over a fowl, which broke his front wheel mudguard, so he threw it away. As may be imagined, he presented a pretty spectacle plastered with mud from head to foot. South had to change a plug near Alcester; Reed's auxiliary silencer had broken away from its brackets and was trailing, then a stone got in his belt rim and spoilt his clean record; H. A. Shaw, whose four-cylinder F.N. was as quiet as any, was considerably delayed; P. Pumphrey (Arno) was obviously in fear of a fall, and no wonder, for as we rode behind him we detected his wheels out of line; H F. Ladsgrove (B.S.A.) did well, but for a skid. Here is a genuine case of ill-luck! L. Yates (Rex-Jap sidecar) climbed all hills and had a splendid run until fifty yards of the finish, when he came to a standstill with a dry petrol tank. The finish was arranged at the Alcester Road tram terminus, and all but one or two managed to get in before dark, but there was insufficient light to attempt any examination of the efficacy of the mudguarding as had been intended.

Complete Official Results.

The band of willing officials after collecting the competitors' cards repaired to a private house, and thanks to the arrangements of Mr. Howard Smith, the hon. sec., the list of non-stops was announced the same evening.

There was some grumbling concerning a wrong measurement on the route card to the control at Warmington, and a number of competitors contended that they lost time at this check owing to being misled by the mileage At a meeting of the Sutton Coldfield A.C. Committee on Monday evening it was wisely decided to ignore this check entirely..

The official results are given hereunder, the order of merit in the case of equal marks being determined by the time at the secret check:

COLMORE CUP AND GOLD MEDAL.

		Marks.
1.	Frank Smith (5-6 h.p. Clyno sidecar) ...	200
2.	G Brough (6 h.p. Brough)	200
3.	Rex G. Mundy (3½ h.p. P. and M.)	200
4.	R. Lord (6 h.p. Rex)	200
	B. W Lee (3½ h.p. B.S.A.)	200
5.	H. Graham Dixon (3½ h.p. New Hudson) ...	200
6.	W. B. Gibb (2¾ h.p. Douglas)	200
7.	A G. Rigby (3½ h.p. New Hudson)	200
8.	P Phillips (2¾ h.p. Douglas)	200
9.	R Holloway (3½ h.p. Premier)	200
10.	T Pollock (3½ h.p. James)	200
11.	C. R. Collier (8 Matchless sidecar)	200
12.	H. V. Colver (6 h.p. Enfield sidecar) ...	200
	J. Oliphant (3½ h.p. Premier)	200
13.	H. J. Woodgate (3½ h.p. Macbeth)	200
	S. A. Rowlandson (3½ h.p. Rudge)	200
14.	H. C. Newman (3½ h.p. Ivy-Precision) ...	200
15.	W. F. Newsome (3½ h.p. Triumph)	200
16.	V. Busby (2¾ h.p. Humber)	200
17.	J. H. Slaughter (3½ h.p. L.M.C.)	200
18.	W. W. Douglas (2¾ h.p. Douglas)	200
19.	J. Chater-Lea (8 h.p. Chater-Lea sidecar) ...	200
20.	H. Greaves (2¾ h.p. Enfield)	200
21.	R. E. Guest (8 h.p. Matchless sidecar) ...	200

J. Woodhouse (3½ h.p. Regal Precision) gained full marks, but was disqualified owing to the noise of his engine.

All the above scored full marks, the under-mentioned, who made non-stops, lost marks for being late at controls, or for difficulty in starting.

	Marks.
P. J. Evans (3½ h.p. Humber)	199
Vernon Taylor (3½ h.p. Rudge)	199
F. C. North (3½ u.p. Ariel)	198
F. H. Stevenson (8 h.p. Morgan runabout) ...	198
E. Harvey (5 h.p. A.J.S. sc.)	198
S. Fontaine (3½ h.p. Quadrant)	198
E. Smith (3½ h.p. Regal Precision)	198
R. W. Duke (3½ h.p. Zenith Gradua)	197
G. Bryant (6 h.p. Rex-Jap sc.)	197
E. F. Baxter (6 h.p. Rex)	197
Douglas Arter (3½ h.p. James)	194
H. Pickering (2½ h.p. A.J.S.)	194
A. Winchcombe (3½ h.p. Macbeth)	192

PRIVATE OWNERS' AWARDS.

R. E. Guest was awarded the gold medal for the best performance by an amateur.

F. H. Stevenson wins the pair of Hutchinson tyres for best performance other than a prize winner.

Thirty-eight competitors accomplished non-stop runs, and of these twenty-four scored the maximum of 200 marks.

There were a number of plucky riders of single-geared machines in the trial. Those who showed up well on the hills included R. Holloway's Premier, Newsome and Cheshire's Triumphs. Clarke's Corah, Baxter's Rex, Brough's Brough, Heaven's Bradbury, Marshall's S.I.A.M.T. (with pedalling), and Newey's Levis.

We heard of two competitors who failed on Rose Hill, Rednal, only six miles from the start, and went home.



Three sidecarists descending Sunrising Hill on the homeward journey. P. Moss (Premier) leading H. V. Colver (Enfield), followed by C. R. Collier (Matchless).



Anglesea M.U.

This newly-formed club is affiliated to the A.C.U. President, Mr. H. R. Davis; captain, Mr. O. H. M. Williams; hon. treasurer, Mr. H. Pickford; hon. secretary, Mr. G. E. Roberts.

Haslingden M.C.C.

A general meeting will be held on Thursday, the 29th inst., at the headquarters of the club, Blackburn Road, at 7.30. All motor cyclists in the district are cordially invited.

Oxford University M.C.C.

There will be a motor cycle hill-climb for members of the University, at Horsepath, near Oxford, on March 9th. Entries to be sent in to Mr. A. C. Hardy, New College, Oxford, before March 7th.

Derbyshire and North Staffordshire A.C.

A motor cycle section has been formed with a strong committee and a present membership of twenty-five. Applications should be addressed to the hon. secretary, Mr. E. Russell, Nuns' Pingle, Ashbourne Road, Derby.

North-west London M.C.C.

A novel competition will be held on Saturday, March 2nd. This will take the form of a night paperchase, or Will-o-the-wisp competition. Lanterns as well as paper will be used to mark out the course. The competition will be of about one and a half hours' duration. Competitors will meet at the High Stone, Barnet, at 6.30 p.m., when the car carrying the scent will start.

Birmingham M.C.C.

The ninth annual general meeting was held at headquarters, on Saturday, the 17th inst. The following officers were elected for the year 1912: President, Mr. H. Austin; captain, Mr. R. W. Duke; treasurer, Mr. E. W. Winckle; trials secretary, Mr. H. J. Cox; secretary, Mr. R. Vernon C. Brook. Six new members were elected to the club. There will be an open hill-climb at Wenlock Edge on June 1st.

Mid Bucks M.C.C.

The annual meeting was held on Wednesday last when the following officers were elected:

President, Mr. A. C. de Rothschild, C.V.O., treasurer, Mr. T. Loader; captain, Mr. H. T. Ball; sub-captain, Mr. F. Edgington; vice-captains, Messrs. E. H. Eborn and G. Owen. An interesting programme was drawn up for the season and new members will be heartily welcomed by the hon. secretary.

Bishop Auckland, Darlington, and District M.C.

The winter reliability trial of the above club, for the Rex Motor Manufacturing Co's silver cigarette case, was held on January 28th last to Wetherby and back, and resulted in a tie between Presland (Chater-Lea), Foster (Triumph), and C. W. Smith (New Hudson). The winner will be decided on the best performance of the above three riders in the opening reliability trial.

Derby and District M.C.C.

At the annual general meeting the following officers were elected for 1912: Chairman, Mr. E. V. Clarke; captain, Mr. A. Ainsworth; hon. secretary, Mr. A. B. Bennett.

The competition for the Russell Challenge Cup will be re-run on the 24th inst. The course will be a circular one, starting from Allestree.

The open hill-climb will take place on March 30th at Oakamoor (between Ashbourne and Cheadle). There will be classes for T.T. machines, 3½ h.p. singles, large twins, and an all comers' event.

Wakefield and District M.C.C.

A meeting will be held this evening (the 22nd inst.) at eight o'clock, at the Graziers' Hotel, Market Street, for the purpose of forming a motor cycle club. Motor cyclists are invited to be present.

Worksop and District M.C.C.

At a meeting held at the Royal Hotel, Worksop, it was decided to form a motor cycle club, and the following officers were elected: President, Mr. R. Allen; vice-president, Mr. A. G. Tomlinson; hon. treasurer, Mr. G. Kemp; hon. secretary, Mr. F. Burton; 2a, Ryton Street, Worksop.

Chesterfield and District M.C.C.

The first annual dinner and presentation of prizes passed off very successfully on the 14th inst. at headquarters, the Hotel Portland, Chesterfield. In proposing the toast of "the A.C.U.," Mr. A. C. Seals pointed out that motor cyclists owed a great debt to that body which, by exhaustive test and trial, had done much to perfect the modern machine.

Chester and District M.C.C.

It is suggested that a motor cycle club be formed for Chester and district. All motor cyclists interested are requested to send their names and addresses to Mr. A. H. Catlow, Glen Auldyn, Kilmorey Park, Chester, and should sufficient names be received a meeting will be called to discuss the scheme.

Westmorland M.C.C.

The open hill-climb on Brigsteer Brow will include classes for lightweight singles up to 360 c.c.; singles, 480 to 580 c.c.; singles, unlimited; lightweight twins up to 480 c.c.; twins above 480 c.c.; variable gears over 480 c.c.; unlimited with sidecar; unlimited on time. The entries close on March 31st.

Essex M.C.

The open hill-climb takes place on the 16th March, and classes for all types have been arranged, including lightweights, 500 c.c., twin cylinders, passenger machines and runabouts. The venue of the hill will be kept secret, so that a fair chance is given to all competitors. Entry forms and particulars are now ready, and can be obtained from Mr. Ernest J. Bass, Bishops Stortford, Herts. Entries close on the 9th March.

Salford M.C.C.

At a meeting of the Salford motor cyclists, held on Thursday, the 15th inst., at the Langworthy Hotel, it was decided to form a motor cycle club. The following were elected as officers: Captain, Mr. A. Hopkinson; vice-captain, Mr. W. Jordon; treasurer, Mr. S. Chrisp; secretary, Mr. T. Metcalfe. The opening run was fixed for February 25th, start from Langworthy Hotel at 10 a.m. Intending members are invited to attend the run or write to T. Metcalfe, 193, Langworthy Road, Salford, who will willingly forward full particulars.

A.C.U. ONE DAY TRIAL.

Entries for the A.C.U. one day trial, on Saturday, March 2nd, stood as follows on going to press:

J. Kerr (3½ N.S.U.)
R. M. Brice (3½ Brown)
C. Tinline (3½ Rudge)
E. W. Cheshire (3½ Triumph)
W. F. Newsome (3½ Triumph)
G. T. Gray (3½ Rudge)
O. C. Godfrey (7 Indian sc.)
B. A. Hill (7 Indian sc.)
E. Frassetti (7 Indian sc.)
W. Cooper (3½ Bradbury)
Cecil Roberts (3½ Rover)
F. W. Applebee (2¾ Centaur)
R. Lord (6 Rex)
Frank Smith (5-6 Clyno sc.)

Entries close on Saturday.

Club News.—

Blackburn M.C.C.

This club, formed in July last, has now fifty members. The season is to commence with a club run and hill-climb, particulars of which can be obtained by members at the monthly meeting on the 29th inst.

Grosvenor M.C. (Manchester).

The opening run will take place on the 3rd of March next, to Bell's, Peover; meet headquarters, Unicorn Hotel, Altrincham, at 2.45 p.m. Other runs for the month will be: 13th March, Matlock: 17th March, Chester; 24th March, Southport; 31st March, Tarporley. The secretary, B. Turner, Wood Dene, Brooklands, Cheshire, will be pleased to receive names of any intending members.

Bolton and District M.C.C.

The annual general meeting was held at headquarters on Wednesday, the 14th inst. It was decided again to affiliate to the A.C.U. The subscription for 1912 is to be 7s. 6d. The officers elected for season 1912 are: President, Mr. H. Holmes; chairman, Mr. Curwin; vice-chairman, Mr. A. R. Batten; hon. secretary, Mr. N. Haddock; treasurer, Mr. Leadbetter; captain, Mr. S. Parker; vice-captain, Mr. L. Hordman.

Chorley and District M.C.C.

A meeting was held on Wednesday, the 14th inst., at Court Chambers, Chorley, for the purpose of establishing a motor cycle club. The various officers and committee were elected, and it was decided to adopt the above name. The secretary will be pleased to receive enquiries from any motor cyclists in the district. The temporary headquarters and secretary's address are Court Chambers, 17, St. Thomas's Road, Chorley.

Maidenhead and District M.C.C.

On Monday, February 12th, an enthusiastic meeting was held at the Saracen's Head Hotel, Maidenhead, to discuss the formation of a club for Maidenhead and district. Mr. A. W. Heybourne was appointed chairman *pro tem.*, and rendered great assistance in framing the rules and conducting the meeting After due discussion, a club was formed, about eighteen members being enrolled. It was decided to limit the radius for members to six miles, to hold competitions, and to have weekly runs every Thursday and Saturday alternately. A discussion then took place as to whether quadcars and runabouts should be eligible, and it was finally decided not to admit them. It was decided that the headquarters for the present should be the Saracen's Head Hotel. The officers for the ensuing year were then elected: Captain, Mr. R. C. Owen-Wells; vice-captain, Mr. C. C. Browne; hon. sec. and treasurer, Mr. H. H. Hacker.



Messrs. Neal and Deakin, designers and makers of the Canoelet sidecar, are practical motor cyclists, and are frequently to be seen in the Birmingham district with their 6 h.p. Triumph and Canoelet sidecar.



The A.C., or Auto Carrier, is being largely adopted by commercial houses as a handy and cheap means of distributing the lighter form of goods. The carrier illustrated is one lately pressed into service by a typewriter company.

Motor Cycling Club.

The opening run will this year again be to the Old Ship Hotel, Brighton, meeting at Crawley, on Saturday afternoon, March 23rd, and returning the following day. The Exeter medals will be presented in the evening.

Southampton and District M.C.

The annual general meeting was held on the 14th inst., when the following officers were elected: President, Mr. A. H. Oakley; captain, Mr. S. Docking; vice-captain, Mr. S. W. Duggins; hon. sec. and treasurer, Mr. H. Percy Young. At the conclusion of the meeting Mr. A. H. Burnand read a paper on carburetters.

Cardiff M.C.

The newly formed motor cycle section has now been inaugurated, and it has been decided to affiliate to the R.A.C. and A.C.U. A club room has been arranged for at the Globe Hotel. The opening run will be to the Speech House, with a hill-climb in the vicinity. Two open meetings will be held in conjunction with the South Wales A.C. A mass meeting of motor cyclists will be held at the Globe Hotel, on Saturday, the 24th inst., at 8 p.m. Particulars of competitions may be obtained from Mr. T. Parry 24, Boverton Street.

Surrey M.C.C.

The following competitions have been arranged for the coming season: March 27th (Wednesday), opening run and speed-judging contest; April 24th (Wednesday), members' hill-climb; May 15th (Wednesday), petrol economy competition; June 1st (Saturday), penalty run; June 25th and 26th, reliability trial to Exeter, for the Triumph Challenge Cup, starting on Tuesday night; July 27th (Saturday), twelve-hour reliability trial.

It is hoped to arrange also with the Hants M.C. Union an inter-club hill-climb, to be held on a Saturday about the end of August.

For the chief competitions there will be an attendance qualification for the first prizes. Those members who propose to enter for these competitions should therefore endeavour to qualify in good time by regular attendance at club events.

Scouting Section.—The sub-committee is at present preparing a scheme and programme for the coming season. Those members who are interested in this work are requested to send in their names at once to Mr. G. S. Williams, Sandycombe, Ridgeway, Woking.

LOST AND FOUND.

We receive many letters regarding accessories, etc., both "Lost and Found," which we are unable to find space for. As these particular matters are of interest to two persons only, viz., the finder and the loser, we keep a list of such articles, and, should we receive a letter from the finder which corresponds to the article lost, the two persons are put into communication.

Questions and Replies



A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor. "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

A Low Registration Number.

Please let me know in what county I can get a low registration number for my motor cycle.—R.W.C.

Low registration numbers can be obtained in the following Irish counties: Clare, Carlow, Donegal, and Monaghan.

Harrogate to Cockermouth and Colwyn Bay.

Would you kindly tell me the best route, avoiding all the large towns possible from: (1.) Harrogate to Cockermouth (Cumberland). (2.) Harrogate to Colwyn Bay (North Wales)? Would you kindly also state distance to these places?—C.E.H.M.

We have pleasure in giving you the following routes: (1.) Harrogate, Ripley, Ripon, straight along the road to Thirsk until you meet Leeming Lane, go straight along Leeming Lane, turning left at Scotch Corner, turn left again, and go through Bowes, Appleby, Keswick, to Cockermouth. The distance is approximately 119 miles. (2.) Harrogate, Blubberhouses, Skipton, Gisburn, Clitheroe, Preston, Rufford, Ormskirk, Liverpool, by ferry to Birkenhead, Eastham, where turn for the road to Hawarden, and go through Holywell to Rhyl, whence there is a direct road to Colwyn Bay. The distance is approximately 150 miles.

The Uses of a Two-speed Gear.

(1.) Do you consider the B.S.A. two-speed free-engine gear quite reliable and foolproof, and suitable for hard wear? (2.) Would a two-speed gear be any great advantage for town and traffic work with sidecar? (3.) Am I right in presuming that when riding solo one could throttle down as slow with a free engine, and keep one's balance, as with a two-speed gear? (4.) Would the two-speed gear eventually pay for itself by saving the belts and tyres?—G.H.C.

(1.) The gear in question should be suitable. (2.) Such a gear would be of an undoubted advantage for traffic riding with a sidecar. When riding solo you would hardly need the low gear at all, but it would be useful in traffic and you would have it always in reserve in the case of an emergency. (3.) With a free engine one can slow down almost as much, provided a good clutch be fitted and the gear ratio itself be not too high. (4.) A two-speed gear would be more valuable in enabling you to get up any hill and to start on any gradient than it would be in the saving of belts and tyres.

Sidecar for Devon.

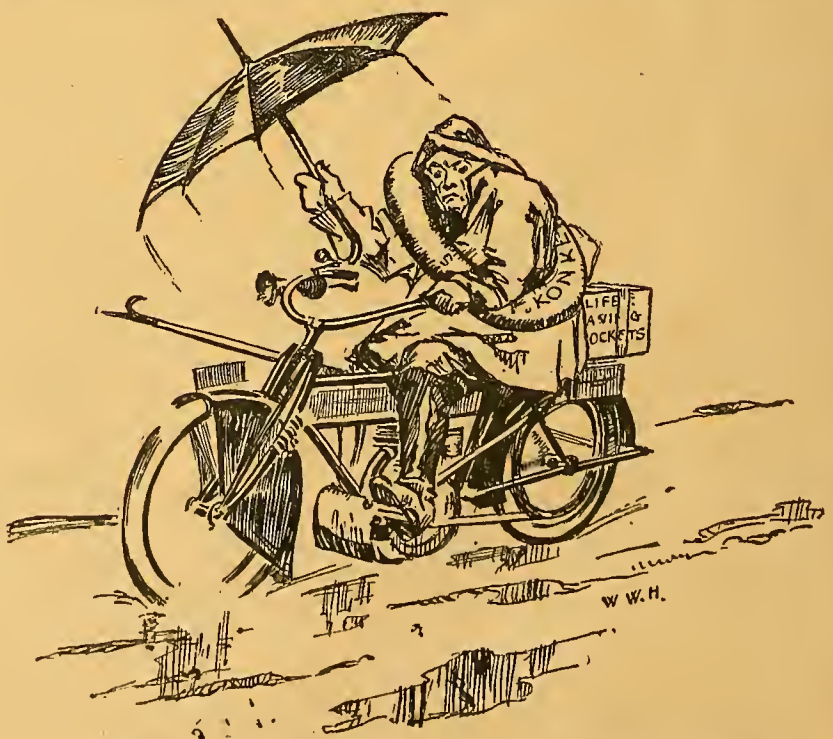
(1.) Is the 6 h.p. Matchless with two speeds and free engine quite suitable for occasional sidecar use, and sidecar tours, say, in Devonshire? I presume this machine would be quite easily handled as a solo mount in traffic? (2.) Is the Millennium two-speed and free engine quite suitable for above machine? (3.) Is Maude's Portland sidecar, advertised in the columns of *The Motor Cycle* a good investment and quite suitable for use with above machine? Is the weight of this sidecar (78 lbs.) heavy or quite normal? (4.) Jones £3 3s. speedometer—what of this? (5.) Could you tell me approximately the weight of the Matchless single-geared machine?—H.M.B.

(1.) The machine in question would be quite suitable for use with a sidecar, and would be quite easy to handle in traffic. (2.) The gear mentioned is good, but the one used by the makers of the machine is the V.S. (3.) Yes; the sidecar in question is good value for the money asked for it. We should say that the weight is normal. (4.) The speedometer mentioned here is excellent. (5.) We think that the weight would be about 180 lbs.

Maximum Intensity of Spark.

Can you help me in this matter? I have a Bosch magneto, D.A.2, and when I fully advance my magneto I do not get such a brilliant spark at the plug as when the lever is about half-way advanced. I certainly have my make and break a bit wider apart than usual.—B.M.

This is only natural. The maximum position occurs rather in advance of half-way in the quadrant. As you advance the spark further its intensity becomes a little less, but as the intensity increases with the speed you get quite as strong a spark at high speeds as you would do at low or medium speeds when the lever was at maximum position. The extra gap at contacts would cause later firing.



A SUITABLE OUTFIT SUGGESTED BY THE RECENT INCLEMENT WEATHER.

Upkeep of a Big Twin.

I am thinking of changing my 3½ h.p. machine, which I find insufficient to take a sidecar, for an 8 h.p. Matchless. But before doing so, I want to know, roughly: (1.) How many m.p.g. an 8 h.p. engine and sidecar would go, and also whether the average upkeep of a twin would be much more than a single. (2.) Do you recommend the Matchless for rough hill work and for all-round work?—R.F.D.B.

(1.) You must, of course, expect the upkeep to be rather more than that of a single-cylinder. The machine would run between fifty and sixty miles to the gallon of petrol. Also, you would have to pay more for tyres and belts. (2.) We can thoroughly recommend the machine for rough work.

Fitting Hub Clutch without Alteration to Frame.

Some months ago, my brother in India wrote to a certain accessory manufacturing company ordering a free engine clutch hub and wheel, stipulating that they were to be built so as to fit his 1911 Douglas (single-speed model) "without structural alteration" to the frame. The company undertook to carry out the order, but on receiving the hub and wheel my brother found that the width over cones was 5¾in., whereas the width of the Douglas forks is only 4¼in. I have therefore been in correspondence for him with the makers of the hub, who first asserted that no structural alterations were necessary, "as it is quite an easy matter to pull the forks open with one's hands to the width required." On writing to Messrs. Douglas Bros., however, I was informed that the forks cannot be pulled open to the desired width. In their last letter to me the makers of the hub still maintain that no structural alteration is necessary. (1.) Do you consider that forks normally 4¼in. wide can be opened without structural alteration to take a hub which is 5¾in. over cones, or have you ever known of a case where it has been done? (2.) If it cannot be done, have I a legal claim to a refund of the amount paid for the hub and wheel? (3.) If the makers are liable to refund the cost of the hub, can they also be compelled to refund the cost of carriage to India?—K.D.K.

(1.) Messrs. Douglas are right, the forks cannot be forced open to such an extent by hand without damaging the frame. (2 and 3.) There is a good claim against the accessory manufacturers, but it is only your brother in India who can commence proceedings. You cannot issue a summons here on your brother's behalf, but a solicitor can do so in the County Court, provided security to the satisfaction of the Registrar is given for the costs of the other side, in the event of the other side winning the case. The solicitor's own undertaking with regard to this would be sufficient. As the accessory manufacturers evidently knew that the hub and wheel were going to India, we think the carriage both ways could be recovered from them. In our opinion, your brother should return the goods before the action is commenced, and request that his money be refunded. The best plan is for you to see a soliciter before you do anything further.

Adjusting Petrol Level.

Petrol runs over top of jet, even when back wheel is on stand, off ground. On steep hills the engine pulls up, with absolute loss of power with a choked sensation—presumably too rich a mixture. I have adjusted the float until there is hardly any play at all (which ought to reduce level). Float appears to be good, air and petrol tight. For example, under no circumstances whatever can I ever get up Brockley Hill, Edgware. Otherwise the engine is in splendid condition in all respects, and I think the sole trouble is carburation.—J.H.L.L.

You may get over the difficulty by adjusting the collar on the needle valve. First of all, mark the spindle so that you will know exactly where the collar was originally; then heat this, put the needle loosely in a vice and gently hit the head, so that the collar is slightly raised. This should have the required effect. Detailed instructions for adjusting the petrol level are given in "Motor Cycles and How to Manage Them."

Registration and Liability.

I have bought a second-hand motor cycle for the purpose of renovating and selling at a profit. The machine was I believe, registered at Bristol, but no registration fee has been paid for some while, as the machine has not been ready for riding, and the original number is still on it. If I cancel this number now, will the authority drop on me for any arrears, and if I get a licence for it will the same thing happen?—G.E.O.

No, you are not liable, except for the transference of the number to your name. What you had better do is to write to the authorities, tell them the facts of the case, and ask them, if the number has not been cancelled, to transfer it to your name. If the number has been cancelled, then you are liable for the full registration fee of 5s. The registration refers to the machine and not to the owner; and if the registration has not been cancelled, all the authorities can do is to exact a fee of 1s. for transferring the number to you.

EDITORIAL NOTE.

Owing to the increase in the number of enquiries desiring readers' experiences of motor cycles and accessories, the feature has been transferred to page 189.

PILLION SEATS.



Though the above method of carrying a passenger must always be characterised as risky, it is surprising how many ladies, utterly oblivious of the chances they take, willingly accept an invitation to try the carrier seat. We recently heard of a married couple undertaking a long tour in the manner depicted. The machine is a free engine Singer.

Electric Lighting for Motor Cycles.

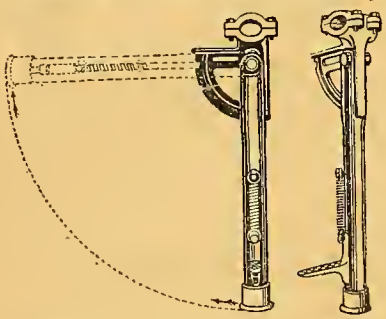
Messrs. Nye and Co., 16, Hampstead Road, Tottenham Court Road, N.W., are the London agents for the Polkey-Jarrott electric lighting set described in the last issue.

Motoring in Ireland.

We are in receipt of the latest Burrow's Guide, entitled "Motoring in Ireland," which is published under the auspices of the R.A.C. Touring Department. The whole matter has been carefully gone through by Mr. H. A. T. Moroney, the capable manager of that department, and it is interesting to note that the letterpress has been written by Mr. C. G. Harper, the author of "The Autocar Road Book." A feature is a bird's eye map of the country, showing the principal roads and natural fatures.

New Sidecar Stand.

Messrs Pace and Co., London Colney, Herts., have lately introduced a new Ukantes sidecar stand. This follows the principle of the same firm's motor bicycle



stands, which have been on the market for many years. The sidecar stand is fixed to the axle by means of four bolts, and is securely locked in whatever position the leg may be put. The bolt which locks the leg of the stand is controlled by a pedal, so that the stand may be put in and out of action without stooping to lock and unlock the bolt. When out of use the leg is in alignment with the chain stays of the motor bicycle.

New Northern Depot.

The Northern Depot, Ltd., Leece Street, Liverpool, advise us that they are shortly opening a new showroom in the old Argyll premises in Liverpool, and will show "everything motorish." They are sole agents for a large district for the A.C. Sociables and Kerry-Abingdon motor cycles, and carry a good stock of electrical and rubber goods, XL'All saddles and Jones speedometers. The depot will be under the management of Mr. S. Kenneth Broadfoot, A.M.I.E.E.

Lamps.

The latest catalogue of Messrs. Miller and Co., Ltd., Miller Street, Birmingham, is aptly entitled "A Catalogue of Lamps that won't go Out," and is an excellently got up and instructive publication. In it the various types of lamps manufactured by this well-known firm are clearly listed and described, and also various component parts of which they are constructed. A novelty which is a speciality of Messrs. Miller and Co., Ltd., is an acetylene tail lamp, which should appeal to users of quadcars and such like vehicles.



Crank Pin Design.

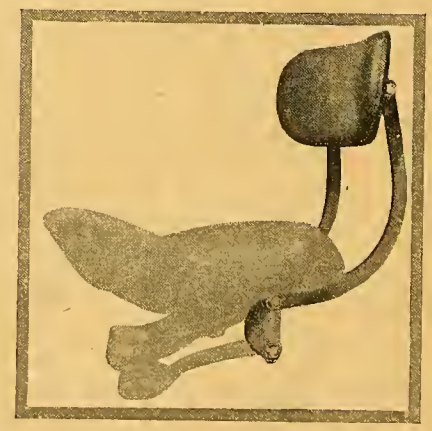
The English patent number of the N.S.U crank pin design published on February 8th, page 152, is 8,192, 1911.

Change Speed Gears.

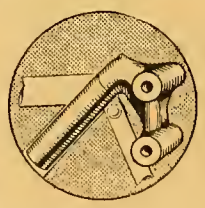
The Wulfruna Engineering Co., Ltd., Great Brickkiln Street, Wolverhampton, advise us that they are in a position to give prompt delivery of the Thornton two-speed gear, of which they have the sole control.

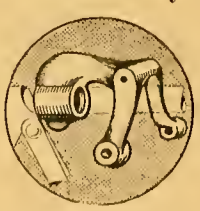
Low Riding Position.

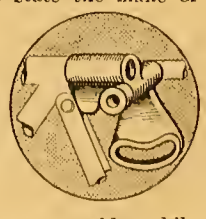
We illustrate a new XL'All back rest which has been embodied in the design of the anatomical seat. It is designed to



rise and fall with a parallel motion, thus avoiding the rubbing of the rider's back, and it is fixed sufficiently low to be easily cleared when mounting or dismounting. XL'All saddles are now made and supplied with saddle pins to give the lowest possible riding position with any make of motor cycle. This has been rendered possible by a careful study of the design of all makes. A motor cyclist ordering one of these saddles has merely to state the make of







his machine, and the most suitable saddle support is available. We illustrate three examples.

Trade Announcement.

Mr. Harold Williamson, late of the Rex and Singer companies, has been appointed to an important post with the Vacuum Oil Co.

Nortons in London.

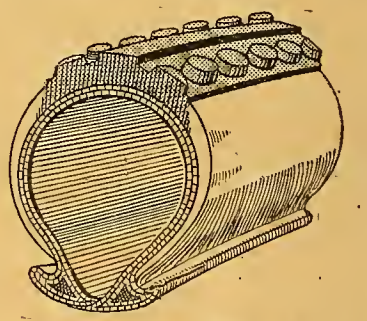
Norton motor cycles can now be inspected at Messrs. Robertsons, 157, Great Portland Street, W., who are the London agents. Facilities for acquiring the same machines by deferred payments are being made by Harrod's Stores.

Two New Engines.

Messrs. Job Day and Sons, Leeds, will be shortly placing on the market two new motor cycle engines of 3¾ h.p. and 7½ h.p. These engines have been designed by Mr. H. A. Smith, the designer of the Illston and Smith engines which were recently described in these pages.

A Long Climb.

From Glossop to the Snake with thirty-two stones weight and sidecar has recently been climbed by H. Egginton, of Sheffield, on a 4½ h.p. Excelsior of which he had just taken delivery. Such a feat is not exceptional on summer roads, but there was a good depth of snow on the occasion in question.



The J.P. rubber-studded non-skid cover (sold by John Piggott, Ltd., which is sent out with a guarantee for 3,000 miles. We are about to try one.

Efficiency.

The Otago Motor Cycle Club held its annual hill climb at Saddle Hill, Dunedin, on December 9th, and George Patterson, jun., again did the best performance of the day for efficiency on his 2¾ h.p. three-speed New Hudson.

New Depot.

We hear that Wrench's, of 120, Hampstead Road, N.W., have opened new premises in Euston Road, under the management of Mr. W. Hayes, who, in addition to his commercial experience, is a practical rider.

Catalogues Received.

We have received an interesting catalogue from the Roberts Motor Tyre Co., Gripwell Works, St. Mary's Row, Birmingham. This includes a good show of all rubber goods which are of interest to motor cyclists.

The 1912 Brooks book for motor cyclists contains detailed descriptions and illustrations of all Brooks motor cycle specialities from the patent anti-vibratory motor cycle seat to the carbide carrier and sparking plug case. The booklet is artistically printed, and is of interest to all motor cyclists. It can be obtained on application to Messrs. J. B. Brooks and Co., Ltd., Great Charles Street, Birmingham.

Do you realize?

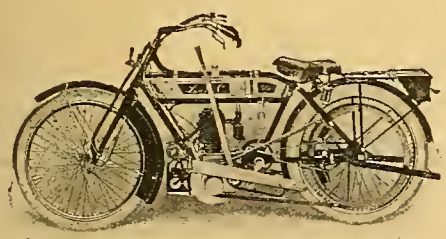
1. *That the* **"Zenith"** *opens a new field of enjoyment?*
2. *That the* **"Gradua"** *gear, by its infinite variation of gear ratio change, reveals pleasures hitherto undreamed of?*
3. *That its reliability, power, and speed are some of its outstanding features?*
4. *That if you have not got a Zenith you are missing a great deal?*

Let us send you particulars. ZENITH MOTORS, LTD., Weybridge.

THE **L.M.C.** **Complete Catalogue for 1912 NOW READY.**

POST FREE ON APPLICATION.

Before placing your order for new machine, don't fail to get a copy.



3½ h.p. L.M.C. Cob. Free Engine Model.

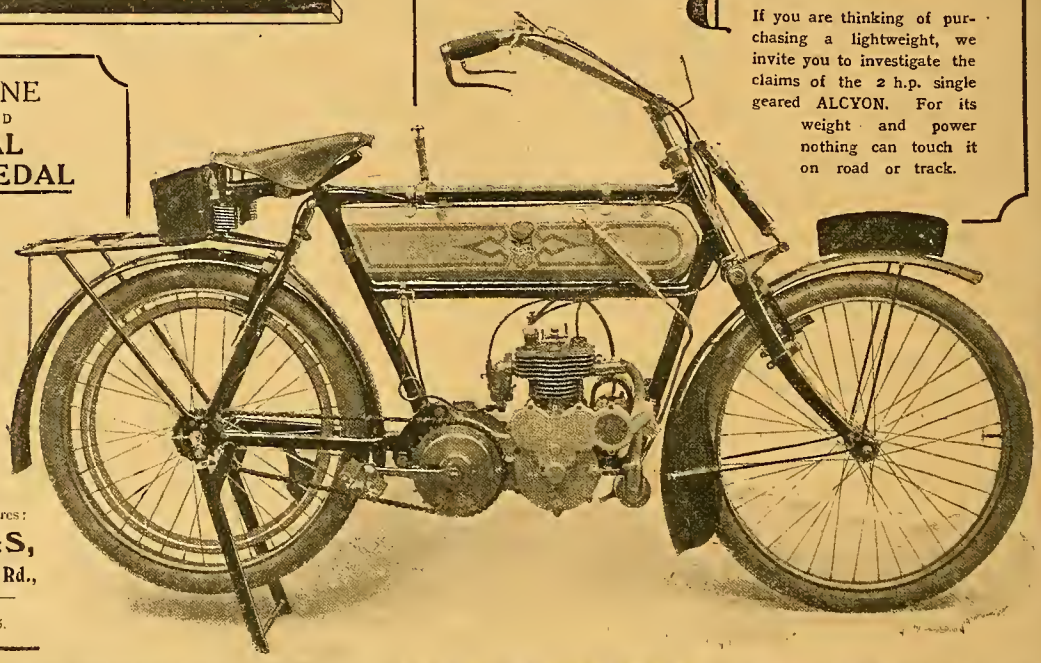
The Ideal Touring Machine.
"Starts like a Car."
New Model, with L.M.C. Engine, 89 x 92.
Two-speed Gear, Sprung Footboards.
Specially Designed for Sidecar.

Makers: THE LLOYD MOTOR ENGINEERING CO., LTD,
L.M.C. Works: 132, Monument Road, BIRMINGHAM.

ALCYON LIGHTWEIGHT

Vastly superior to any other machine of its size.

If you are thinking of purchasing a lightweight, we invite you to investigate the claims of the 2 h.p. single geared ALCYON. For its weight and power nothing can touch it on road or track.



THE MACHINE
WHICH WAS AWARDED
THE SPECIAL
GOLD MEDAL
FOR THE
MOST
MERITORIOUS
PERFORMANCE
IN THE
A.C.U.
SIX DAYS'
TRIAL
(The most severe test ever held).

Catalogue by request, or trial by appointment.

Sole British Concessionnaires:
G. N. HIGGS,
31, Vauxhall Bridge Rd.,
— London, S.W. —
Telephone—Victoria 1215.

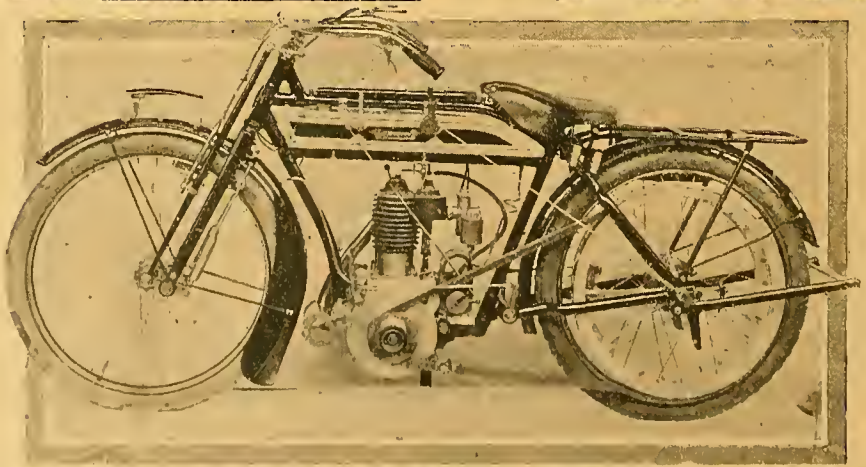
THE QUADRANT ARMSTRONG

3-SPEED GEAR and FREE ENGINE

MEANS A PERFECT MACHINE FOR ALL PURPOSES.

THE POWERFUL 4½ PASSENGER.

AGENTS WRITE FOR TERMS.



AGENTS WRITE FOR TERMS.

London Showrooms: Cass's Motor Mart, 5, Warren Street, Euston Road (opposite Tube Station). Nottingham Showrooms: Ropewalk.

QUADRANT, Lawley Street, BIRMINGHAM.

WRITE FOR LIST.
16 distinct and distinctive models.

NOW, CHAPS!

This week we have a specially good thing for you: we have got a bargain in the way of 1911 new Premiers. These are very similar to the 1912 models, and, of course, you know the quality of their workmanship. The prices are, roughly, £10 less than the price of the machines of the same horse-power 1912 models. We have not yet got the full details of the machines that we have purchased, but by the time you read this advertisement we shall have got them in stock; and if you will drop us a line, we will have great pleasure in giving you full particulars. We are sure it is an opportunity that you will not want to miss. We are prepared to sell them for cash, or exchange with approved machines; but we are sorry we cannot entertain deferred payments on this particular consignment.

In addition to the above, please note that we have the following 1912 models in stock here at Morecambe: P. & M.'s, Scotts, Jap-Eats, Matchless, Clynos, Zeniths, Douglas, Indians, Lincoln Elks, Rudges, Triumphs, Bradburys, Premiers, Humbers, A.C.'s, and we have Morgan Runabouts on order for delivery each month. See last week's advertisement for a portion of our contract, which will be £40,000

In second-hand machines we feel quite sure that we have the largest stock in the world, at prices ranging from £5 to £50.

Kindly note that when we advertised machines on the deferred at £3 down, we did not mean that you would be able to get a 1912 Triumph for this sum down, or anything of that kind. A fortnight ago two or three hundred people wrote offering to give £3 down for 1912 models. This, of course, is a ridiculous proposition, and is one that we never intended to convey would be accepted. What we can do is to supply you with any kind of a motor cycle, with one or two exceptions, on the deferred at a slight increase in the price, and the amount of deposit will be governed by the value of the machine. We hope this is now clear to you. We are, of course, still taking on exchanges, and we await your esteemed order for the motor cycle that you are thinking of purchasing. Our terms of business are still the same; what you purchase from us you have on approval, and, if not satisfactory, you return it and have your money back in full. This does not, however apply to new machines. You cannot have any new machine for three days on approval, and then, after trying it, return it, as it will not then be a new machine, but a second-hand one. If you buy it you keep it, as you are supposed to know all about a new machine before you get it. We find it necessary to speak plainly through this column, and it is our only excuse for making the remark.

We are agents for every machine that is worth having, and in all cases we have purchased nothing but two-speed gear models. At the same time the makers will be pleased to alter and supply a single-speed in lieu of the two-speed if our clients so specify.

We are open to purchase from the trade any quantity of Clynos, Zeniths, Douglas, Scotts, P. & M.'s, Morgans, Matchless, and Triumphs, and we await the traders' offers. Our terms are cash with order in all cases. We ask for no credit. We are prepared to purchase from the public a few high-class 1911 machines (two-speed gear preferred), also any quantity of second-hand speedometers, Whittle belting, F.R.S. and Lucas lamps, leather clothing, up-to-date saddles, magnetos, and we will either buy for cash, or exchange, just as the bhoys like. We are in a position to do well for everybody, and we feel sure we can trade with every one of you if you don't want something for nothing—we are not entertaining this kind of thing for the present. If you have never been to Morecambe, make it in your way to blow in, and you will be startled at the size of the stock. We have the new in one department, and the second-hand in the other, and the same applies to accessories. If you don't see what you want in either case, ask for it. In the Accessories Department we are declining, and we want to shift the stuff, so let's have your orders to help us to do it. Send postcard for lists, which are ready waiting to be sent out. They are no use to us here, and were got for the purpose of distribution.

We always prefer the bhoys to come down if possible, as we think it pays them. When they come here they can pick a machine from the stock and try it on the road if they wish to do so, and we can then explain the various levers, etc. On the top of this the railway fare will be less than the cost of carriage on the machine, and the satisfaction is bound to be much better. We are anxious to see you, and have nothing to hide. We have not an elaborate place here, but we have the stock, and that is what you want. We are rough and ready in our system of business, but we get through the trade. We are anxious to make your acquaintance, whether you buy anything or not. We are always very busy, but can spare the time necessary to show you what we have got to sell, and we now look forward to the pleasure of seeing you. Easter will soon be here, and you will want a machine then if you do not want one before. Those who come first will get the pick. Our stock is getting less, as we have had more customers this last week than for the last three months. The weather is improving, and the roads getting better, and we therefore expect the enormous boom to continue.

If you don't know where Morecambe is, then we beg to say that it is four miles from Lancaster, and is on the L. & N.W. and Midland Railway systems, and you can get excursions several times a week from all parts. At the same time, if you come down in the morning, you can ride the machine home, as we do not sell machines that can only be taken home by train.

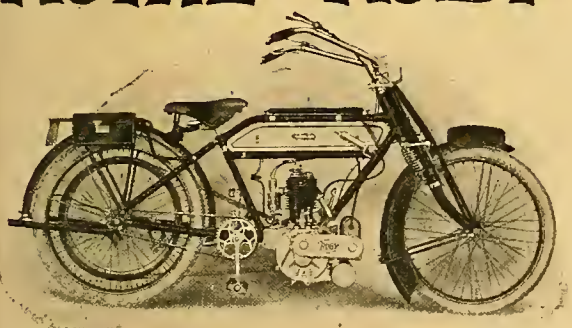
We are glad to note that our forcible advertisement of a fortnight ago did so much good. We always find it best to speak straight out, and say what we mean. We do not wilfully mislead anyone. If you cannot deal straight with us, you can't do a straight deal with anyone. If you are thin-skinned, and are sooo insulted, our advertisements may insult you. However, while we should be sorry if this is the case, we like to tell you straight out what we will do and what we won't do; so you know what to expect.

As you know, we are the only firm that advertise on these lines, and we find it a most satisfactory way of reaching the public. Misleading advertisements are no use either to the trade or to the public. This is a fault that no one can place on the shoulders of Hitchen's, of Morecambe. We may possibly lose trade through being so outspoken, and we are sorry if this is the case, and take this opportunity of apologising to the Sunny Jims who are likely to be insulted by our bluff letters, but we can only say in closing that "they ask for it." Remember our address:

HITCHENS, MORECAMBE,

For a packet on the 'Phone, our No. is 112; for a Telegram, "Motor, Morecambe."

ROYAL RUBY



1912 Catalogue of Motor Cycles is now ready, and you should have a copy of this up-to-date publication.

Our Specification cannot be beaten.

J.A.P. ENGINES.
CHATER-LEA FITTINGS.
BOSCH MAGNETOS AND PLUGS.
BROWN AND BARLOW'S CARBURETTERS.
DRUID SPRING FORKS.
BOWDEN FRONT BRAKE, EXHAUST LIFT, AND MAGNETO CONTROL.
DUNLOP TYRES AND BELTS.
BROOKS' SADDLES AND TOOLBAGS.
VILLIERS' FREE ENGINE HUB
ROC TWO-SPEED AND FREE ENGINE HUB.
STURMEY-ARCHER THREE-SPEED AND FREE ENGINE HUB. Etc., etc., etc.

EVERYTHING OF THE HIGHEST POSSIBLE GRADE.

Manufactured by

The Royal Ruby Cycle Co., "Ruby" Works,
Great Ancoats Street, MANCHESTER.

ONLY 1/5 DOWN

Buy your 1912 machine in this easy way.

Do not disturb capital, but buy any well-known make you prefer and pay for it by monthly instalments. This is the gist of

PAGETS PURCHASE PLAN.

Pay one-fifth of the total with order and the balance during 12 months. The premium added to the makers' price ranges from 2%, and we can generally give

PROMPT DELIVERY.

Write for full particulars.

ONLY 1/5 DOWN

PAGETS, LIMITED,
10 and 11, Jermyn Street, London, S.W.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex

SECTION IX
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

FOR PROMPTNESS WITHOUT PREMIUM



WE LEAD.

We have still a great Stock of nearly 50 best 1912 Models, and nearly 200 New 1911 and Genuine Second-hand Machines in stock, and we give

IMMEDIATE DELIVERY NOW OR ON ANY AGREED DATE WITHOUT PREMIUM

TO-DAY'S LIST SENT FREE.

4982.	8 h.p. 1911	**BAT-J.A.P.**	£40 0
4989.	3½ h.p. 1911	2-speed **HUMBER** ..	£36 10
4990.	3½ h.p. 1910	**TRIUMPH,** free engine	£39 0
4993.	2 h.p. 1910	**WOLF**	£18 10
5001.	3½ h.p. 1911	free eng. **BRADBURY**	£40 0
5003.	7 h.p. 1911	free engine **INDIAN**..	£4S 0
5005.	2 h.p. 1911	lightweight **HUMBER**	£28 0
5006.	3½ h.p. 1910	T.T. **TRIUMPH**	£34 0
5007.	5 h.p. 1910	2-speed **V.S.**	£3S 0
5009.	3½ h.p. 1911	T.T. **BRADBURY** ..	£3S 0
4944.	2¾ h.p. 1911	**DOUGLAS**	£30 0
4945.	2¾ h.p. 1911	2-speed **DOUGLAS,** Model E	£38 10
4954.	3½ h.p. 1909	free engine **TRIUMPH**	£33 10
4956.	3½ h.p. 1911	2-speed **HUMBER** ..	£37 10
4957.	8 h.p. 1910	**BAT** and sidecar	£40 0
4964.	3½ h.p.	4-cylinder **F.N.**	£12 0
4913.	3½ h.p. 1911	free engine **TRIUMPH**	£42 10
4919.	2¾ h.p. 1911	2-speed **DOUGLAS,** Model E	£38 0
4921.	2¾ h.p. 1911	2-speed **DOUGLAS,** Model E	£38 10
4926.	3½ h.p. 1910	**PREMIER**	£27 0
4929.	3½ h.p. 1907	**TRIUMPH**	£23 0
4933.	3½ h.p. 1909	**TRIUMPH**	£30 0
4934.	3½ h.p. 1908	**TRIUMPH**	£2S 0
4939.	3½ h.p. 1909	**TRIUMPH**	£23 0
4941.	3½ h.p. 1911	2-speed **HUMBER** ..	£33 10
4874.	1½ h.p.	**F.N.**	£7 10
4893.	3½ h.p.	**PEUGEOT**	£20 0
4903.	3½ h.p. 1911	tourist **REX**	£30 0
4868.	8 h.p. 1911	2-speed **BAT**	£SS 0
4854.	3½ h.p. 1911	free engine **TRIUMPH**	£4S 0
4597.	3½ h.p. 1911	**ZENITH-GRADUA** ..	£42 10
4607.	3½ h.p. 1911	**KERRY-ABINGDON**	£32 10
4760.	5 h.p. 1911	free engine **INDIAN**..	£42 0
4863.	3½ h.p. 1911	**CHATER-LEA-J.A.P.**	£3S 0
4828.	3½ h.p. 1911	**JAMES**	£3S 0
4733.	6 h.p. 1909	**CHATER-LEA,** 2-sp., chain drive, and sidecar	£40 0
4727.	3½ h.p. 1911	**KERRY-ABINGDON**	£32 10
4533.	2 h.p. 1911	3-speed **HUMBER** ..	£3S 0
4723.	3½ h.p. 1908	**TRIUMPH**	£27 10
4758.	3½ h.p. 1911	single-speed **HUMBER**	£30 0
4420.	3½ h.p. 1911	free engine **PREMIER**	£42 10
4768.	2¾ h.p. 1911	standard **DOUGLAS**..	£30 0
4575.	3½ h.p. 1911	standard **BRADBURY**	£3S 0
4638.	3½ h.p. 1911	free engine **TRIUMPH**	£4S 0
4628.	3½ h.p. 1910	**TRIUMPH,** Mabon, variable gear	38 Gns

ASK FOR OUR TO-DAY'S LIST.

Send details of your present Motor Cycle, and receive our unequalled liberal exchange offer for same in part payment of a new model.

TELL US YOUR WANTS, and we will make you an offer of just what you need.

Warchopes

OFF FLEET ST., NEAR LUDGATE.
Telephone: 5777 Holborn.
Wires: Opificer, London.

9, SHOE LANE, LONDON, E.C.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. ooo, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

N.S.U., 3h.p., magneto, 1908, horn, and spares; a bargain, £12/10.—Higgleton, Ryhope.

3h.p. Singer, magneto, new tyres and belt, good running order; £16.—Apply, 9,702, *The Motor Cycle* Offices, Coventry.

RUDGE, 1912, standard, new; £48 cash; would exchange for 1910 or 1911 and cash.—Bibby, Electric Works, Morpeth.

1911 Scott, in perfect condition, and mechanically sound; owner buying 1912 Scott; price 50 guineas.—Arendale, Bishopton Lane, Stockton.

1912 Phelon and Moores, free engine Triumphs, Douglases, Bradhurys, B.S.A.'s, Enfields, in stock. 'Phone 1X2.—Stout's Garage, Egremont, Cumberland.

TRIUMPH, 3½h.p., 191 model, free engine, brand new cont of crate; to clear £52, with lamp and horn; a bargain.—Turvey and Co., The Motor House, Sunderland.

TRIUMPHS, Humbers, B.S.A., Royal Enfield motor cycles, lightweights, 2 speeds, free engines; write, wire, or 'phone for immediate deliveries.—Turvey and Co., The Motor House, Sunderland. Tel.: No. 626.

3½h.p Rex Motor Cycle, 1909 model, magneto, h.b.c., spring forks and seat, in splendid running order; £21 to clear.—Turvey and Co., The Motor House, Sunderland. Sole agents Triumphs, Humbers, B.S.A., Enfields. Coltthorpes Extra catalogue free

2¾h.p. 2-speed Free Engine Royal Enfield, 1911, done 1,350 miles, first-class condition; reasonable trial; £40, no offers.—Wilkinson, 35, Ashwood Terrace, Sunderland.

4h.p. Roc, magneto, Chater-Lea, footboards, perfect order, £25; 3½h.p. Fafnir and sidecar, Chater-Lea, torpedo tank, footboards, good tyres, all spares, fast and powerful, a bargain, £20.—Box No. 9,646, *The Motor Cycle* Offices, Coventry.

SECTION II.

York and Lancashire.

A.S.L. A.S.L. A.S.L.

SIT on Air Springs and Cushions to Ride.

LUXURIOUS Motor Car Comfort Awheel.

MANCHESTER and District Sole Agents; Inspection invited.—Motor Exchange, 32, Downing St., Ardwick Green.

HODOSON for Clynos (in stock).

HODGSON for Premiers (in stock).

HODGSON for Sidecars (in stock).

HODGSON, 10, Horton Rd., Bradford. Tel.: 5361.

The Halifax Motor Exchange

Largest Rex Dealers,

16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams, "Perfection."

£3 to £5 DOWN and 5/- weekly secures prompt despatch of

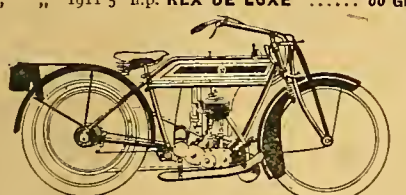
Twin **REX**, spring forks	£16 10
Lightweight **MOTOSACOCHE**, spray, runs well	£14 10
3 h.p. **QUADRANT**	£10 10
2¾ h.p. **KERRY**, spring forks	£10 10
Twin Magneto **MOTO-REVE**, Druids	£15 0
3½ h.p. **WOLF**, spray, smart, h.b. control	£12 10
3 h.p. **HUMBER**, chain drive	£9 10
5½ h.p. Twin **REX**, spring forks	£16 10
3½ h.p. **REX**, spring forks, reliable	£15 10
3½ h.p. **BRADBURY**	£15 0
3 h.p. **ANTOINE**, h.b. control, spring forks	£12 10
2¾ h.p. **DE DION**	£10 10
N.S.U. Magneto Lightweight	£15 10

£7 deposit and 10/- weekly secures—

Magneto **TRIUMPH**	£25 10
5½ h.p. Twin **REX DE LUXE**, mag.	£22 10
Four-cylinder **F.N.**, magneto	£19 19
3½ h.p. Magneto **REX**	£19 19
Twin **MOTO-REVE**	£19 19
F.N. Magneto Lightweight	£19 19
3½ h.p. Magneto **MINERVA**	£19 10
Magneto Twin **REX**	£19 19

TYRES. SPECIAL PRICES. APPROVAL.	
26 × 2 and 26 × 2¼ Clipper and Continental Covers	14/9
26 × 2½ Michelin Heavy Tricar Covers	25/-
24 × 2¼ and 26 × 2¼ Tubes	5/11

New Sidecars, with latest improvements	£4 19 6
Brand New 1911 3½ h.p. Tourist **REX**	43 Gns
" " 1911 2¾ h.p. Two-speed **REX** Junior	50 Gns
" " 1911 3½ h.p. Free-engine **REX**	48 Gns
" " 1911 3½ h.p. **REX DE LUXE**	57 Gns
" " 1911 5 h.p. **REX DE LUXE**	60 Gns



Liberal Exchanges in addition to Cash Discount.

GUARANTEED IN RUNNING ORDER.

1912 2¾ h.p. Two-speed **REX** Junior, NEW	£45 0
1912 Twin **REX** Sidette. In stock. NEW	£75 0
1911 3½ h.p. Tourist **REX**, done 750 miles	£32 10
1911 2¾ h.p. Two-speed **REX** Junior, as new	£39 10
1911 3½ h.p. **REX**, clutch model	£37 10
1911 5 h.p. Two-speed **REX DE LUXE**	£47 10
1910 7 h.p. **REX DE LUXE**, two speeds	£48 0
1910 7 h.p. Twin **REX**, HOT STUFF	£37 10
1910 5 h.p. Twin **REX**, very fast	£29 10
1910 5 h.p. **REX DE LUXE**, fine sidecar machine	£42 10
1910 3½ h.p. **REX**, very fast, special machine	£27 10
Magneto Twin **REX**, 1911 Mabon clutch	£21 10
1909 3½ h.p. Two-speed **REX DE LUXE**	£32 10
5½ h.p. Two-speed Twin **ROC** magneto, Druids	£32 10
1908 3½ h.p. Magneto **REX**, very fast	£22 10
1907 3½ h.p. Magneto **REX**, spring forks	£19 19
5½ h.p. Twin **REX DE LUXE**, Roc clutch, sp. forks	£22 10
Brand New 3½ h.p. **REX**, spring forks, and pedals	£31 0
Brand New Twin Magneto **REX**	£37 15
3½ h.p. Two-speed **N.S.U.**, smart	£21 0
1908 **TRIUMPH**, very powerful	£28 10
Magneto **TRIUMPH**, spring forks, specially low	£25 0
3½ h.p. **REX**, very fine condition	£15 10
Four-cylinder **F.N.**, magneto, spring forks	£18 18
F.N. Magneto Lightweight	£16 10
3½ h.p. Magneto **FAFNIR**, M.O.V.	£19 0
3½ h.p. **WOLF**, Stevens engine, h.b. control	£12 10
Twin Magneto **MOTO-REVE**	£17 10
3 h.p. **QUADRANT**, low frame	£10 10
3 h.p. **ANTOINE**, very smart machine	£12 10
2¾ h.p. **F.N.**, in very good order, recommended	£12 10
3 h.p. **HUMBER**, chain drive	£9 10
MOTOSACOCHE, Druid forks	£14 10
2¾ h.p. **KERRY**, spring forks	£10 10
3½ h.p. Magneto **MINERVA**, h.b. control	£19 10

Easy Payments at Special Rates.

1912 BRADBURY REX | **IN STOCK. LIBERAL EXCHANGES.**

MOTOR BICYCLES FOR SALE.

1909 Triumph, £28; 1910 Triumph, free engine, coach-built sidecar, £45; 8h.p. Minerva, twin-cyl., magneto, £35.—Thompsons', Triumph agents, Moor, Sheffield.

1911 Free Engine Triumph, tyres almost new, engine recently overhauled at Triumph works; £44.—First instance by letter to Colbeck, 111, Harehills Av., Leeds.

HALIFAX.—Brand new 1911 single and 2-speed Rexes from stock, discount for cash; liberal allowances for accumulator Rexes.—Motor Exchange, Westgate, Halifax.

BRADBURY, 1912 models, immediate delivery; cash or exchange; second-hand list on application.—Colliers, Westgate, Halifax.

MINERVA, 3½h.p., late 1909, new cylinder, Clyno pulley, new January Bosch magneto, Amac, h.b.c., little used, good condition; £23.—Hunn, 2, Mosley St., Manchester.

3½h.p. P. and M., new October, 1910, perfect condition, lately thoroughly overhauled by makers, Miller mudshield, etc.; £45.—Gerald Tolson, Kirkburton, Huddersfield.

1911 Premier, £34; 1911 Bradbury, £35; 1910 Triumph, £35; 1910 P. and M., £38; 1912 Triumphs, P. and M.'s, Bradburys, Ivy motor cycles.—T. Reed, Nettlesworth.

1911 Premier, 3½h.p., new September, cut down frame, touring and T.T. handle-bars, 2 belts, tyres as new, all spares, etc., only run 600, faultless; £44/15 lowest.—Sproulle, Mirfield.

SCOTTS, 1912, in stock, also 1911 and 1910 models Rudges. Hazlewoods. Rexes, Bradburys; several second-hand machines in stock, cheap for quick sale.—Everingham, Pocklington.

POWERFUL 5-6h.p. Rex de Luxe, 2-speed and free engine, 1911 model, like new, £42; 1910 3½h.p. Rex and sidecar, splendid condition, £29.—846, Chester Rd., Stretford, Manchester.

1909 Triumph, £24; 1907 Triumph, £20; 1907 4h.p. Quadrant, £15; 1907 3½h.p. Singer, £13; 1908 2¾h.p. Rex lightweight, £15; all magnetos.—Grosvenor Motor Co., Bradford St. West, Bolton.

1909 Humber, Roc gear, unscratched, £30; N.S.U., 3½h.p., £22; exchange both and cash difference for 5-6h.p. sidecar combination, or sell separately.—Taylor, Bridge End, Waterfoot, Lancashire.

2¾h.p. Twin Moto-Reve, purchased July, 1911, cost £45, slightly soiled, otherwise perfect, not run 60 miles; £38; or pay cash and take 1912 Triumph.—T. D. Fitton, Market Place, Huddersfield.

LIVERPOOL Agency for Triumph and Matchless Motors, Hitchings, Ltd., 74, Bold St., Liverpool, the pioneers of motor cycling in the North. It will pay you to deal with Hitchings, Ltd., an old-established firm of highest repute.

HITCHINGS, Ltd., for Triumph and Matchless Motors; any make supplied on most favourable terms; exchanges arranged; absolute satisfaction and courteous service assured by dealing with Hitchings Ltd., 74, Bold St., Liverpool. Established over 30 years.

1912 Rudge, free engine, brand new, just delivered, spares, all new, belt, tube and case, Veeder trip recorder, Chantecler exhaust whistle, lamp, plug, and numerous other spares, comprising a complete 1912 motor cycling outfit; good reason for selling; best offer over £55.—Howard, 146, Manchester Rd., Rochdale.

CLYNOS, for business or pleasure, unequalled. The Clyno motor cycle and Clyno sidecar are years ahead of every other combination; demand wonderful, supply limited; place your order now. The Clyno exhaust whistle, highest grade, plated, to fit on long pipe, h.b.c., 21/-, approval, post free.—Potter, Clyno Agent, Leicester Grove, Leeds.

NORTHERN Depot, Ltd., "Everything Motorish," Leece St., Liverpool.—A.C. Sociable, in stock; A.C. Sociable, 3-seater, 3 weeks; Zebra 2-seater car, 2 weeks; Kerry-Abingdons, any model, 1 week; write for order forms; Avon tyres, F.R.S. lamps (all patterns), Xl'all saddles, Lyso belts, hand and foot muffs, mud screens, sidecars, petrol and luggage carriers, Jones, Cowey speedometers, etc.

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

B.S.A., 3½h.p., late 1911, shop-soiled, lamp, horn; £37/10.—Williams Garage, Matlock Bath.

ZENITH, 3½h.p., 1912, latest, just arrived; 53 guineas, cash.—Pepper, Piccadilly, Hanley, Staffs.

TRIUMPH, 1910, standard, with 1911 fitments; £33; any trial arranged.—Gittins, Lawn, Oswestry.

BRADBURY, 3½h.p., 1911 model, excellent condition; only £35.—Pepper, Piccadilly, Hanley, Staffs.

HUMBER, 2h.p., 1911, new machine, only this one; £32 cash.—Pepper, Piccadilly, Hanley, Staffs.

CLYNO 5h.p. Twin, 1912, latest, just arrived; 65 guineas, cash.—Pepper, Piccadilly, Hanley, Staffs.

HUMBER, 3½h.p., 1911 model, new machine; price £45, sell for £39 cash.—Pepper, Piccadilly, Hanley, Staffs.

3½h.p., N.S.U., magneto, beautiful condition, Palmer cords; first cheque £18/10. — Watson, Motors, Ripley, Derby.

REY, 5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.

Telegrams: "Rey, Hampstead." Tel. 2678 P.O., Hampstead.

EXTENDED PAYMENTS

Taken on any Machine or Runabout.

NO EXTRA CHARGE ON MOST MAKES.

TERMS: QUARTER DOWN, BALANCE IN TWELVE EQUAL MONTHLY PAYMENTS.

Following 1912 Machines for Immediate Delivery:

BRADBURY, 1912, standard	In stock	£48 0
BRADBURY, 1912, T.T.	"	£48 0
BRADBURY, 1912, free engine	"	£54 10
BRADBURY, 1912, two-speed	"	£55 0
RUDGE, 1912 standard model	"	£48 15
RUDGE, 1912 T.T.	"	£48 15
RUDGE, 1912 free engine	"	£55 0
ZENITH, 1912, 3½ h.p.	"	63 Gns.
ZENITH, 1912, 6 h.p.	"	67 Gns.
ZENITH, 1912, 8 h.p., six days	"	69 Gns.
BAT, 1912, 3½ h.p., two-speed	"	£59 0
BAT, 1912, 6 h.p., two-speed	"	£70 12
BAT, 1912, 6 h.p., standard model	"	£58 0
BAT, 1912, 8 h.p., standard model	"	£60 0
TRIUMPH, 1912, standard model	"	£48 15
TRIUMPH, 1912, free-engine model	"	£55 0
DOUGLAS, 1912, model H, two-speed	"	£47 0
DOUGLAS, 1912, model G	"	£41 0
F.N., 1912, 2½ h.p., two-speed gear	"	45 Gns.
F.N., 1912, 5-6 h.p.	"	50 Gns.
SINGER, 3½ h.p., 1912, free engine	"	£55 0
LINCOLN ELK, 1912, 3½ h.p.	"	£34 0
LINCOLN ELK, 1912, 3 h.p.	"	£30 10
LINCOLN ELK, 1912, 2¾ h.p.	"	£28 10
SINGER, 3½ h.p., 1912, three-speed gear		£58 15
BEDELIA Cars (6 days), 7½% extra	E.P.	59 Gns.
G. & N. Runabouts, 8 h.p. (in 6 weeks)	"	87 Gns.
A.C., speed sociable type (in Feb.)	"	£87 10

Any other makes on application.

ABOVE MACHINES FOR IMMEDIATE DELIVERY. NO WAITING THREE WEEKS.

LINCOLN ELKS

From £28 10s.

Sole London Agent for the famous LINCOLN ELK. Finest value on the market for quality and reliability. All models on view and for immediate delivery.

TRADE SUPPLIED WITH VARIOUS MAKES. LIBERAL DISCOUNTS ALLOWED.

Second-hand Machines at Bargain Prices to clear.

BAT, 8 h.p., 1910, with Millford sidecar	£40 0
HOBART, 2½ h.p., new 1911	£29 0
F.N., 6 h.p., good order	£18 0
F.N., 2¼ h.p., 1911, two-speed	£25 0
REX, 5 h.p., 1909, two-speed	£25 0
LINCOLN ELK, 3½ h.p., 1911 clutch, and sidecar	£30 0
PRECISION, 2½ h.p., 1911, almost new	£25 0
DOUGLAS, 1910, fine order	£24 0
TRIUMPH, 1910, free engine	£37 0
TRIUMPH, 1910, free engine, splendid order	£38 0
TRIUMPH, 1909, splendid order	£28 0
BRADBURY, 1911	£30 0
BAT, 5 h.p., T.T., condition like new, bargain	£45 0
DOUGLAS, 1911, Model D, all accessories	£26 0
ZENITH, 1911 3½ h.p.	£39 0
ZENITH, 1911, 3½ h.p.	£40 0
ZENITH, 1911, 3½ h.p.	£42 0
TRIUMPH, 1910, F.E.	£39 0
J.A.P.-CHATER-LEA, 1911, 2½ h.p., sp. f'ks., mag.	£18 0
ZENITH, 3½ h.p., 1911, good order	£38 0
TRIUMPH Standard, 1910, with clutch	£29 0
LINCOLN ELK, 3½ h.p., and clutch	£26 0
Cane Sidecar, good condition	£4 0

All Accessories included on S.H. at the price advertised.



THE £4 - 10 REY Sidecar £3 - 10

With Hutchinson or Michelin 26 × 2¼ Tyre and Tube, 30/- extra.

The famous "REY" EXHAUST WHISTLE now reduced to 12/6 each. Triumph standard type.

The "REY" Leather Belting outlasts two of any other makes. Price 2/- per foot.

Special Discounts to Trade.

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

REY, 5, HEATH STREET, HAMPSTEAD.

1912 MACHINES

In Stock for immediate Delivery.

3½ h.p. **RUDGE,** fixed gear	£48 0
3½ h.p. **HUMBER,** 2-speed model	£52 10
1912 3½ h.p. **BRADBURY,** single-speed	£48 0
1912 3½ h.p. **BRADBURY,** two speeds	£55 0
1912 3½ h.p. **NEW HUDSON,** three speeds	57 Gns
1912 2¾ h.p. **NEW HUDSON,** three speeds	47 Gns
1912 2½ h.p. **A.J.S.,** two speeds, chain drive	47 Gns

LIGHTWEIGHTS.

1¾ h.p. **WOLF,** A.J.S. engine, magneto	£15 0
2¾ h.p. **CASWELL** vertical, Bosch, Amac, h.b. control	£12 0
1910 2¾ h.p. **MOTO-REVE,** magneto, Druids	£22 0
1910 2¾ h.p. **MOTO-REVE,** extra fine order	£23 0
1909 2¾ h.p. Twin **MOTO-REVE,** 50 × 70mm.	£20 0
1908 Twin **MOTO-REVE,** magneto Druids	£15 0

SINGLE-CYLINDER REXES.

1910 3½ h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p. 1908 Featherweight Rex, Bosch mag	£17 0

TWIN-CYLINDER REXES

1911 5-6 h.p. de Luxe, M.O.V., two speeds	£44 0
1909 5-6 h.p. de Luxe, two speeds, fine	£34 0
1906 5-6 h.p. Twin Rex, Mabon clutch	£16 10
5-6 h.p., Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, two speeds, M.O.V.	£48 0
5-6 h.p. de Luxe, 1908, two-speed model	£28 0
5-6 h.p. de Luxe, 1908, two speeds, special	£29 10
5-6 h.p. 1908 two-speed de Luxe, 1909 engine	£32 0

OTHER MAKES.

5½ h.p. **N.S.U.,** 2 speeds and free engine	£25 0
6 h.p. **N.S.U.,** M.O.V., 2 speeds	£33 0
1911 2½ h.p. **MOTOSACOCHE,** magneto	£27 0
1911 3½ h.p. **SINGER,** clutch model, done 200 miles	£43 0
3½ h.p. **L.M.C.,** 1910 model	£25 0
3 h.p. **SINGER,** Bosch, V belt drive, B. & B.	£16 0
3 h.p. **QUADRANT,** Bosch, B. & B., sp. forks	£16 0
3½ h.p. **QUADRANT,** h.b. control, sp. forks	£16 0
1¾ h.p. **MINERVA,** V belt	£4 10
3½ h.p. **MINERVA,** Bosch magneto, Amac	£22 0

SIDECAR COMBINATIONS.

5-6 h.p. Clutch Model **REX** and new sidecar	£29 0
5-6 h.p. Two-speed 1908 **REX** and sidecar	£33 0
7-9 h.p Two-speed **REX** and sidecar	£53 0
1910 6 h.p. **N.S.U.,** M.O.V., two speeds, complete with N.S.U. coach-built sidecar	£38 0

All fitted with Magneto and Spring Forks.

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3 h.p. **REX,** vertical engine	£9 0
3½ h.p. **BROWN Bicar,** M.O.V., 26in. wheels	£12 0
1¾ h.p. **MINERVA,** V belt, spray carburetter	£5 0

£4 DOWN SECURES ANY OF THESE. BALANCE 6/- WEEKLY.

3½ h.p. **QUADRANT,** h.b. control, sp. forks	£16 0
3 h.p. **QUADRANT,** h.b. control, Bosch mag.	£16 0
3 h.p. **SINGER,** Bosch magneto, h.b. control	£16 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

1¾ h.p. **WOLF,** A.J.S. engine, magneto	£15 0
1910 2¾ h.p. Twin **MOTO-REVE**	£22 0
1909 2¾ h.p. Twin **MOTO-REVE**	£20 0

CARS AND TRICARS.

5 h.p. **HUMBER** Car, two-seater, good goer	£22 0
5 h.p. **REXETTE,** Oppermann, 3 speeds	£18 0
Duocar, Bosch magneto	£45 0

MISCELLANEOUS BARGAINS.

New Screw-cutting Lathe, 4in. centres	£8 10
Fulford Castor Wheel Sidecar	£5 0
Pressed Accumulators (new), 15 amp.	9/6
Tricar Frame, suit 6 h.p. engine	35/-

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane,

Telephone 919. **HALIFAX** (Two minutes from G.P.O.)

MOTOR BICYCLES FOR SALE.

RUDGE, T.T., July, 1911, very fast, winning mount, spares; £38; reason for sale, buying 1912 Rudge.—George Hill, Willenhall.

TRIUMPH, 1909, enamelled, plated, overhauled, equals new, new tyres, tubes, and belt; offers.—Saville, jun., Lymm, Cheshire.

BRADBURYS, 1912, free engine and 2-speed models, with all their superb improvements. — Paskells, Walsall. Motor Depot, Stafford St.

ZENITH-GRADUA, 1912. 3½h.p., the motor cycle that is "barred" from all hill-climbing contests; it speaks for itself.—Sole agents for district, Paskells, Walsall. Motor Depot, 250, Stafford St.

1911. Zenith-Gradua, 6h.p. twin, only arrived October; the one and only one for heavy work.—Paskells, 250, Stafford St., Walsall.

CLYNO.—Sole district agents for the hill-climbing Clyno; book at once for early delivery.—Paskells, 250, Stafford St., Walsall.

QUADRANT, 3h.p., complete with spring forks, Brooke saddle, B. and B. carburetter; only £10.—Pepper, Piccadilly, Hanley, Staffs.

1911 Triumph, free engine, middle August, under 600, absolutely as new, fully equipped; £50, or near offer.—Lewis, Kerry Rd., Newtown.

TRIUMPH, 1909, T.T. recently been rebushed, spare valves, new cover, Dunlop, for back; £31.—Franklin, 8, Mount Pleasant, Bilston, Staffs.

1910 T.T. Triumph, racing 6 touring cars, perfect order, £37; 1911 Indian, 5h.p., red, equal to new, £40.—Sidney Minshall, Stoneway, Cridgnorth.

3¼h.p. N.S.U., magneto, latest h.b.c. carburetter, machine, tyres, belt as new, whistle, very powerful; £20; offers; trial.—2, Wilmot Villas, Buxton.

1910 Triumph, splendid condition, F.R.S. lamp and Lucas generator, horn, 1911 pulley, new Palmer cord tyre, engine just rebushed; £33.—Bostock, Middlewich.

7h.p. Indian, 1911, 2 speeds, foot clutch, new condition throughout, done 800 miles, most luxurious sidecar machine produced; sacrifice, £47.—R. Else, Leawood, Matlock.

KERRY, 2¾h.p., B. and B. carburetter, Dunlop tyres, new air tubes, new tank and accumulator, splendid condition; absolute bargain, £9/10.—29, Burlington St., Chesterfield.

TRIUMPH, 1911, standard, carefully kept and ridden, splendid condition, £39; Bradbury, 1912 standard, brand new, £46; private owner giving up riding.—Brandon, 151, Welsh Row, Nantwich.

3½h.p. Humber Engine, vertical Rex frame, Dunlop belt, B.B. carburetter, 2 accumulators, 2 coils, good condition; going abroad; sacrifice, accept £9, or offers.—Staley, Shuttlewood, Chesterfield.

BARGAINS.—1911¼ 3½h.p. Lincoln Elk, as new, £26; 3½h.p. Quadrant, low, h.b.c., spring forks, new Palmer cord, Midland belt, accumulator (cost £7), £14.—Allen's, pawnbrokers, Chestergate, Macclesfield.

INDIAN Twin, 7h.p., 1911¼, 2-speed gear, free engine, also Millford radial castor wheel sidecar, and new Palmer cord spare cover, numerous spares; £69, or best offer.—Address, Fishwick, Brook Lane, Alderley Edge.

5-6h.p. Twin Rex, free engine clutch, magneto, long exhaust pipe, adjustable Clyno pulley, very comfortable and reliable, spare belt, etc.; £20, or with Mills-Fulford sidecar £23, no offers.—H. Shaw, 32, Broad St., Wolverhampton.

4¼h.p. Excelsior, free engine (Villiers), new July, 1911, unused during winter, B. and B., Bosch, Whittle, Druid, Brooks large saddle, adjustable pulley, tyres excellent, spares, h.b.c., m.o.v., sidecar machine; cost 50 guineas, accept £40, or near offer. — Jones, dentist, Crewe.

GREATEST Bargain ever offered.—3h.p. Triumph. Bosch magneto, overhauled by Triumph Co. at a cost of £6/14 1911, 26×2¼ tyres, new pulley, new spring forks, new belt, splendid running order, very fast, complete lamp, horn, bag, tools, spare cover; accept £16/10, no offers; cheap at £23.—Brown, Gloucester Rd., Cheeterfield.

CHESTER. — 1912 Triumphs, Rudges, Bradburys, Zeniths, Douglas, and A.J.S. motors, in stock; also 1911 2-speed A.J.S., £33, perfect; 1911 T.T. Roadster Triumph, new July, £38; 1911 free engine Triumph, £40; 1911 Indian, F.E., 5h.p., hardly soiled, £40; 1911 F.E. Bradbury, nearly new, £40; 1909 2-speed F.E. Triumph, £34; 1911 F.E. 5h.p. A.S.L., £33; 1911 6h.p. Clyno, £35; 1909 Triumph, £28; 1910 M.R. twin, £20; 2¼h.p Minerva, £6; and a number of others, all bargains.—Marston's, 26, Bridge St. Chester.

THE North Wales Motor Exchange, Rhosddu, Wrexham. Tel.: 283.—Gentlemen, we will attend to your requirements by return. 1912 F.E. Rudge, Sen-spray (uncrated), £55; 1911 Indian, 5h.p., clutch model, July bought, £42; 3h.p. twin N.S.U. lightweight, absolutely like new, £27/10; 1909 Triumph, just back from Triumph works, £7 spent on overhauling, receipts shown, £32/10; 1908 5½h.p. Tourist Rex, magneto, £20; 1908 Rex Twin, tourist model, fine order £25; 4¼h.p. Twin Minerva, magneto, just been overhauled at a cost of £6, new Mabon clutch, car tyre on back, perfect order, fine sidecar machine, £28/10; 6h.p. Rexette, wheel steering, water cooled, 2 speeds, built on car lines, fine order, any trial, £22/10; exchanges a specialty.

CARRIAGE PAID.

We now pay carriage on our sidecars to any address in the United Kingdom.

The following refinements are fitted to all models. No extra charge whatever:

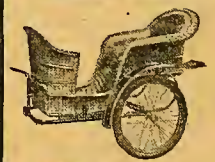
1. **Kick-up Stand** for jacking up sidecar wheel for tyre repairs.
2. Large sized **Cocoanut Mat** fitted to foot of sidecar.
3. **Special Sidecar Lamp** (plated), and fitted to show white light at front and red light to rear.
4. **Extra Rapid** Quick Detachable Joints.
5. **We pay carriage to any town in the United Kingdom.**



Model de Luxe.—£6 5s.



Model C.—£7.

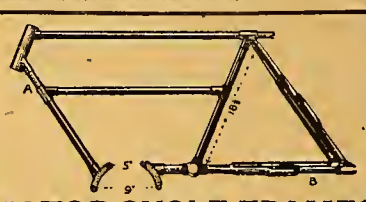


Model E.—£7 5s.



Model D.—£8.

All complete with Michelin or Continental tyres. Customers have option of car or round pattern mudguards. Discount to the trade.



MOTOR CYCLE FRAMES

We have a quantity of frames by well-known maker, **Price 32/6 each.**

Rigid forks, **7/6** extra. Druid forks, **45/-** extra. Enamelled and plated in first-class style.

TYRES.	TYRES.	TYRES.
Heavy Rubber-studded Covers, 26 × 2¼		16/6
26 × 2½ Hutchinson Heavy T.T. Covers		26/-
26 × 2 and 26 × 2¼ Wired-edge Covers		12/6
Continental Rubber Non-skids, 26 × 2½ or 2¼		30/-
Hutchinson Ribbed Tread, 26 × 2¼		18/6
Continental, beaded, 26 × 2		18/6
Tubes, all sizes, guaranteed		9/6
New Butted Tube, 26 × 2¼		8/6
New Butted Tube, 26 × 2½		9/3
Special Heavy 26 × 2¼ Tubes, guaranteed		7/6

MISCELLANEOUS BARGAINS.

Mabon Clutch, fits twin Rex	55/-
Brooks Broo Saddle	9/6
Brooks Bro5 Saddle	11/6
Lycett's L109 Saddle (new)	11/6
Lycett's ditto, padded top (new)	14/6
Cocoa Fibre Sidecar Footmats	3/-
Amac Carburetter, h.-b. control	16/-
Ruthardt V Twin Magneto, 45° angle	£3 15
New Bosch D A V Twin Magneto, 48°	£4 4
Rex Pattern Belt Rim Brake (new)	6/8
Lycett's Carrier Toolbags (new)	7/6
1 h.p. Electric Motor, 230 volts	£7 0
New 4 h.p. N.S.U. Engine, perfect	£7 0
3½ h.p. Rex Engine, M.O.V.	£5 10
6 h.p. Stationary Engine, carburetter, coil	£6 0
Sidecar Lamps, show red light behind	7/6
Trailer, 26in. wheels	25/-
New Toolbags, 9 × 6 × 3½in.	4/6
Sidecar Aprons, green or red, with studs	7/6
Druid Spring Forks (new)	£2 5
New Lycett's Tubular Carriers	4/11
Longuemare Carburetters	5/-

FARRAR'S MOTOR EXCHANGE,

19, 21, 23, 25, Hopwood Lane,

HALIFAX (Two minutes from G.P.O.)

Telephone 919.

AN IDEAL SIDECAR MACHINE

Two-speed Free Engine

RUDGE.

The engine starts with back wheel on the ground, and on test these Rudges give 8 h.p.

RUDGE, two speeds, free engine £56 10

ALL MACHINES GUARANTEED AND ACTUALLY IN STOCK.

RUDGE, 1912 standard £48
RUDGE, 1912 standard £48
RUDGE, Multi-gear Model, delivered 1st March.
ROYAL ENFIELD, 1911 model, two speeds, handle starting, a beauty £38
TRIUMPH, bike new, not done 500 miles, guaranteed £40
RUDGE, free engine, 1911, Palmer Cord covers, fine condition £48
BRADBURY, standard 1911, unscratched, elaborate condition £39
RUDGE, Racing Model, 1911, all improvements, very speedy, first-class condition £40
N.S.U., 4½ h.p., twin, 2-speed gear, Bosch magneto, very fast £24
N.S.U., 3¾ h.p., 1908, magneto, h.b.c., good and sound throughout £21
HUMBER, 1909, 3½ h.p., two speeds, very powerful £28
N.S.U., 3 h.p., magneto, all improvements .. £18
QUADRANT, 3½ h.p., take a sidecar, good condition £12
REX, 1911, brand new twin-cylinder, Bosch aluminium, footboards, all improvements £38
PREMIER 3½ h.p. 1911, not done 500 miles,.. £36
REX DE LUXE, 1909, 5-6 h.p., 2-speed gear, variable pulley £32
REX DE LUXE, 5-6 h.p., Bosch, spring forks, two speeds, handle starting £28
ADVANCE, 6 h.p., magneto, h.b.c., twin cylinder, powerful £17
PORTLAND, Peugeot engine, 3½ h.p., 1911 model, Bosch magneto, rubber non-skids, machine little and carefully used £32
MINERVA, 8 h.p., Roc 2-speed, handle starting, torpedo tank, grey finish, very elaborate and smart, complete with sidecar £47 10
CENTAUR, P. & M., two speeds, complete with sidecar, splendid running £25
REX, 5-6 h.p., 1911, M.O. valves, two speeds, free engine, Binks' carburetter, sidecar, good tyres to all wheels, splendid order throughout £42 10
HUMBER 3 h.p. h.b.c. B.B. carburetter, 26x2¼ non-skid tyres £11
LLOYDS, 2 h.p., smartly finished £8
DE DION, Phœnix 2-speed gear, low and racy £10
REX, 2 h.p., spray carburetter £7

CASH, CREDIT, or EXCHANGE TERMS TO SUIT YOUR POCKET. WRITE US.

S. & R. Sidecar, wicker basket, nicely upholstered £5 5
S. & R. with wheel supported at both sides £6 6
S. & R. with white cane basket £7 7
S. & R. with torpedo enclosed body £8 8
S. & R. with coach-built body £11 10

MISCELLANEOUS.

1911 Brown and Barlow carburetter..... 2S/-
Post Horns, Lucas pattern, very loud and musical 12/6
New Fuller Midget Coil 7/3
Long Handle-bars 4/9
Second-hand P. and H. Lamp, excellent condition and order 6/6
Rubber-studded Genuine 26 x 2in. Avon Tyre 20/-

SCOTT'S,

Victoria Motor House,
POWELL STREET, HALIFAX.
Telephone—433 National.
Telegrams—"SCOTT, Powell Street, Halifax."

MOTOR BICYCLES FOR SALE.

SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

2¼h.p. Minerva: £5.—E. Clarke, 56, Alderman's Drive, Peterborough.

TRIUMPH, 2¼h.p. J.A.P. engine, good order; special bargain, £7.—Plastow, Grimsby.

TRIUMPH, 1910, F.E., speedometer, lamp, generator, horn, back rest, new condition; £42/10.—Plastow, Grimsby.

HUMBER, 1911, 2-speed, brand new heavy Kempshall tyres; £35.—Plastow, Grimsby.

DOUGLAS, 1911 model E., 2-speed, free engine, handle starting, ridden 2,000 miles; £37/10.—Plastow, Grimsby.

DOUGLAS, 1910 Model D., absolutely perfect; £27.—Plastow, Grimsby

1912 F.E. Triumphs, B.S.A.'s, Rudges, Bradburys, Premiers, for immediate delivery; 1911 new F.E. Rudge, delivered November, offers.—Plastow, Grimsby.

WOODGATE for Triumphs; stock, or early deliveries of all models; also several second-hand.

WOODGATE for Singers, 2½, 3½, and 4h.p. models, with 1, 2, and 3 speeds; two second-hand.

WOODGATE for Royal Enfields; immediate delivery 2¾h.p. 2-speed, and 6h.p. sidecar combination.

WOODGATE for Rudges, Ariels, Rexes, or any other make you may fancy; also for really high-class second-hands. Let us have your enquiries.—J. J. Woodgate's Motor Depot (estab. 1900), Coventry Rd., Birmingham. 'Phone: 372 Victoria.

1911 6h.p. Zenith, shop-soiled, delivered Dec.; £65.—Colmore Depot, 62, High St., Leicester.

1911 3½h.p. Zenith, shop-soiled, delivered Dec.; £50.—Colmore Depot, 62, High St., Leicester.

1911 2¾h.p. Standard Douglas, shop-soiled; £35.—Colmore Depot, 62, High St., Leicester.

1911 Standard Ariel, second-hand, grand condition; £28.—Colmore Depot, 62, High St., Leicester.

1911 2-speed Douglas, clutch model, grand condition; £38.—Colmore Depot, 62, High St., Leicester.

1911 Second-hand 3½h.p. Zenith, only run 500 miles; £42.—Colmore Depot, 62, High St., Leicester.

1909 2¾h.p. Douglas, standard model, good condition; £20.—Colmore Depot, 62, High St., Leicester.

1912 Douglas, all models; book now for early delivery.—Colmore Depot, 62, High St., Leicester.

1912 Zenith, all models; spring deliveries selling fast. Order at once.—Colmore Depot, 62, High St., Leicester.

1912 New Hudson, the famous 3-speed machine; call and get description.—Colmore Depot, 62, High St., Leicester.

1912 Clyno, the sensation of the Show; a few left of the spring Deliveries.—Colmore Depot, 62, High St., Leicester.

1912 Matchless, the Tourist Trophy race winners.—Colmore Depot, 62, High St., Leicester.

3½h.p. Rex (£22) and 3½h.p. N.S.U. (£17), magnetos; or exchange.—137, Upper Conduit St., Leicester.

DOUGLAS, 1911, perfect condition, little used; £32, or near offer.—Flewitt, 15, Addison St., Nottingham.

6h.p. Twin Rex (1910), excellent condition, magneto, approval willingly; bargain, £25.—B. Morris, Bourne.

1912 Clutch Triumph, brand new; 52 guineas, lowest, carriage paid; wire secures.—Carouge, Leamington Spa.

REX, 2¾h.p., 1908, magneto, B.B. carburetter, h.b.c.; trial; £15.—Leeson, 15, Constitution Hill, Birmingham.

1911 3½h.p. Premier, nearly new, makers' guarantee given with it; £35.—Ingle, 42, Castle St., Wellingboro'.

1912 Triumphs in stock, Douglas, B.S.A., Bradbury, Rudge, Zenith; offers.—Clifford, Eastwood, Notts. Exchanges.

JUNE, 1912, clutch Triumph, scarcely soiled; 42 guineas; lamp, horn, and spares. — Warner and Miles, Leamington.

TRIUMPH, 1908, standard, good condition, recently re-bushed throughout, all accessories; £23.—Trevor, East Kirkby, Notts.

3½h.p. Minerva, Chater-Lea, with new carburetter, in good condition; £10.—223, Newark Rd., Bracebridge, Lincoln.

BRADBURY, 1912, standard and free engine models, in stock; exchanges arranged.—A. E. Clare, 364, Moseley Rd.

SINGER, 1911½, standard, new, 3½h.p.; to clear £40.—A. E. Clare, 364, Moseley Rd., Birmingham.

DOUGLAS, 1911½, new, standard model; to clear £35.—A. E. Clare, 364, Moseley Rd., Birmingham.

PREMIER, 1911½, free engine, and cane sidecar, little used; bargain, £40.—A. E. Clare, Birmingham.

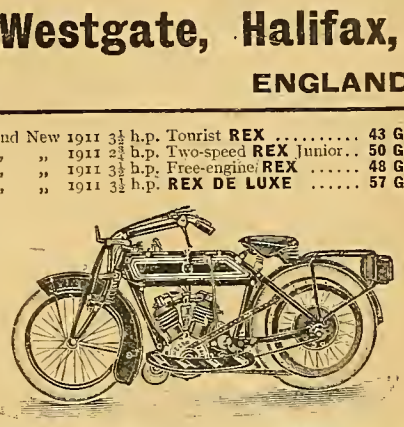
ARNO, 3½h.p. model, 1911½, new; list £45, take £35 to clear.—A. E. Clare, 364, Moseley Rd.

Collier's Motories,

Westgate, Halifax,

ENGLAND.

Brand New 1911 3½ h.p. Tourist **REX** ..... 43 Gns
" " 1911 2¾ h.p. Two-speed **REX** Junior.. 50 Gns
" " 1911 3½ h.p. Free-engine **REX** ..... 48 Gns
" " 1911 3½ h.p. **REX DE LUXE** ..... 57 Gns



Also 1911 New 2-speed Twin **REX DE LUXE** as per illustration..... 60 Gns.

Discount to Cash Buyers. Liberal Exchanges.

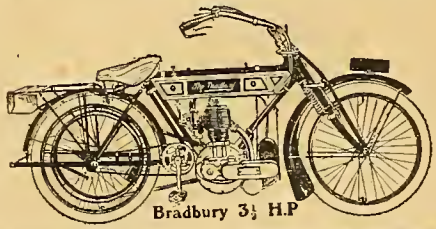
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CASH, EXCHANGE, OR EASY PAYMENTS.

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1911 Twin Two-speed **REX DE LUXE** £47 10
5 h.p. Two-speed free engine **ROC** £35 0
1910 7 h.p. Twin **REX,** M.O.V. £37 10
3½ h.p. **FAFNIR,** Bosch, h.b.c., Indian red, Druids £19 10
Magneto **TRIUMPH,** spring forks, very smart .. £25 10
Magneto Twin **REX** £19 19
REX, 1910, 3½ h.p., "hot stuff" £29 10
5½ h.p. Two-speed Twin **REX DE LUXE** £29 10
5 h.p. 1910 Twin **REX,** special machine £29 10
4½ h.p. Four-cylinder **F.N.,** magneto £19 19
5½ h.p. Twin **REX,** very smart £16 10
2¾ h.p. **KERRY,** runs well, spring forks £10 10
1910 3½ h.p. T.T. **REX,** very fast £27 10
3½ h.p. **TRIUMPH,** 1908, very good £28 10
2¾ h.p. **DE DION,** spray carburetter £10 10
3 h.p. **HUMBER,** chain drive £7 10
1909 3½ h.p. **REX DE LUXE,** two speeds £32 10
1908 3½ h.p. Magneto **REX,** spring forks £22 10
1907 3½ h.p. Magneto **REX,** spring forks £19 19
3½ h.p. Tourist **REX,** brand new £29 10
1910 Twin **REX DE LUXE,** two speeds £42 10
New Twin **REX,** Cantilever seat ..... 36 Gns
Twin **REX DE LUXE** and sidecar £27 10
3½ h.p. Magneto **MINERVA** £19 10
MOTO-REVE, magneto, Druids £19 19
MOTOSACOCHE Lightweight £14 10
F.N. Lightweight, magneto, spring forks £19 19
REX, 3½ h.p., spring forks £15 10
1911 3½ h.p. Tourist **REX** £32 10
1911 Single-cylinder Two-speed **REX,** 300 miles .. £42 10
3½ h.p. Two-speed **N.S.U.,** extra good £21 0
3 h.p. **ANTOINE,** h.b. control £12 10
2¾ h.p. **F.N.,** h.b. control, very smart £12 10

A CALL WILL REPAY YOU.

1912 BRADBURY IN STOCK.



Bradbury 3½ H.P

Exchanges Quoted. Distance no objection.

High-class Sidecars, complete with tyre, from £4 15

28 x 2½ CALMON and CLINCHER Covers 14/6
26 x 2¼ Wired MICHELIN Heavy Tricar Covers .. 17/6
Tubes, all sizes, guaranteed 5/11
24 x 2¼ REFLEX Beaded Covers 12/6
Tubes 5/11

MOTOR BICYCLES FOR SALE.

HUMBER, 1910¾, 3½h.p., 2-speed, excellent condition, new back tyre; £32.—O. W. Capewell, Southwell.

1912 3½h.p. Humber, 2 speeds, brand new, in makers' crate; cash offers.—Pollard, Wraghy, Lincolnshire.

3½h.p. Rover, 1911, free engine, capital order, just overhauled; £42/10.—Hollick, 97, Little Park St., Coventry.

TRIUMPH, 1911, F.E., Palmer cords, F.R.S. lamp, Cowey can be had, in grand order.—Tromau, The Elms, Solihull.

1912 Bradbury, Rudge, B.S.A., Alldays, New Hudson, 2¾h.p. and 3½h.p. 3-speeds in stock.—Blackburn, Spalding.

TRIUMPH, 1910, first-class condition, just overhauled tyres in good order; cash £32.—Hulbert, Hunning ham, Leamington.

1912 Triumph and New Hudson, 3-speed, clutch, and standard, in stock.—Mason, Triumph agent, Wellingborough.

TRIUMPH, early 1911, never been ridden, owner went to Canada; sacrifice £37, or best offer over —152, Parade, Leamington.

3½h.p. New Hudson-Jap, single speed, 1911 model splendid machine bargain. £33.—Cady, 177, Grove Rd., Sparkhill, Birmingham.

REX De Luxe, 1908, 6h.p., Roc clutch, Cantilever seat, car tyre, perfect; any trial; £20, or exchange lightweight.—1, Gosta Green, Birmingham.

1911 Twin Rex de Luxe, 5-6h.p., free engine, 2 speeds, brand new, just delivered. — Box No. 9,634, *The Motor Cycle* Offices, Coventry.

4h.p. Clyde, J.A.P. engine, low built, recently re plated and enamelled, winner of reliability and hill trials; £25.—Wait and Co., Ltd., Clyde Motor Works, Leicester.

3½h.p. Bradbury, 1911 model, just tuned up by makers almost as good as new; £40, or near offer.—Wait and Co., Ltd., Leicester.

LINCOLN 1912 Models in stock; Triumph, free engine, B.S.A., Zenith Gradua, Enfield 2-speed A.J.S.; early application necessary.—West's Garage, Lincoln.

TRIUMPH, 1910½, F.E., Palmer tyres, Cowey speed indicator, 2 lamps, Mills-Fulford sidecar, in first class order; owner buying car.—Adkins, miller, Broom Junction.

ROYAL Enfield, 2¼h.p. (Sept., 1910-1911 pattern) nearly new Dunlop and Kempshall tyres, black enamel, spares, splendid order; £24.—Robinson, 4, High St., Nottingham.

1911½ N.S.U., 3½h.p., Model de Luxe, 2 speeds, free engine; cost £53/10; only ridden 30 miles, absolutely as new; bargain, £40, near offer. — 72, Oval Rd., Gravelly Hill.

VINDEC Special, 4h.p., late 1909, Bosch magneto B. and B. carburetter, h.b.c., free engine, all in splendid order; bargain, £24.—64, Triton Rd., Small Heath, Birmingham.

3½h.p. Rex, B.B. carburetter, h.b.c., Mabon clutch spring forks, special saddle, footboards, new Palmers, new belt, perfect, reliable; photo; £25.—9,712 *The Motor Cycle* Offices, Coventry.

FOR Sale, 2h.p. Motosacoche, magneto, Whittle, all h.b.c., Clinchers, free engine, 1911 machine, and everything in first-class condition; £24.—Winteringham, Ltd., St. Andrew's St., Northampton.

TRIUMPH, 1911, free engine, in splendid condition, with lamp, horn Jones speedometer, and Brooks extra large toolbag and spares; a bargain, £45.—Captain Eliott, 55, Park Rd., Coventry.

J.A.P., 4h.p., Druid forks, magneto, Kempshall tyres, stand and carrier, B. and B. carburetter, built to order, £33; if with 2-speed hub, £41.—F. Hopley and Co., Upper Highgate St., Birmingham.

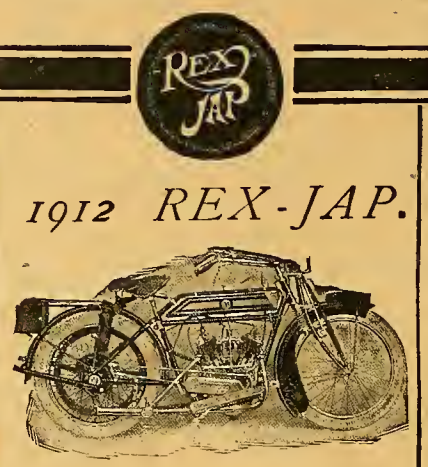
TRIUMPH, 3½h.p., late 1909, only done about 6,000 miles, just been overhauled by makers, splendid condition; price £35, including tools and spares; owner requires 5-6h.p. But or Mutchless.—Poynton, 25, Chester St., Coventry.

TRIUMPH, 1909½, standard, carefully used, nice appearance, all accessories, guaranteed, £32½; also late 1910 twin Enfield, 2¼h.p., 40 guinea Khaki model, unused to June, 1911, all accessories, guaranteed, £25; both delivered free.—Holt, Motors, Leamington.

1911 6h.p. T.T. Matchless, overhead valves, not ridden 300 miles, in excellent order, £42; 1911 3½h.p. Humber, new July, 2-speed gear, free engine, splendid condition, £39; 1910 3½h.p. Triumph, very little used, and in good order; £29.—8, Shakespeare St., Nottingham.

REX, 6h.p., M.D.L., 2-speed gear, Lucas lamp and generator, belt case, 2 spare tubes, horn, just overhauled, £35; T.T. Triumph, 1911, new condition, Palmer cord tyres, £37; Indian, 5h.p., new Feb., 1911, £36; Phelon and Moore, 3½h.p., with sidecar, just overhauled by makers, £36.—Guyver's Garage, Stratford-on-Avon.

DOUGLAS, 1910, condition excellent, just overhauled, Autoclipse lamp, horn, watch, 2 Brooks pannier bags, Brooks saddle with collapsable back rest, spring seat pillar, Brooks touring bag, with inside case, tools, Palmer cord tyres, excellent condition; owner going abroad; accept £29; inspection invited.—Apply, Wulters and Co., Ocean Chambers, Birmingham.



1912 REX-JAP.

Specification of 8 h.p. de Luxe Model.

ENGINE—8 b.p. Twin-cylinder J.A.P., 85 x 85 mm.

"The motor that is full of life."

"The motor that is all life."

FRAME—Exceptionally strong, built of double-butted tubes throughout, with brazed-on lugs for Sidecar.

SPRING FORKS—Made under 'Druid' License.

SPRING CANTILEVER SEAT—New pattern, absolutely insulating driver from all vibration.

SADDLE—Brooks, Padded top B104P, fitted with Brooks' Patent Compound Springs.

IGNITION—New 1912 enclosed type Bosch High Tension Magneto, fitted behind engine in a thoroughly sheltered and very accessible position. Handlebar controlled.

CARBURETTER—Brown and Barlow, handlebar controlled.

LUBRICATION—Patent Automatic Sight-feed Lubricator, also auxiliary hand-operated pump.

MUDGUARDS—Strong and wide, with side flap to front mudguard, and shield over belt.

TANK—Fitted with extra large filler caps and straining gauzes for both petrol and oil.

CARRIER—Strong Tubular Carrier, with compartment for tool bag, leaving top of carrier free for luggage.

CLUTCH & TWO SPEED GEAR—Live axle, hand-starting (made under Roc licence), simple, self-contained, and fully enclosed.

TYRES—650 x 65 Grooved Dunlop on back wheel. 26x2½ Rubber Studded Extra Heavy Dunlop on front wheel.

We shall be pleased to post you Catalogue describing the many advantages of this unique machine.

AGENTS—Write for Contract terms.

COLONIAL DEALERS—The Rex-J.A.P. Colonial models will be of interest to **YOU.**

THE PREMIER MOTOR CO., LTD.,

Aston Road,

BIRMINGHAM.

Telegrams: "Primus, Birmingham."
Telephone: Central 4310.



MOTOR BICYCLES FOR SALE.

SECOND-HAND Motor Cycles.—We never hang on to second-hands. A quick turnover is what we want, and that is why we offer second-hand motor cycles at pounds below other houses. We have just received delivery of a large number of new 1912 Douglas machines, and have placed these with customers who have exchanged their 1911 and 1910 mounts. You know the saying, "Once a Douglas rider always a Douglas rider." These second-hands are being thoroughly renovated, and will be cleared at bargain prices. 1910 Douglas, from £22; 1911 Douglas, from £27. £25 spent on a Colmore Douglas will prove a fine investment. Let us send you a list of about 60 really good second-hands in stock.—Colmore Depot, 27, Colmore Row, Birmingham.

SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

1910 Twin Moto-Reve, in splendid condition; £17/17. 3a. Bridge St., Cambridge.

3½h.p. 1911 Standard Rudge, in topping order; £33. —37, Searle St., Chesterton, Cambridge.

1912 Bradbury, free engine model, in stock; first cheque £54/10 secures.—Willmott Bros., Norwich.

1912 Rover, free engine model, £55/5; also 2¾h.p. twin Centaur, £42; both in stock.—Willmott Bros., Norwich.

F.N., 1¾h.p., new cylinder and piston; £15, or exchange.—62, Upper Cliff Rd., Gorleston, Great Yarmouth.

TRIUMPHS, Bradburys, B.S.A.'s, Humbers, Rudges, Enfields, Premiers, Matchless, from stock.—Lambert, Thetford.

PREMIER, 3½h.p., 1911 model, brand new, in crate, £37/10; similar machine, free engine, £43, not unpacked.—T. H. Nice, Bury St. Edmund's.

PHELON and Moore, 1911, special sidecar machine, 2½in. Kempshalls, all extras; cost £64, accept £49; little used, excellent condition.—37, James St., Cambridge.

B.S.A.! B.S.A.! B.S.A.! — Early deliveries of all models of these celebrated machines; second-hand machines part payment.—A. F. Garnham and Co., sole agents, Ipswich.

3½h.p. N.S.U., magneto, recently overhauled by makers, perfect condition, spares, good tyres, Riches tubes; accept £20, or near offer.—J. Riches, 22, Howbury St., Bedford.

3½h.p. Triumph, 1907, B. and B., h.b.c., Palmer cords, new belt, thoroughly overhauled last June, condition perfect; £22.—Motorist, 9, John St., Rose Lane, Norwich.

CAN Deliver the following 1912 models from stock: Zeniths, 3½h.p. and 6h.p.; Douglas, models K.T.; Enfield, 2-speed, 2¾h.p.; B.S.A., clutch; Singer, clutch; Bradbury, clutch; Matchless, 6h.p. standard.—King and Harper, Cambridge.

BRADBURY, standard, £48; New Hudson, 3-speed, 47 guineas; 1909 Triumph, Cowey, lamp, horn, £34; 1907 Triumph, overhauled, lamp, horn, £23; Chater-Lea sidecar, nearly new, £7/10; exchanges; 1911 2¼h.p. Humber, equal new, £25.—Wilderspin, agent, Chatteris.

1912 L.M.C. Motor Cycles, 3½ and 4h.p., immediate deliveries; all models in stock; catalogue and best terms.—W. E. Sneezum, 14, Fore St., Ipswich, sole agent Ipswich and district, including Felixstowe, Walton, Woodbridge, Melton, Wickham Market, Framlingham, Hadleigh, Needham Market, etc. Trials and interviews by appointment.

SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

DOUGLAS, August, 1911, perfect, and equal to new, many spares; what offers?—Deeley, Bromsgrove.

RUDGE, 1911, T.T., F.E., in excellent running condition; £42.—Passey and Hall, Ltd., Ross, Herefordshire.

1¾h.p. Motosacoche, thoroughly overhauled, condition perfect, Palmers; £16.—2, Penybryn, Gobolfo, Cardiff.

£37.—1911 Rex, 5h.p., perfect condition, new Dunlop, take any hill; approval, deposit.—O'Callaghan, The College, Worcester.

FOR Earliest Deliveries of Triumph, Humber, Enfields, Singer, Premier, apply at once, Griffiths, Cycle Emporium, Llanelly.

BROWN, 3½h.p., in perfect running order, magneto, non-skid tyre, new belt; £15; will ride 50 miles.—Frank, Post Office, Evesham.

TRIUMPH, 1912, F.E. (new), in stock; would take 1911 F.E. Triumph in part exchange.—Passey and Hall, Ltd., Ross, Herefordshire.

NEW Hudson, 2¾h.p., 1912, 3-speed model (new), in stock; would take 1911 F.E. Triumph in part exchange.—Passey and Hall, Ltd., Ross, Herefordshire.

1910½ Triumph, perfect condition, P. and H. lamp, Jones speedometer (trip mileage), exhaust whistle, spares; £38.—Williams, 67, Gwydr Crescent, Swansea.

THE MOTOR CYCLE

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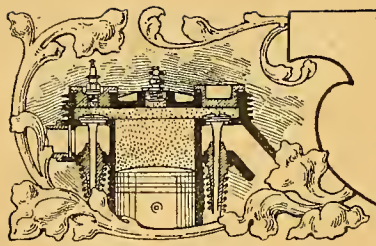
The Trade and the T.T.

THE meeting of the motor cycle section of the Manufacturers' Union referred to in our last issue, where one of the items on the agenda was to consider the Tourist Trophy Race Bond, was duly held, and the decision was that the bond should be sustained. Two or three prominent members brought forward strong arguments in favour of the races being supported as heretofore, but they could not carry the meeting and were finally outvoted. The principal reason offered in favour of the bond being upheld was that the trade recognised at the time they signed the document that it was a binding agreement, and that any arguments against it should have been raised beforehand and not after it had been signed. This latter is a dignified way of looking at the subject, but not in our opinion a final and binding reason for refusing to cancel the bond, provided it was wrong in principle or detrimental to the industry and pastime. However, the bond is sustained, and will, we believe, be adhered to loyally. The A.C.U. will have to do the best it can without the Manufacturers' Union, whose members—at least those who have signed the bond—cannot aid their clients more than to tune up any machines ordered for the race to the best of their ability at their works and hand them to the purchasers. More than that they cannot do without breaking the terms of the bond. The signing of the bond was not, however, unanimous, and already three or four manufacturers have entered for the race.

We still believe that, despite the decision of the manufacturers, practically all the best makes will be represented by private owners who will, we hope, be genuine amateurs in every sense of the word. At the same time, we cannot help thinking with our knowledge of what occurs in connection with the T.T. and other important events that there are very few men who are prepared to buy their racing machines and accessories, pay entrance fees, all their own training and other expenses, and race purely for the honour of winning, even if they are in a position to do so. There are exceptions, of course, but we doubt if they are sufficiently numerous to make a really successful race. The trade should not close their eyes to this.

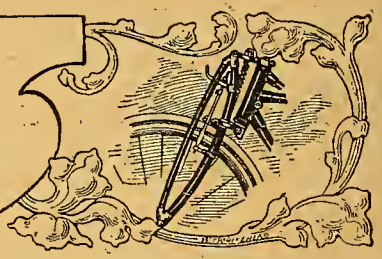
The A.C.U. will also find it difficult to organise the two races over the long course without financial assistance from the trade in the way of entrance fees, neither can it expect monetary help from the Manufacturers' Union in the same manner as it was assisted by the Stanley Show Committee if it run contrary to the wishes of the Union. It has been suggested to us that if the A.C.U. would even now confine the race to private owners the Manufacturers' Union would make a handsome donation towards the fund. The dispute which took place between the N.C.U. and A.A. regarding the control of pedal cycle racing resulted in the Manufacturers' Union giving the N.C.U. £250 to help the latter to retain its control of the pastime; if it would do this for the N.C.U. it would probably do as much or more for the A.C.U

Whether the race be a mixed one or not the chief point to our mind is to ensure that all who enter as private owners do not obtain assistance in any form. Unless the regulations are most carefully drafted and rigidly adhered to there is a strong possibility that "shamateurs" will creep in, and if stratagem be resorted to it is one of the most difficult problems to detect who is or who is not a genuine private owner.



LUBRICATION.

Can we Improve upon Existing Systems?



THE lubrication of the motor cycle engine is a matter which for a year past has aroused considerable interest. True, the pump of to-day is a vastly improved affair, and in expert hands the system is one which gives excellent results. There is a total absence of complication, and one may apportion the oil supply according to the load or speed of the engine, so that quite a good case may be made out for a policy of letting things be.

However, we are not all experts, and many would welcome some automatic device which would require no attention.

Again, convenient and efficient as the hand pump is it is decidedly not ideal. The ideal lubricating system should give a steady supply of oil, whereas the pump injects large doses at considerable intervals.

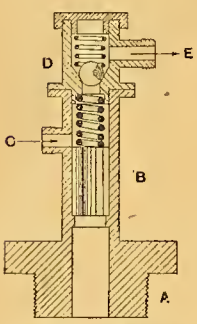


Fig. 1.—An automatic pump to take the place of one of the valve caps.
A. The plug fitting.
B. The plunger.
C. The inlet from tank.
D. Ball valve for outlet.
E. Outlet to crank case.

The Drip-feed, etc.

Motor cycle lubrication has so far gone through very much the same stages as car lubrication did in the early days. The hand pump being abandoned as a nuisance by the motorist, the drip feed came into vogue, and although this in turn has been long supplanted on the car by more scientific systems, it represents the most advanced oiling system in use to any extent on motor cycles at the present time. The drip gives a steady supply of lubricant and lends itself to accurate adjustment, but the oil being thick and the feed only by gravity the pipes have a tendency to choke, and by the time the sight feed is flooded it may be too late to avoid a seized bearing. Also the sight feed is by no means very reliable, for the oil is splashed all over the glass, rendering it a matter of difficulty very often to see if the oil be feeding at all. Moreover, we must retain the hand pump to fill the crank case after emptying. The Rex arrangement of oil spray in the induction port acts well, but is, of course, subsidiary to the main system. Suction operated systems in which oil is drawn into the crank case on the up stroke of the piston are quite practical.

Lubrication and Wear of Bearings.

It is not generally recognised that with a suitable oiling system wear in bearings can be almost eliminated. Had the ball bearing crankshaft not been rendered practical, and so obviated wear on the main bearings, the crude hand-oiling system would, no doubt, have been supplanted before this. As it is, the main bearings being of the ball type are easily suited in the matter of lubrication, leaving the big-end, gudgeon pin, and cylinder to be provided for. Now the existing method of oiling all these parts is by simple splash, whatever may be the means adopted for introducing the oil into the crank chamber.

But is splash lubrication the only method? Could not a more scientific system be evolved giving freedom from smoking, less carbon deposit, less wear of bearings, and greater economy in oil? The writer thinks so, if motor cycle designers would use a pump and do away with splash. It is quite easy to demonstrate the crudeness of oiling by splash. In the first place, there is no regulation except by the level to which the flywheels dip and their peripheral speed, while such a part as the gudgeon has to rely upon drippings of hot and consequently thin oil containing very often particles of carbon, the result of oil charring on the inside of the piston head, to say nothing of the sediment of carbon and worn metal which is being continually splashed to all the bearing surfaces.

Surely a more scientific way would be to supply each bearing surface independently, and do away with the splash, catching the oil, filtering it, and using it again.

With present-day systems the oil consumption is admittedly low, but there is no reason why one should be steadily pumping oil to waste all day.

A Suggestion for Forced Feed.

What the writer suggests, then, is to take a leaf from the car designer's book, and use a pump, not to put oil into the crank chamber, but to distribute the oil directly to the bearings. If we can overcome leakage, there is no reason why we should not force oil under 5 to 10 lbs. pressure to the bearings, and by so doing form a film of oil between bush and journal which will prevent actual metallic contact.

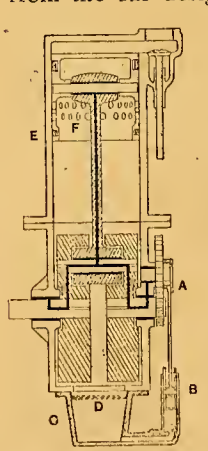


Fig. 2.—Sketch to show the application of forced feed to motor cycle engines. The oil under pressure is shown black.
A. Eccentric driven off half-time gear.
B. Plunger pump.
C. Sump.
D. Wire gauze filter.
E. Scraper ring on piston
F. Holes drilled in piston to allow escape of excess of oil.

This can be done, and has been done, and tests show a steady decrease in the power lost by friction as the oil pressure increases. Also the engine is made more quiet, and the fact that bearings so oiled take longer to run in is proof that the wear is less. Such lubrication also gives an engine which can develop its maximum power for longer periods—a quality which, needless to say, is a most desirable one in a motor cycle engine.

A defect of a pump system is often said to be the difficulty of driving it slowly enough to avoid

Lubrication—

filling up the crank chamber, and a worm drive is generally considered the only solution.

But if we have a sump in the crank chamber into which all oil drains after exuding from the bearings, and if we use this oil over and over again, only filling up from the main tank about once in a hundred miles to compensate for wastage, the actual amount thrown by the pump does not matter within reasonable limits. We can therefore have a tiny plunger pump eccentric actuated from the timing gear or a little pinion pump. While it is best to "drown" the pump by placing it at the bottom of the sump, so that there would be little likelihood of its pumping air, it might be more convenient to have it directly attached to the timing gear, or even attached to the cylinder. In these cases it would be best to have the lead from the hand pump connected near the feed pump. The simplest pumping device of all would be a simple spring and plunger device screwed into one of the valve caps. It could be adjusted to operate by explosion pressure, the spring providing the return suction stroke, and thus a pump without driving gear would be obtained.

Filtering the Oil.

Given a good oil, well filtered, tests have shown that continued use has little deteriorating effect. It may be discoloured and have a certain amount of water and petrol in suspension, but, if of good body in the first place, retains its quality so long as solid matter is removed. The latter means an efficient filter, and the simplest is merely a fairly fine gauze over the sump. However, this, if fine enough to be really efficient, becomes too easily choked, while it is not altogether easy of cleaning, unless the entire sump, with oil and gauze, can be readily removed. The great difficulty is to arrange for the removal of the pump and filter for inspection or cleaning without wasting oil, and this is best met by surrounding the pump with a triple gauze cylinder, and placing both in a little cylindrical chamber at the side of the sump, so that they can be drawn straight out vertically.

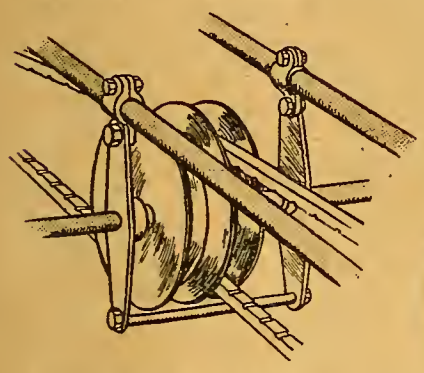
With open ball races there is a little difficulty in introducing the oil into the oil-ways drilled through the crankshaft, but, with a little ingenuity, this could be overcome in several ways. Also, with forced lubrication, the plain bearing would compete quite well with the ball type as regards life, and would give both quieter and smoother running, on account of the substitution of an oil film of considerable surface for the metallic point contact of the balls. From the crank pin a hollow connecting rod would take the oil to the gudgeon, while the oil thrown off the flywheels would more than suffice for the cylinder walls. Over-lubrication of the cylinder is indeed one of the principal troubles with forced feed on cars, but it can be successfully overcome even where the usual baffle plate is omitted. By drilling the skirt of the piston, not only is weight reduced, but excess of oil can escape; while another solution is the provision of a scraper ring at the bottom of the piston. With some means of preventing an excess of oil on the cylinder walls we can flood the other bearings, thus materially decreasing friction and actually helping to cool the surfaces.

With the thicker air-cooled oil and the greater heat one would need larger oil ways than where water cooling is employed, if the danger of blocked feeds is to be avoided.

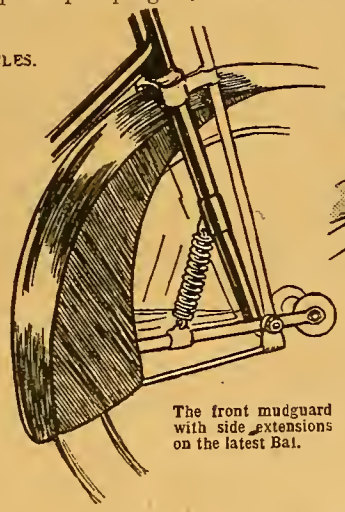
Such, then, is the case for forced feed as applied to the lubrication of motor cycle engines. There are admittedly many difficulties, and, no doubt, opinions will differ as to the practicability of the system, but efficient lubrication being an absolutely vital function of such a mechanism as the light, high speed, air cooled internal combustion engine, one may at least suggest that there is scope for improvement on the crude hand pump.

CYCLOPS.

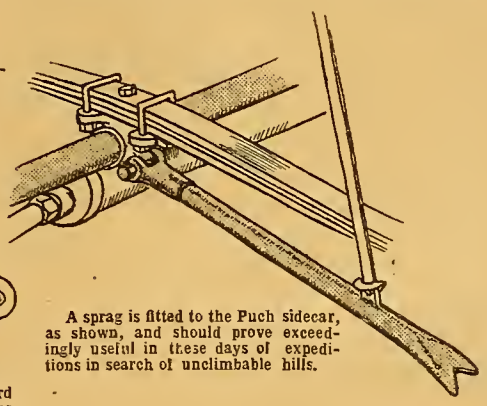
FEATURES OF 1912 PATTERN MOTOR CYCLES.



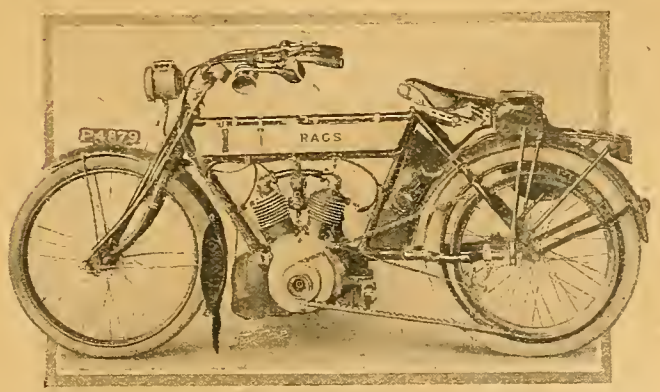
The rocking pulleys of the Autotrix runabout, giving a variable gear.



The front mudguard with side extensions on the latest Bat.



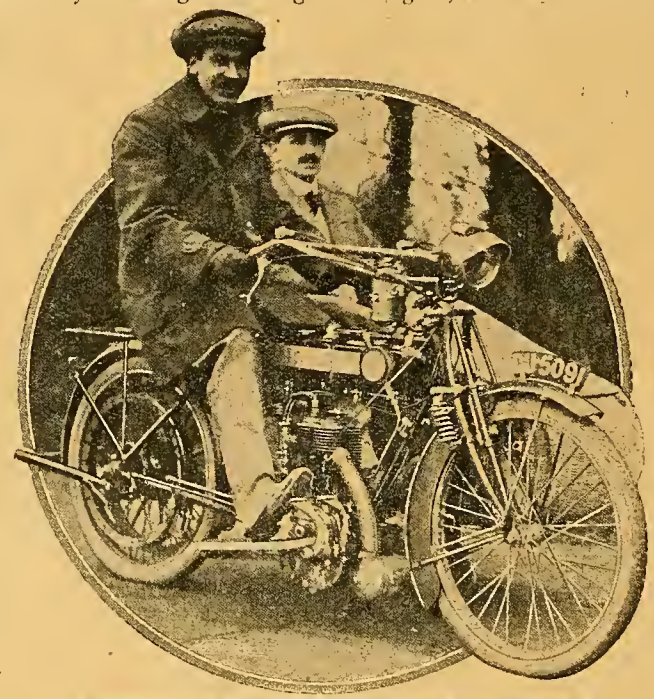
A sprag is fitted to the Puch sidecar, as shown, and should prove exceedingly useful in these days of expeditions in search of unclimbable hills.



R.A.G.S., an appropriate title selected by T. W. Tattersall for his Chater Lea-Peugeot. This rider and machine won a gold medal in the London-Exeter run.

Up Edge Hill on a 3½ h.p. Humber Sidecar.

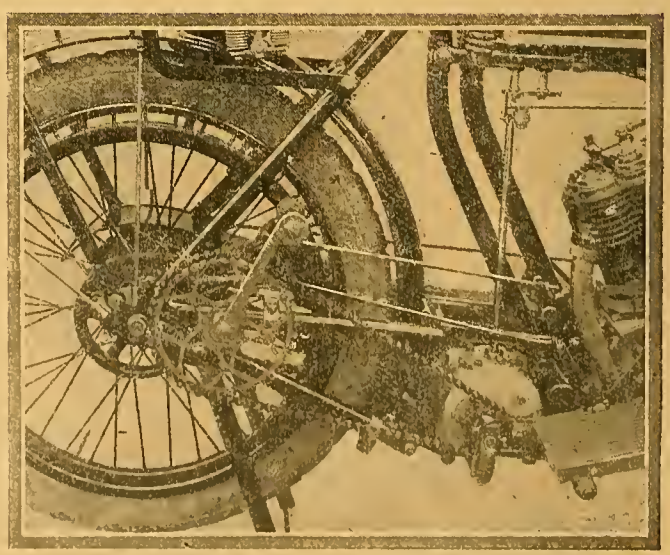
ON the 17th inst. a member of our staff accepted a seat in a Humber sidecar for a trial run to Banbury and an opportunity of seeing something of the Sutton Coldfield Reliability Trials. The machine had only that morning been finished and had had no testing, yet it ran most excellently and with great steadiness in the experienced hands of S. Wright (the holder of the lightweight hour and other records). The engine was the latest model with offset cylinder 84 × 90 mm. bore and stroke, 499 c.c., and was fitted with a half compression device. The magneto was handle-bar controlled. In spite of the heavy roads—and they *were* heavy in places—the machine made light of the gradients, and we sped along merrily to the foot of Edge Hill. Having lowered the gear we started the climb with engine still hot and got within 150 yards of the top, not through overheating, but due to the gear not being low enough. As time was getting on we did not stay for another attempt then, but went on to Banbury, where we lunched with the Sutton Coldfield competitors. In the afternoon we returned to Edge Hill, and after witnessing the ascents, good, bad, and indifferent, another attempt was made, this time with a cool engine, and the machine came up well; also after again returning to the foot a second ascent, with a stop and restart on the hill, was successfully carried out. This must be considered very satisfactory in view of the fact that many 3½ h.p.'s failed when ridden solo (there was only one 3½ h.p. with sidecar in the trials). The Edge Hill test being satisfactorily accomplished we returned to Coventry by way of Stratford-on-Avon, and in spite of the mud the Humber showed a very good turn of speed, touching 35 m.p.h. in suitable places, and having no difficulty in keeping up with a 3½ h.p. solo machine. Although the machine had had no previous test, only one small adjustment was required throughout the day, viz., the tightening of one of the two-speed gear bands, which was done in half a moment. The engine started easily and pulled very well, and the conclusion forced upon us was that the Humber sidecar combination was an eminently serviceable mount, and very stable in grease.



The 1912 two-speed Humber sidecar, some experiences with which are recounted on this page.

NEW BAT FOOT STARTER.

The Bat sidecar is now fitted with a foot starting device, consisting of a large sprocket to which the pedal is attached, carried eccentrically in a bracket brazed to the off-side of the rear fork adjacent to the back axle. The after of the two gearshafts carries a set of dogs, the corresponding set of dogs being carried on a free wheel running on a phosphor bronze spindle attached to a bracket fastened to the gear box. The ratio between the free wheel sprocket and the larger sprocket is 3 to 1 (the total ratio from starting pedal to engine being 6 to 1). The free wheel, which is carried on a phosphor bronze spindle so as to obviate wear, possesses a ball pushed up against the spindle by means of a spring. At the end of the bracket there is a pedal attached to the arm for pressing the free wheel sprocket in engagement with the dogs on the gearshaft. On the starting pedal being depressed and the engine started the free wheel is automatically thrown out of engagement with the gearshaft. The plunger inside the free wheel serves to prevent the latter from being pushed accidentally into engagement with the gearshaft. The starting pedal is provided with a stop against which it normally rests.



A foot starter is the latest addition to the Bat sidecar.



OCCASIONAL COMMENTS

BY "IXION"

Lighting Dynamos on Motor Cycles.

There seems to be a certain tendency to hail the advent of lighting dynamos upon motor cycles, but in my opinion it is a somewhat premature tendency. Acetylene head lamps may be susceptible of improvement, but the man who carries a couple of simple generators and exercises ordinary commonsense in operating them seldom has any real ground for complaint. In putting a miniature lighting dynamo on a motor bicycle at the present moment it appears to my mind that the rider is burdening himself with extra weight, complication, and unreliability, and obtaining less in the way of illumination. A detachable dynamo may well prove to be the light of the future, but at the present moment I cannot compare it with a good acetylene outfit in point of lightness, simplicity, and reliability. In my opinion the next stage should be small tanks of dissolved acetylene.

Magneto Timing.

I can well remember when makers stamped no timing marks on the valve gear pinions, and the unlucky wight who rashly disturbed his pinions frequently spent many hours in the effort to find a setting which did not cause both his valves to open and close simultaneously or achieve some other equally weird eccentricity.

To-day the thoughtful factories save such gentry from themselves by stamping the timing wheels in unmistakable fashion. But the magneto timing is not similarly safeguarded, and quite a crop of cases came under my notice last year in which unskilful amateurs were hung up through inability to time their magnetos.

In some instances the friction-held sprocket on the armature spindle shifted; in others the timing was disturbed in the course of repairs; in others the chain stretched or broke, and so on. We want to make the machines as fool-proof as possible, and words fail to describe the folly of many enthusiastic riders. I am well aware that all makers give instructions in their handbooks, but the hints leave room for wide error. A careless rider fails to judge the top of the compression stroke by two or three millimetres; he further misjudges the exact break of the platina by several more millimetres; he puts his ignition lever in the wrong position during timing operations; and he finally lets the sprocket or pinion slip on the armature spindle while he is tightening the nut, with the result that his home-made timing is often inaccurate.

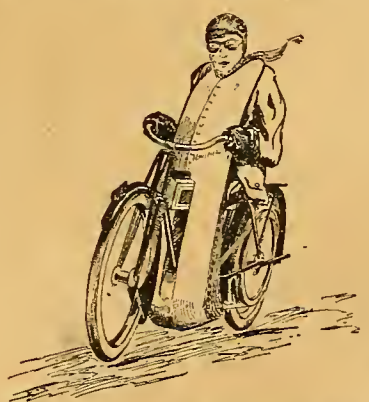
It would be a very easy matter for the makers to safeguard duffers in this respect, as they are already safeguarded in respect of valve timing. A punch-mark on the inner flange of engine pulley or sprocket would indicate the piston's dead centre to a hair; and a supply of gap-gauges (for use between armature and pole-piece) could be used for setting the armature, and would serve as stops against which to tighten the driving sprocket or pinion; alternatively, the better plan of a rigid lock for the driving member, as utilised by one or two makers, might be universally adopted. Within the last two years I have encountered twenty or thirty cases of inexperienced amateurs in trouble for want of such help, sometimes in big competitions, sometimes in private tours; and in three cases I have found riders baffled by failure on hills ascribable simply to home-timing of the magneto.

My Tyre Plans for 1912.

My tyre luck has been dead out for several years past, but I have learned a great deal, and readers may be interested to know how I hope to dodge the puncture bogey in 1912. My touring mount will be shod with two of the heaviest and most expensive covers money can buy; they will only be 2¼in., because it is quite possible to hav a thick tyre without having a broad tyre. They will be non-skids of the rubber pattern, devoid of steel studs; nothing gives quite as high a security factor as steel on the worst type of grease, but steel studs strain the fabric casing, and can induce side-slips on smooth stone or wooden surfaces.

Inside the covers I shall not have butt-enders, because once last year I got a huge nail through the butt, and had a rare job to mend it. I shall start with endless tubes, in the hope that they will go through the year unpunctured: if I have to cut one of them out some fine day, I can easily have it butted during repairs.

The tubes will be filled with Firmax. I have not found this compound provide any special safeguard in the event of a really big puncture, but on several occasions it has proved a real boon. Once last year I ran over a packet of pins (or so Sherlock Holmes inferred from the state of my tyres), and yet the tube held up fairly hard for six hours at least. Such a mishap in pouring rain, without the help of Firmax, would break the stoutest heart, if no spare tube were available. A front wheel stand, and a quickly detachable back wheel, with the brake outside the periphery of the belt rim, complete my provision. For repairs I shall carry a modern repair outfit, provided with the best tyre repairing solution, and a Dunlop patch-presser—the last is one of the neatest accessories that has gladdened my cynical heart for years.



"Ixion" recently suggested a light shell body as a protection from the elements. An admirer of "Ixion's" notes has put the suggestion on paper, but it cannot be termed elegant.

Cost of Running a Motor Cycle.

Further Selection of Replies to a Reader's Query.

See also pages 1197, 1247, 1318A, 1357, 1380, 1422 (1911), 5, 64, 131 (1912).

Sir,—I have always kept an account of every item that my motor cycling has cost me, I have just turned it up, and find the following results—perhaps they will interest your readers.

Total cost of everything, including insurance (three years only, third party, fire, and theft), A.C.U. fee, oil, petrol, repairs, renewals, tyres, and licences:

				3¼ H.P. REX.				
				Miles run.				
1906	£14	8	7*	1,580	Machine cost..	£14	0	0
1907	2	2	4	735	Sold for ...	12	0	0
				3½ H.P. TRIUMPH.				
1908	£6	10	0	1,882	Machine cost..	£26	10	0
1909	6	13	8	1,711	Sold for ...	20	0	0
1910	4	8	6	1,125				
1911	4	3	6	425	Years 4)	£6	10	0
Tl. for 6 yrs.)	£38	6	7	6)7,458		£1	12	6
Per year	£6	7	9	1,243				

*A great deal had to be spent to put machine in up-to-date order.

The cost of extras, which other contributors seem to make a great point of, will perhaps be a startler, as the only cost I have to record is—

Burberry motor cycle coat	£3	3	0
Hat		3	11
Ditto		3	11
Leggings, one pair overalls, etc ...	1	3	6
Gloves (three pairs)		10	0
Breeches	1	6	2
Goggles, etc., are included in renewals.			
Years 6 ... ...)£6	10	6	
Per year £1	1	9	
Against this I saved in railway fare for the six years ... ... Years 6)£11	6	9	
Average £1	17	9	

W.V.P.

Sir,—I set up a motor cycle last March, and thought perhaps particulars of the first eleven months' running expenses might be of interest to some of your readers. They are as follows:

Licences	£1	5	0
Insurance and A.A. subscription	3	11	0
Two sets of overalls	3	17	0
New inner tubes	1	6	6
New outer covers	4	2	9
Lamps	1	17	0
Sundry repairs	2	6	5
New valve		4	6
Valve extractor		1	9
Lubricating oil		6	3
Punctures and patches		4	4
Goggles		3	6
Carbide		1	0
Petrol	2	7	7
Total £21	14	7	

My first machine was a second-hand 3½ h.p. Triumph, which cost me £45. In June I exchanged it for another make, and again disposed of the latter for a 1911 Triumph model, paying an additional £17, so that the total cost of my machine was £62. Nothing has been allowed for depreciation. (Rev.) J. A. ROSS.

Sir,—I have now been a reader of your valuable paper for several years, and have read with great interest the columns headed "Cost of Running a Motor Cycle" by various people. I have for the past four years kept strict records of the upkeep of my 3½ h.p. machine, and I think you will agree with me, on looking through my figures, that they form a very fair basis from which any individual rider may calculate for himself the approximate cost of running his machine.

	No. of miles.	Cost. £	s.	d.	Pence per mile.
Depreciation (in market value) after riding same machine for four years (when average mileage =5,000 miles per annum)	20,000	30	0	0	.36
One gallon of petrol ...	90		1	3	.16
Back cover (Dunlop studded)	3,500	2	0	0	.13
Interest on outlay of £30 at 5%	5,000	2	10	0	.12
Renewals and upkeep ...	20,000	5	0	0	.07
Belt (Stanley Dermatine)	3,000		16	0	.05
Front cover (Dunlop studded)	8,000	2	0	0	.06
One quart of lubricating oil	300		1	6	.06
Licences (when average mileage=5,000 miles per annum)	5,000	1	5	0	.05
Insurance (third party claims only, value £50)	5,000		10	0	.02
Back tube (Dunlop) ...	6,000		10	0	.02
Front tube (Dunlop) ...	12,000		10	0	.01
Total cost per mile = 1.13d.					

The rate per mile is taken from average length of life of various parts, observed over a period of four years, with a yearly average of 5,000 miles.

R. S. GREENHALGH.

Sir,—I have read the recent letters on running costs, and perhaps my experience with a 5-6 h.p. four-cylinder F.N. may be of interest.

I notice the majority of letters deal with the first 5,000 or 10,000 miles—a season's run—which, in my opinion, gives a wrong impression to the average motor cyclist.

Early in 1910 I purchased a second-hand 1909 4½ h.p. four-cylinder F.N. I had the 4½ h.p. cylinders replaced by the 5-6 h.p. size. The machine had been run about 5,000 miles. During the past two seasons I have covered a distance of over 15,000 miles, making a total of 20,000 miles.

Oil consumption.—I am a pretty heavy hand with the oil pump, seldom getting more than 200 miles per gallon.

Wear and tear.—Although my machine has covered 20,000 miles, the compression is quite as good, the petrol consumption is equal, and the machine certainly climbs better than it did for the first 10,000 miles. I replace all the inlet valve springs every 1,000 miles to get equal tension. This is the one weak point of the F.N. These springs only cost 1d. each, however. I have also replaced one or two parts of the spring forks.

Transmission.—This is the best point of the F.N. Although it has run over 20,000 miles, and been subjected to rough usage, it has not cost me a penny for repairs. I have adjusted it about three times—a five minutes' job.

A replacement I had to make was from a most unusual cause, due in the main to my own carelessness. This was stripping of the timing wheels and breaking the magneto-shaft. This originated with the magneto cover falling down at one end, and as the F.N. magneto is upside down compared with the usual, it allowed the road grit to enter the interior of the magneto.

Tyres.—My average mileage for the back tyre is 3,000.

BILL O' JACKS.

[With the above letters we bring this series to a conclusion. There can now be no doubt existing in the minds of prospective riders as to the low cost of running a motor cycle, and, as the replies prove, cost largely depends upon the personal inclinations of the rider.—ED.]

THE MIDLAND RELIABILITY TRIAL.

BY A COMPETITOR.

THE scene at the Gun Barrels on the Bristol Road at nine o'clock on the morning of the 17th looked to the casual observer a *mêlée* of motor cycles and weirdly clad figures with numbers round their waists.

To the competitors it was different, and arriving a little before nine o'clock I soon had my numbers fixed and the official time on my wrist.

After a little confusion we lined up, and punctually to the tick got away easily. The styles of getting away were many and various, some had handle starters, some kick starters, and these could be subdivided into those that worked and those that didn't; others had to run, some a few feet, some a few yards; others got off easier, as, for instance, the Levis riders, who merely sat on and prodded the ground with their feet, and at once the little two-stroke went off with a roar. Tramlines to the top of Selly Oak were not appreciated, and it was soon evident that riders of insufficiently guarded machines were in for a mud bath. Rose Hill claimed some victims, and there was a little knot of spectators on the steep bit. We created quite a sensation in Bromsgrove, as, indeed, we did all along the route, for the entry was large, and the procession of motor bicycles must have seemed unending to the various spectators.

Steadiness in the Grease.

Soon after leaving Bromsgrove one of the Morgans was seen in trouble with tyres, the roads were in a shocking condition after the hard frosts of the previous week, and I was much surprised at the steadiness of the Morgans on the grease. Most of the solos and some of the sidecars were far from comfortable, skating all over the road, the steadiest machines being the twin lightweights. Soon after Stratford one or two unfortunates were passed ruefully examining tyres, due doubtless to the occasional patches of unrolled stones.

Sunrising claimed its usual complement of failures, but the New Hudson and sidecar made a fine climb, although apparently geared low. McNab nearly succeeded in getting his tiny Levis up, but the last few yards made it necessary for him to run, a voice from the crowd urging him to get something more powerful. Warmington Hill proved easier, the surface was slightly better, but it was said that the officials were a mile or more out in their calculations of the distance. Banbury folks should by now be getting used to long streams of motor cyclists, but their interest was still unabated. Some few men retired here, and one or two late arrivals came in for a little chaff. Petrol was taken in, and one of the garage attendants tried hard to persuade me that he had put a gallon and a half into a tank that just held a gallon. He tried in vain.

Homeward Bound.

Starting back, we found the road a bit drier, but Edge Hill was very greasy, and the sidecar drivers had to get their passengers to bear down on the back wheel—a matter for



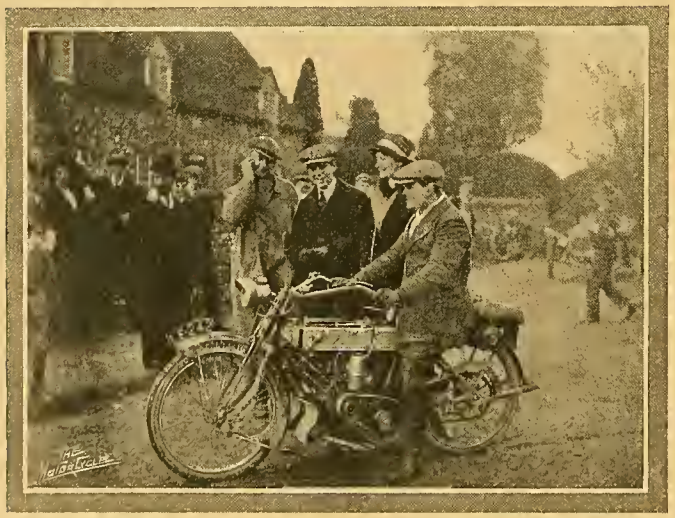
(1) General view at the foot of Warmington Hill. (2) Competitors approaching Edge Hill, C. R. Collier (Matchless) leading. (3) H. C. Newman (Ivy-Precision) at the hairpin bend on Sunrising. (4) The last knock. A failure on Sunrising. (5) A Triumph rider makes a good ascent of Edge Hill.

The Midland Reliability Trial.—

disqualification if rules were adhered to. The Rex, Douglas, and Triumph machines came up well. Holloway, on a single-geared Premier, also shone conspicuously, but the sidecars did not perform as well as they might have done, the Calthorpe and the A.J.S. suffering from slipping clutches. Slipping belts fetched several out of the saddles, and a slipped gear lever momentarily stopped Miss Hough. Between Sunrising and Stratford it was evident that some making up of lost time was taking place: the riders were thinking of that secret check in the last section. Belt trouble was very small considering the awful state of the roads, but one thing struck me—the chain-driven sidecars were more susceptible to back wheel slip on hills than the belt-driven type. A.G.D.C.

Another Meeting at Arms Hill.

ANOTHER party of London motor cyclists met last week and journeyed down to Henley to attack Arms Hill. The roads were in a terrible condition, almost every rider skidding. On arriving at the hill the writer was surprised to find so many local non-motor cyclists and riders from quite distant parts; the last-mentioned had been there all the morning, and many claimed to have made an ascent. The surface was undoubtedly worse than on the previous week-end, as two men failed on this occasion who managed to get up last week. These were O. K. Meredith (6 h.p. Zenith) and C. W. Meredith (3½ h.p. Bradbury N.S.U. two-speed). The star performance was undoubtedly made by G. Griffiths, who literally tore up on the 8 h.p. Zenith belonging to W. L. T. Rhys. The owner tried first but skidded; he then invited Griffiths to try. Seeing the last-named made such a fine performance Rhys was determined to equal it, which he did in no uncertain manner. It was a sight not to be missed to see these two in turn bring the Zenith roaring up the steep ascent, annihilating the 1 in 3 as if it were a mere nothing. The rear tyre was a rubber and steel-studded Shamrock-Excelsior, and the engine was fed from a Binks carburetter.



Rex G. Mundy astride the 3½ h.p. P. and M., on which he gained third place in the Midland open reliability trial. The photograph was taken at the foot of Arms Hill, near Henley-on-Thames.

On the first attempt Hal Foote, 8 h.p. o.h.v. T.T. Bat, who the previous week had made such a fine show, skidded, but after returning to the hill foot subsequently managed to reach the top at a terrific pace. To get down again is usually a very exciting business, but Foote decided to ride down, and on the 1 in 3 lost control of his machine and absolutely tore down over the grease, all looking on and expecting every moment that he would have a bad smash at the bottom. He, however, managed to regain control of the big Bat and pulled up safely.

A Machine Runs Amok.

The most exciting incident was when a rider came up on a Bradbury, skidded completely round, fell off, his machine running down the hill minus its rider, and continuing without falling for thirty yards or so, when it took the bank, bending the handle-bars and footrests. Vernon Taylor, on a multi-speed Rudge, had ridden from Coventry to try the hill. He was unable to get his rear wheel to grip on the 1 in 3 pitch and skidded badly at each attempt. W. H. Davey would in all probability have reached the top on his T.T. Bradbury had not the magneto chain come off on each occasion. A splendid performance was made by N. D. Slatter on his 2 h.p. record breaking Akyon fitted with a Cap carburetter. He came up at a rattling pace, but rider and machine being so light he was unable to hold up on the grease. He, however, managed to get well above the "Cannons," which was marvellous considering the size of his engine, namely, 62 × 82 mm., only 247 c.c. Slatter is determined to get up. G. N. Higgs, who arrived on his "A.C.," "Peter the Painter," asked a man present to get some sand and ashes to strew on the steep pitch. This made things much easier, but at the same time it was impossible to get up without a non-skid tyre; steel studs for preference.

A Single-geared Machine Succeeds.

Shaw, a T.T. Rudge rider, made a splendid performance. His machine has Dunlop non-skid tyres and a Senspray carburetter. He had made an ascent on a 6¾ to 1 gear when the writer arrived, but he continued to go up after raising his gear ratio. This he did until 6 to 1 was reached, when he still flew up. H. Garner (8 h.p. Zenith sidecar) tried with a passenger up but failed. He then tried solo when his belt broke, winding itself all round the frame. Later he tried again, but his rear wheel, which was rubber-studded, whizzed round on the steep pitch without the machine making headway. Rex Mundy tried on a 3½ h.p. P. and M., but failed solely through the rear wheel refusing to grip. A Kempshall on the back was considerably worn, so much, in fact, that the non-skidding properties of the tread had disappeared. R. Fletcher and C. O. Roberts claimed to have been up mounted on a 3½ h.p. three-speed Premier and a 3½ h.p. three-speed Rover respectively. The greasy state of the hill undoubtedly helped riders in a way, as it enabled them to keep up their engine speed on the really stiff part.



NON-STOP RUNS

are often spoilt by the use of inferior tyres. There can be no better example of the false economy of fitting cheap tyres than that shown by the number of motor cycles that are put out of the running in competitions from this cause.

In the SUTTON COLDFIELD A.C.'s OPEN RELIABILITY TRIAL, Mr. Frank Smith (5-6 h.p. Clyno and sidecar) made quite certain on this point by fitting his machine with

PALMER TYRES

the result being that he WON THE HIGHEST AWARD. the

COLMORE CUP

AND

GOLD MEDAL

AGAINST 102 OTHER COMPETITORS.

THE PALMER TYRE, LTD., 119, 121, 123, Shaftesbury Avenue, LONDON, W.C.
Motor Cycle Tyre Department: 103, St. John's Street, Clerkenwell.

SEND A CARD TO-DAY FOR



THE "PALMER" BOOKLET.

In answering this advertisement it is desirable to mention "The Motor Cycle."

"PERFECT IN EVERY PART."

B.S.A. MOTOR BICYCLES

Riders' Testimony.

"Every man's experience is a lesson due to all."

The machine runs fine, and I have nothing but praise for it. The sweetness of running and flexibility is wonderful.

F. PENNINGTON, Bradford.

I have now completed 3,600 miles on my B.S.A. Motor Cycle, 2,200 of which was with sidecar attached, and have not had a minute's trouble or anxiety with regard to it.

Mr. C. H. BAYLISS, Gravelly Hill.

I wish to congratulate you on the excellence of the B.S.A. Motor Bicycle.

B. D., Edgbaston.

I consider your machine a perfect touring machine in every respect, and can safely state there is not a better machine on the road.

P. F. SCOTT, Urmston.

MIDLAND OPEN RELIABILITY TRIAL.

MR. B. W. LEE, riding a 3½ h.p. B.S.A. in the above Trial, in connection with the Sutton Coldfield A.C., over a difficult and hilly course with muddy roads, made a

NON-STOP,

and gained

FULL MARKS.

I think the B.S.A. one of the best mounts anyone can purchase.

Mr. H. TICKELL, Wigton.

Allow me to compliment you on the reliability of your machines.

Mr. G. H. WILKINSON, Leicester.

In fact, the B.S.A. is the finest 3½ h.p. Motor Bicycle I have ever ridden.

Mr. A. G. N. CHALMERS, Lyme Regis.

I am more than satisfied with the machine, which is the best I have ever had for speed, hill-climbing, and flexibility.

Mr. F. C. WAKE, Darlington.

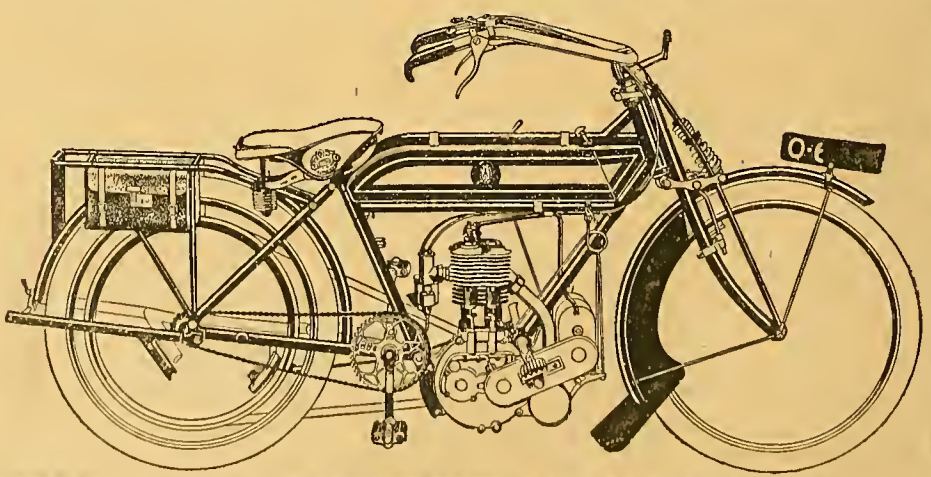
I have nothing but praise for the machine, which I consider one of the best mounts on the market.

Mr. W. JACKSON, Ashton-on-Ribble.

Write now for a copy of the new book of the B.S.A. Motor Bicycle.

It fully describes the new models, with illustrations of the exclusive B.S.A. Refinements. The constructional details of the B.S.A. Two-speed Free Engine Hub are also dealt with in simple language.

THE BIRMINGHAM SMALL ARMS CO., LTD., 13, SMALL HEATH, BIRMINGHAM.



LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Silence and Silencers.

Sir,—The Scott Engineering Co., Ltd., claim that the silencer described by Mr. Gallanday, and illustrated in your issue of February 8th, infringes their patent of 1904.

I made (and sold) a silencer of identical construction about 1902. This silencer was copied from the Oldsmobile —an American car much in favour about that time.

L.H.

Silencers in the Big Trials.

Sir,—What a pity it is that correspondents like "Nightbird" should make such positive assertions which are not facts. Whilst criticising the type of silencer consisting of a barrel with holes in it and an auxiliary barrel inside, he says that it is "a device which, at its best, can only be an efficient silencer and cause back pressure, or be free and noisy." Can "Nightbird" explain why one of the best motor cycle engines ever made—the 2¾ h.p. De Dion—when fitted with the De Dion silencer, which was of exactly the type described and one of the quietest silencers ever fitted to a motor cycle, would give more power with silencer fitted than with the exhaust pipe and silencer completely disconnected. This is no fairy tale, and I am sure that there are hundreds of motor cyclists who would bear me out in stating a fact which I have myself proved time and again.

H. J. DENSHAM.

Suggested Routes for the Six Days' Trials.

Sir,—I see in your issue of February 15th a route suggested for the Six Days' Trials. Another good route is Tavistock, Horrabridge, Huckworthy Bridge, Walkhampton, up Peak Hill, through Princetown, then to Two Bridges and on to Ashburton by the same route as suggested. The hill down to Huckworthy Bridge would try the brakes very well, and from the bridge to the top of Peak Hill is one continuous climb, the hills being much steeper than those between Tavistock and Two Bridges. The road between Huckworthy and Walkhampton is bad, but the remainder has a very good surface.

T 1189.

Sir,—I was glad to read "H.P.B.'s" letter *re* above in the issue of the 15th inst. The route Ashburton to Tavistock ought to be included. While not being too bad a surface, the hills are all one wants on a main road to make a most sporting and interesting run, and, without leaving the road, there are plenty of hills between Ashburton and Tavistock that would serve as observed or test hills. The spot "H.P.B." marks A (if it is the one I have in mind) should give some trouble. It is not usually approached at speed, as the rider has just rounded a hairpin bend, with a narrow humped bridge in the angle before meeting it. In a very little while after he is confronted with a gate right across the road. When five or six yards from the gate he will notice (mostly when too late) that the road turns back sharply to the right at a very acute angle. I don't suppose one in twelve single-geared machines will round it without a stop, the rise being sudden and commencing at the corner. The last time I rode over this route (last summer) the surface, except Poundgate Hill, was very fair, much of it good. I was riding a 2¾ h.p. chain-driven Enfield, geared 6⅞ to 1, which took all the hills comfortably without pedal assistance. A party of us were holding a hill-climb up the steepest side of Dartmeet Hill, which, however, is descended in the suggested route.

Widdicombe Hill is a very puzzling hill, having some difficult corners and being very narrow; but I am afraid it is rather out of the way. Our club men here think that on no account should the Ashburton to Tavistock route be excluded from one of the runs. Ashburton to Dartmeet is considered by some to be the worst six miles in England for gradients.

A. POWELL,
Hon. Sec. Torbay and District M.C.C.

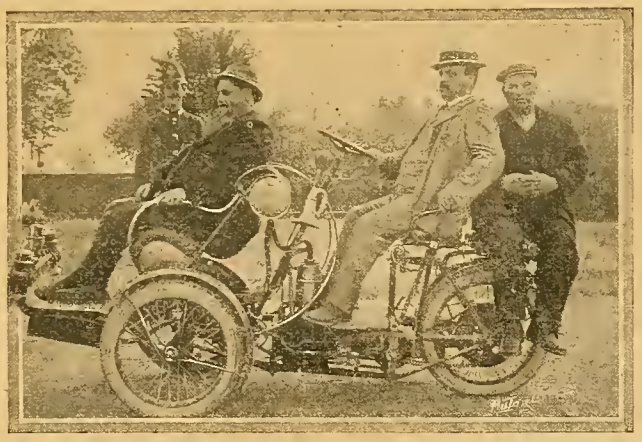
Driving in Traffic.

Sir,—May I be allowed to correct "Ixion" about his ideas of a car being more easily handled than a motor cycle in traffic? I have tried it, and found it was not the case. I successfully drove my free engine Triumph from Shepherd's Bush to the Metropole Hotel without the slightest difficulty. Although there were several traffic blocks, I started each time as quickly as the car in front of me, and very often was able to accelerate and slip through openings which no car could have gone through. I kept my cut-out closed, and only had to sound my horn once when I was going to start again after a block. By using one's cut-out in traffic a rider makes himself an infernal nuisance, and if it is done it is no wonder the "man in the street" calls motor cycles "beastly noisy affairs." The first thing motor cyclists must do if they want to make the motor cycle popular is to convince the non-motoring public that their machines are not noisy. I think that this regulation about no cut-outs has been brought forward to a great extent through motor drivers using their cut-outs in traffic. Let "Ixion" use a free engine in traffic, and he will find driving a motor cycle as simple as a car. Also, if he has a really quiet machine, he will find that he will draw more attention and approval than by keeping his cut-out open.

FREE ENGINE.

A Heavy Trio.

Sir,—I am sending you a photograph of my 6½ h.p. New Century tricar, Aster engine, chain drive. My passenger on the forecar is my old friend Mr. A. Briggs, manager of the Grand Junction Arms, Lower Place, Harlesden, a well-known



A load of 51 stones 12 lbs. on a tricar.

sculler of 17 stones weight. I am at the wheel—heavyweight champion sculler of the Old Chums Rowing Club on the Grand Junction Canal, weight 16 stones. My son is seated on the carrier; his age is nineteen years, weight 18 stones 12 lbs.—total, 51 stones 12 lbs.

FRED WILES.

Multi-pole Sparking Plugs.

Sir,—In reference to Mr. Arthur E. Bennett's letter, writing for the Bosch Magneto Co., on this subject, the fact that it is necessary to place the points of both plugs very close together for starting does not constitute an admission "that the magneto is not capable of doing the work imposed upon it," as he states, but I do admit that the spark cannot jump two gaps of .5 mm. each when the magneto is running at the minimum speed that will give a spark across one gap of this measurement, so the remedy is to reduce the two gaps to .25 mm. each.

I believe every magneto is provided with a safety gap, and if the current will easily jump the points of a double pole and single pole plugs in preference to this gap, I do not see how the magneto can sustain damage.

The Bosch Co. can now supply a two spark magneto, but those who wish to try two sparks and are not particularly anxious to replace their present single spark instrument by purchasing one of these may do so by the use of a Lodge double pole plug without fear of damage; at least, this is my experience with both Simms and Bosch magnetos, and users' experiences are what Lodge Bros. asked for.

There must be some hundreds of these double pole plugs in use, but I have never yet heard of a single case of bad effect.

I am disinterested, other than as a user in this discussion.

W. J. LANCASTER.

[The above letter has been unavoidably held over.—ED.]

Sir,—With reference to Messrs. Lodge Bros.' letter and diagrams published on the 15th inst., and their statement that the two circuits are practically the same, I should like to point out that there is a great difference in these circuits, and one that bears directly on the argument. In the double-pole plug circuit the two spark gaps are in series, requiring a higher potential difference than in the double-pole magneto circuit. It follows, therefore, that the magneto armature is working at a higher potential supplying two plugs in series, and has more risk of breaking down. It does not necessarily follow that it will do so, this depending on the factor of safety allowed in the design of the magneto.

CLIFFORD PRESSLAND.

Sir,—In the construction of their magnetos, the Bosch Co., knowing what resistances the machines will normally have to overcome, will have designed them for this value, allowing, of course, some factor of safety.

That they are capable of overcoming high resistances, if necessary, shows the caution the makers have exercised, and they are, without doubt, justified in demurring when their machines are habitually run under these higher resistances.

So far as I can see, the Lodge system possesses one advantage over the Bosch, namely, that with two plugs in series the chance of total stoppage through sooting is decreased. In the Bosch, which, I presume, is two plugs in parallel, the chances of stoppage through sooting would be slightly increased.

A. T. STURGESS.

Sir,—I have read with much interest and no little amusement the correspondence on the above subject. There seems to be an idea prevalent among many of your correspondents that using multi-pole ignition increases the load on a magneto. It may interest Mr. Withers, who found that his magneto did not overheat when using Lodge ignition, and also several other correspondents, to know that two, or even a dozen, plugs, sparking in series, do not in any way increase the load on the magneto. The strain set up is not a mechanical one, but is purely an electrical strain on the insulation of the secondary windings. The reason of this strain is fairly obvious; it takes a much greater voltage to spark through several gaps of a given size in series than it does to spark through one of those gaps. This increase in voltage is not directly proportional to the increase in the spark gap, but is nearly so.

A magneto only absorbs power when the contact breaker is closed, *i.e.*, when it is not sparking. This load is due to the fact that when the contact breaker is closed it short circuits the armature windings, allowing a heavy current to circulate round these windings, this load being entirely independent of the number of plugs or the length of spark gap in the secondary windings.

I fully endorse Messrs. Lodge Bros.' remarks. No damage can possibly be done to any magneto by the use of their excellent double-pole plugs, provided the magneto be fitted, as all good magnetos are, with a properly-designed safety gap. The safety gap is, of course, adjusted to flash over before the secondary voltage can rise to a maximum sufficient to break down the insulation of the secondary windings.

ED. C. JENNINGS.

Sir,—We notice that Messrs. Lodge Bros. are again writing on the question of two point ignition, and we do not wish to continue this correspondence any further, having demonstrated to our own as well as many other peoples' satisfaction that a special magneto is necessary.

Under these circumstances, we wish to ask what is the use of Messrs. Lodge Bros. encouraging people to abuse goods of our manufacture. Surely we, as manufacturers of such apparatus, should know what it is capable of, and what treatment is likely to be detrimental to it. . . . . .

The diagrams sent you by Messrs. Lodge Bros. and Co. and published on page 169 are most misleading, as they do not point out that in the case of the ordinary magneto, two gaps are being used under compression, whereas the magneto is only designed to satisfactorily operate one; in the case of the double pole magneto, the construction of this machine is modified to do the additional work.

We hope that you can find room to insert this letter, and sincerely trust that we shall not have to write further on this subject.

THE BOSCH MAGNETO CO., LTD.
ARTHUR E. BENNETT, Technical Manager.

Proposed R.A.C. "Road Guides."

Sir,—Will you be good enough to say whether the scheme of R.A.C. road guides, referred to in the last issue, has been officially adopted? So far as I can see it is rather a bad plagiarism upon the Automobile Association scheme of scouts, and in that case it does not appeal to me as sportsmanlike, to say the least. Surely there is no real need for the R.A.C. to encroach upon the field in which a purely road organisation like the A.A. has operated with such distinguished success for many years. I suggest that this is undesirable rivalry that must lead inevitably to overlapping, friction, and waste of force and money, and that is not for the good of motorists generally.

REIGATE HILL.

[The scheme has not, so far as we are aware, been officially adopted, but is under consideration by the R.A.C.—ED.]

Sir,—I observe in your last issue a letter from the Secretary of the Royal Automobile Club in connection with the proposed scheme, the details of which have been published, for the employment by them of uniformed "Road Guides."

That letter admits that the scheme is a deliberate copy of the road patrol system of the A.A. and M.U. The Secretary of the R.A.C., after referring to the fact that this Association has four years past rendered certain assistance to its members on the road, adds:

> "The members and associates of the R.A.C., amounting to over 25,000, have asked that similar assistance should be rendered to them by their own organisation, and this assistance it is now proposed to give,"

It will therefore be seen that beyond question the duties which the proposed R.A.C. "Road Guides" are to perform will in effect be identical with the duties performed by the patrols of this Association.

I would like to draw the attention of motorists through the medium of your columns to the following salient facts:

The Club has, we believe, about 7,000 direct members, of which number over 4,000 also belong to the A.A. and M.U. In addition thousands of the Club's associates (approximately over fifty per cent.) also subscribe to this Association, and therefore the value of the argument that the scheme is the outcome of a demand on the part of 25,000 members of the R.A.C. is materially reduced, and one is driven to the conclusion that the action of the R.A.C. is devised solely to counteract the phenomenal success of this Association's road scheme. The Secretary of the R.A.C. states that:

> "The Club does not propose in any way to interfere with the A.A. and its members, and sees no reason why the A.A. should interfere between the Club and its members."

I think your readers will agree that a more cynical attempt to justify what may fittingly be described as deliberate

piracy of ideas has never been put forward on behalf of a responsible organisation.

The Automobile Association was founded seven years ago with the chief object of organising a patrol service to render assistance to motorists on the road.

This was the first practical attempt ever made to combat the oppressive and unfair manner in which the speed limit was enforced on the open road. For years we fought single-handed the battle of the reasonable motorist, without assistance from the R.A.C. and other organisations, which stood idly by, and if they did not hamper our efforts at least did not assist us.

The patrol organisation has always been regarded as essentially the leading feature of the Association's work, and its popularity is evidenced by the fact that the membership has grown from less than 100 in August, 1905, to a total at the present time of nearly 40,000 direct subscribers.

Now at the fruition of our efforts, and when the battle of the open road has been fought and won, the R.A.C. proposes to imitate our patrol system.

Our organisation is in evidence on practically the whole of the main roads of this country. Unless, therefore, the R.A.C. intends to confine its efforts to those roads which are not patrolled (which in the circumstances is incredible) its action, even as regards its own members, can only involve overlapping and duplication of that work which for so long has been efficiently carried out by this Association.

My committee still think it inconceivable that the R.A.C., which claims to be the ruling body of motoring in this country, will deliberately adopt a policy which has already been described as one of aggression to a friendly organisation, particularly at a time like the present, when unity is so essential in the interests of the motoring public.

STENSON COOKE.

Sir,—"Uniformed Road Guides" has an ancient and scout-like atmosphere. What the R.A.C. did in the matter of free legal defence it seems to be going to do in the matter of road patrol—both in palpable imitation of the A.A. Apart from the fact that this is not cricket, I suggest that it is not dignified. Certainly the A.A. has no copyright in its ideas, but as between two bodies presumably friendly, and certainly working for a common end, I should have thought that the annexation of one of the planks in the other's programme, without so much as a "by your leave," was almost unthinkable.

I do not suppose the A.A. will take this last act of aggression from the R.A.C. lying down, and if the latter persists with its development (doubtless in the sacred name of unity), I suggest quite seriously that the A.A. challenge the R.A.C.'s right to govern. The A.A. is quite as responsible a body as the R.A.C., and certainly quite as free from trade influences. Its certificates of observed performances would carry as much weight as the R.A.C. certificate. It can organise trials as easily, and perhaps carry them through better, and, by right of enormously superior membership, it can assume the powers of government and demand representation upon the International Council. If I know the International Council as I think I do, the credentials of the A.A. should be accepted readily.

I submit that as one way in which the A.A. might answer this last act of R.A.C. piracy—a way mutually better and infinitely more satisfactory than any likely to lead to an expensive and entirely unnecessary internecine struggle—is for both sides to get together and decide upon a policy that will allow each to develop freely and without conflict with the other's interests. Short of complete unity, this form of federation, quite easily possible, is, I venture to think, best.

PLAY THE GAME.

Hill-climbing.

Sir,—Upon reading the correspondence appearing in your paper respecting the proposed attempt to climb Honister Pass by Mr. Frank Smith on his Clyno and sidecar, I got into communication with the Clyno Engineering Co. and offered my club's assistance in organising the climb.

I have had a reply to the effect that they would be very pleased to leave the arrangements in our hands, and with this object in view they tell me that they have definitely decided to arrive on the ground in time to tackle the hill on March 9th, all other arrangements to be left to this club.

WM. M. MILBURN,
Hon. Sec. Cumberland County M.C.C.

Sir,—If you can spare me the space in your paper. I should like to reply to the letter from "Petrolix" in a recent number *re* the climbing of Honister. Whilst admitting that the surface on the Buttermere side of the pass is very loose, I should consider that the hill is climbable by any powerful two-speed motor cycle, and that without in any way damaging either the machine or tyres, as a few members of the Westmorland Motor Cycle Club have spent some considerable time on this part of the earth, and the last time we were there two Rudges and one Triumph single-cylinder machines almost did the trick. In the opinion of these three riders, given a favourable day and conditions, a 3½ h.p. single will manage it comfortably, as there is only one stretch of sixty yards that has not been conquered. With all the trials we have had on the hill, so far, there has been no damage to tyres, machines, or riders, so can only conclude that there is no special danger in trying the pass, and we are quite of opinion that if Mr. Smith will attempt the climb he will be successful, and quite a number of the Westmorland members hope to be there at the same time to give the Clyno a lead.

B.G.W.

The Nominal Horse-power of Motor Cycles.

Sir,—Regarding horse-power rating, I found a very simple formula which I have used for ten years in motor construction practice. I found this method always reliable. What do you think about it?

A well-designed motor cycle engine gives one horse-power per 120 cubic centimetres capacity. Now, by dividing the c.c. by 120 you will find the exact horse-power of the motor. Examples:

Peugeot lightweight 55 × 70 twin = $\frac{332 \text{ c.c.}}{120}$ = 2.76 h.p.

Triumph 85 × 88 = $\frac{499 \text{ c.c.}}{120}$ = 4.15 h.p.

F.N. four-cylinder = $\frac{494 \text{ c.c.}}{120}$ = 4.11 h.p.

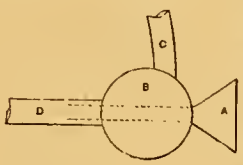
Matchless 76 × 85 twin = $\frac{776 \text{ c.c.}}{120}$ = 6.46 h.p.

Doubs, France. A. SAUBERLI.

[If our correspondent's method gave accurate results ten years ago, it is obvious that nowadays it will be more correct to divide by 100, as already suggested.—ED.]

Cooling the Exhaust Gases.

Sir,—I herewith enclose a description and drawing of a silencer scavenging device which I am fitting to my T.T. Quadrant.



It consists of an air scoop or funnel, reaching through the silencer into a long exhaust pipe leading to the back stays. The rush of air through the scoop into the long exhaust pipe should effectually induce the gases to leave the silencer more readily, thus reducing back pressure to a minimum. The sketch should make the device quite clear.

H.A.F.

Two-stroke Engines.

Sir,—I was very interested in the article by "W.G.A." on two-stroke engines. I have given this type a lot of consideration, and hope you can allow space for a little criticism.

Your contributor, in comparing two and four-stroke engines, mentions four disadvantages and three advantages. With regard to this, taking the advantages first, No. 1 needs no comment, being fairly obvious. No. 2 says the two-stroke is the more silent owing to there being no noisy valves and valve gear. He evidently forgets that in most motor cycle engines the noise of the exhaust completely drowns the valve noises, and as the two-stroke engine, to work with satisfaction, must have a free exhaust, we can expect, in most cases, a more noisy engine. No. 3 says ease of and cheapness of manufacture. This advantage depends upon from whose point of view the advantage is looked at. If it be the point of view of the motor cyclist it is non-existent, so that we must say this advantage goes to the manufacturer. But the motor cyclist does get the advantage from fewer and larger moving parts, with less liability of breakdown.

Taking the disadvantages. No. 1: Decrease of efficiency owing to shortness of mixture in the cylinder. This is only a matter of design, and in a properly designed engine it is possible to get a better and bigger charge of new gases into the cylinder than with even a four-stroke engine.

No. 2: Inflexibility. This is said to be owing to bad suction on the carburetter with crank case compression. Whilst this has its effect, it is by far a lesser evil. It is well-known and proved that two-stroke engines, with the usual type of piston with a deflector cast on the piston head, allow a lot of the incoming charge to escape through the exhaust ports. This varies from 7% at high to 33% at low speed. The top of the cylinder is left full of burnt gas, and the incoming charge must be rich enough to make an explosive mixture when combined with the burnt gases. This accounts for the inflexibility and excessive petrol consumption. This evil can be entirely overcome in a properly designed engine.

No. 3: Difficulty of keeping the piston gas-tight. As your contributor compared the two-stroke piston with the four-stroke piston, he must refer to leakage past the piston rings. In his case both types are in the same position, and the result is the same—lowered compression and loss of power. The remedy is the same for both types, namely, new rings, and possibly the cylinder reground, etc. But the leakage is greater with the two-stroke under similar conditions, owing to the vacuum in the crank case, and the result is disastrous as far as the suction on the carburetter goes.

No. 4: Burning of the sparking plug points. This is owing to the reason explained under the second disadvantage—the exhaust gases are never completely cleared out, so that the plug points never cool. This can be overcome by suitable design.

Your contributor goes on to say that to give good results as a valve the piston should be tight in the cylinder, under which conditions it would soon fail as a piston. Surely a piston with three rings above the ports will hold the same compression as in a four-cycle engine. If they will not hold the compression, how can they be expected to hold the explosion pressures? This brings out another advantage of the two-stroke. When the rings have passed the ports there are no leaking valves; all leakage must pass the rings, which are cooled and oiled. And a piston with one ring at the bottom will surely hold the crank case compression, which does not, as a rule, go above 20 lbs. per square inch absolute.

With regard to water cooling, I do not consider this necessary when the exhaust gases are got away quickly and completely. F. UMPLEBY.

Inclined Engines.

Sir,—I have read with much interest the reasons given by Mr. Wells in his letter of the 15th inst. for inclining a single-cylinder engine backwards. Mr. Wells states that "all the piston thrust comes on the back of the cylinder," but I fail to see why this should be the case. It is true that the maximum thrust during the working stroke is on the back of the cylinder, but, on the other hand, during the exhaust and compression strokes the thrust is on the front of the cylinder, and this is not so small that it need not be taken into accounnt.

I do not see why the backward inclined cylinder should get more oil on the back than on the front of the cylinder, since the oil is thrown off the flywheels to that side of the cylinder opposite to the direction in which the oil is flung.

To incline the cylinder backwards must surely have the effect of increasing the unevenness of thrust, for in this case most of the weight of the piston itself is resting on the back of the cylinder. This is not the case with a vertical engine.

There is little doubt, I think, that the modern vertical engine receives all the oil it requires at moderate speeds, while at high speeds it is a generally accepted fact that the oil fills the crank case in the form of a mist, so that it would pass through an opening in the top of the crank case, just as readily as through an opening in the side.

If the engine must be inclined for the sake of the valves or the length of the stroke, why not incline it forwards, as in the P. and M. and Motosacoche, and so minimise the inequality of the thrust by allowing the weight of the piston to act on the side of the cylinder which receives the least piston thrust?

I should be obliged if Mr. Wells would explain to me why a backwardly inclined engine should prevent "piston clatter." I am the possessor of a bicycle with a single cylinder vertical engine which has no ring at the bottom of the piston, and should be very much surprised if the engine which Mr. Wells upholds has less "piston clatter" than my own, this noise being absolutely unknown to me.

As regards evenness of piston thrust, wear of cylinder and piston, and cooling, the vertical engine must certainly score over the backward inclined engine. VERTICAL.

Cycle-car Design.

Sir,—Might I give a word of advice to designers and prospective constructors of runabouts? There seems to be an impression about that to build a successful car all you want to do is to design something that looks neat.

Now, I can assure these gentlemen that it is one thing to sketch a runabout and quite another matter to see the same in a materialised form and, at the same time, a success. Of course, I admit it takes very little to please some folks.

Whilst appreciating Mr. Taylor's reference to my name, I do not think it was necessary to couple the same with his design. My friends would not have made that error.

Is the Brooklands race for runabouts a handicap? If so, how are they going to draw the line, as it is ever so much more creditable to attain 40 m.p.h. with a 3½ h.p. engine than 50 m.p.h. with an 8 h.p. HAROLD E. DEW.

Necessity the Mother of Invention.

Sir,—Under the above heading in your issue of 22nd inst., a correspondent relates his method of thawing generators. Would it not have been a more satisfactory plan to start up the engine on the stand, and warm the frozen part at the silencer? J. B. DALL.

Sir,—I was particularly struck by the remarkably cute wrinkle adopted by Dr. Selby Clare, but after reading his letter twice to make sure I quite followed the course of operations, I thought I would like to enquire what simple method Dr. Clare adopts on a hard, nipping, clear, moonlight, frosty night, and when the date of the last snowfall was some time during the previous winter. Personally, I prefer the petrol fire to waiting for a snowstorm.

A. B. BENNETT.

The Evolution of Transmission.

Sir,—I notice in his letter, published on the 18th ult., Dr. Patterson states that after trying gear drive for six months he lost heart in motor cycling. Does it not occur to this gentleman that to get such poor results something must have been radically wrong with his transmission? Probably it was loose, and I admit that a loose gear drive is most unpleasant. I fail to see that a seized engine is dangerous in a rigidly driven machine when fitted with a clutch. I have had an engine jam suddenly while riding a chain-driven machine, but the clutch slipped and brought the machine safely to rest.

I was disappointed not to see more weather-proof transmissions at the Show. The chain-drive people make great claims for their system, but in the weather we have been having lately I found that even my pedalling chain became coated with mud and unreliable. I have not yet seen a machine with adequate protection for its chains.

I have tried three methods of gear drive—(1) Singer, engine in wheel, very violent; (2) F.N., very good; (3) T.A.C., worm drive, the smoothest running machine I have ever been across.

H. E. RENDALL.

SUMMARY OF CORRESPONDENCE.

"Continental Tourist," who is contemplating a long motor cycle trip in Holland, Germany, Switzerland, and Italy, or across France, and by water to the North coast of Africa, wants companions. He writes as follows: "A party introduced through *The Motor Cycle* might meet at Whitsuntide and ride four or five hundred miles in England to gain knowledge of each other's idiosyncrasies, etc. Then, if the party were mutually agreeable, arrangements could be made to start some time in July. Expenses, 10s. per diem; time occupied, about three to four weeks." Letters addressed to "Continental Tourist," c/o the Editor, will be forwarded to the right quarter.

The carrier tricar illustrated on page 207 last week is an Omnium, marketed by the Omnium Motor Co., Ltd., 193, Great Portland Street, W.

An Ingenious Pressure-fed Engine.

WE have seen, owing to the kindness of its designer, Mr. Archibald R. Low (the inventor of the Cup plug), details of a new type of internal combustion engine.

Briefly described, it is practically one of the Diesel type. Imagine a water-cooled engine, the jackets of which are filled with petrol instead of water; then as the engine gets warm, the petrol will boil and produce a large amount of vapour, which will develop considerable

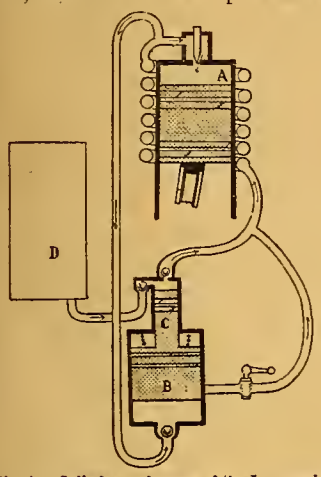


Fig. 1.—Cylinder and pump of the Low engine.

pressure. Now let the engine be fitted with a small valve in the cylinder head, so arranged as to open when the piston is at the top of its compression stroke and allow a certain amount of vapour to enter the cylinder under pressure. The carburetter jet may now be cut out of action, as the engine will work on a cycle of operations, which is as follows: On the suction stroke the piston will draw in through the inlet valve a volume of cold air, which will be duly compressed. At the top of the compression stroke, immediately previous to ignition, a quantity of petrol vapour is injected into the cylinder, mixes with the air already there, and forms an explosive mixture which is fired and exhausted.

Three Important Advantages.

1. The waste heat of the engine is largely regained, as it is utilised to volatilise the petrol before it is injected into the cylinder in the form of vapour.

2. Owing to the fact that only pure air is compressed and the petrol vapour admitted only when the compression is complete, an extremely high compression ratio can be used. Beyond a certain limit, about 150 lbs. to the square inch, a mixture of petrol gas and air cannot be compressed, for the reason that the temperature produced by compression is sufficient to ignite the mixture. When the petrol gas, however, is not mixed with the air until this stroke is complete, the compression may be carried to almost any desired figure, and accordingly results in a very considerable increase of efficiency.

3. The mixture at the moment of firing is, relatively, far from uniform, and consists of a zone of very rich mixture surrounded by a number of zones of mixture, each of which is progressively weaker as it is more distant from the part through which petrol vapour is admitted. The explosion, therefore, as in the case of the Diesel engine, is not a very sudden one, producing an almost instantaneous impact upon the piston, but gives rise to a relatively slow combustion, with the result that the pressure on the piston, instead of falling off rapidly, is maintained longer.

A 416 c.c. Engine giving 18 h.p.

We understand one of these engines has given satisfactory and promising results, a twin-cylinder model of 2in. bore and 4in. stroke having developed about 18 h.p. Unfortunately, we cannot give working drawings, and therefore indicate the arrangement diagrammatically.

A (fig. 1) is the cylinder, provided with an inlet and exhaust valve (not shown); the former is automatic, being inverted and placed over the mechanically-operated exhaust. Wound round the cylinder is a coil of steel tubes, which serves the purpose of a petrol jacket.

Until the engine has developed sufficient heat to vaporise the petrol in this coil, it is run off the carburetter like any other engine, after which the petrol jet is cut out of action and pure air only drawn in through the inlet valve. The vapour, under high pressure from the heating coil, is conducted to a small dome in the cylinder head, in which is contained an inlet valve, which is operated mechanically by a very simple and ingenious means so as to open on the top of the compression stroke and allow a volume of pure petrol vapour to pass into the cylinder head. Furthermore, this valve is arranged to close comparatively slowly, so that the vapour continues to be forced into the cylinder even after ignition has taken place, but it, of course, closes before the explosion pressure has risen very considerably.

The ignition is by coil and battery, the coil being arranged to give a stream of sparks throughout practically the whole of the explosion stroke.

Petrol is supplied from tank D to the vaporising coil by a species of V "Worthington" pump, which works practically automatically and utilises for its working the pressure inside the coil itself.

The pump (not to scale) is shown in fig. 1, and consists of a double trunk piston B C. A connection between that part of the pump cylinder below B and the petrol jacket is provided by means of a non-return ball valve. Between the upper

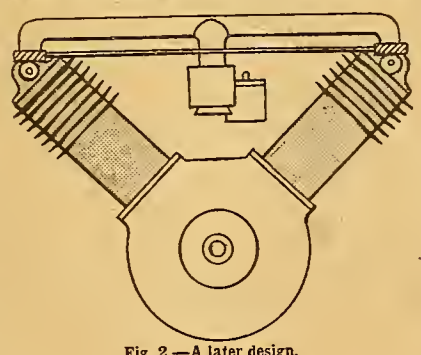


Fig. 2.—A later design.

end of the piston B and the pump cylinder head is a spring, shown in section, against which the gas acts when forcing the piston B and its smaller extension C up in their respective cylinders. An equalising pipe, fitted with a tap, is taken, as shown, from the large cylinder of the pump to the vaporising coil, and when the piston B is at the top of the stroke, forms a continuation, as it were, of the coil circuit. In actual working the piston of the pump, by reason of the

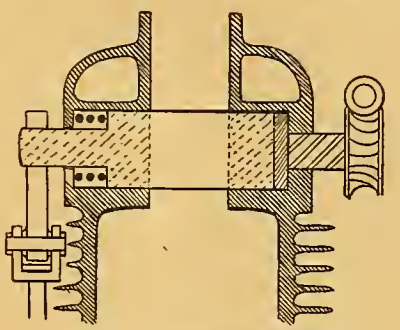


Fig. 3.—Variable cut-off or throttle

spring above it being purposely made a little stronger than would otherwise be necessary, vibrates very rapidly, and finds a position in which it practically floats, all the time feeding petrol to the vaporising coil. It will be seen that if the stop cock at the side of the pump be open no petrol is admitted into the jacket, as the circuit of the coil is closed and the pump remains at the top of its stroke. When, however, this cock is closed, the pump goes on working until the pressure in the coil more than counterbalances the strength of the spring upon the piston B. In intermediate positions of the tap a constant supply of greater or less volume is supplied.

In a newer type of engine which is about to be built, the arrangement shown in fig. 2 is being adopted. Instead of having the vaporising coil wound round the cylinder a steel petrol jacket head is being used which will contain an oscillating cylindrical type of inlet valve operated from a camshaft by rockers, and furnished with a means whereby the cut off of this valve can be varied in unison with the tap on the Worthington pump before mentioned, so that the amount of mixture admitted to the power cylinder can be changed in volume without being affected in quality.

The means for obtaining this variable cut off are shown in fig. 3. The valve, which is rocked to and fro, is traversed by an oblong slot and is closed by being rocked out of register with the inlet port above and below it. In order to throttle the air as it passes to the cylinder through this valve the whole valve can be moved sideways by means of a quick thread drum operated by a worm gear, the horizontal shaft of which actuates the valves of the two cylinders simultaneously.

Whilst it is impossible, with the limited particulars of practical working results which we have had placed before us, to prophesy what the engine will do, its public performances will be looked forward to with exceptional interest.



TIME TO LIGHT LAMPS.

Feb. 29th	... ...	6.36 p.m.
Mar. 2nd	... ...	6.39 ,,
,, 4th	... ...	6.43 ,,
,, 6th	... ...	6.46 ,,

Sentry Boxes for A.A. Scouts.

The A.A. and M.U. scouts at certain dangerous cross roads are now being provided with sentry boxes.

Belgian Motor Cycle Show.

The Belgian League Vélocipedique have decided to organise an exhibition of motor cycles and accessories in Brussels on December 21st to 29th.

Auto Cycle Union Notes.

ONE-DAY TRIAL JUDGES.—Captain H. E. Davidson, R.E., Captain D. F. Nicholl, R.A., and Mr. C. J. Feeney have been invited to act as judges in the one day trial next Saturday.

PERMITS.—Permits to hold open trials have been granted (subject to the rules being in order) to the following bodies:

Liverpool A.C.C., reliability trial, April 12th.

Oxford M.C.C., hill-climb, April 13th.

Bristol C. and M.C., hill-climb, April 27th.

Coventry and Warwickshire M.C., reliability trial, May 4th.

Birmingham M.C.C., cyclecar reliability trial, May 18th.

Liverpool A.C.C., hill-climb, June 1st.

Liverpool A.C.C., speed trials, July 20th.

Coventry and Warwickshire M.C., hill-climb, August 31st.

Liverpool A.C.C., reliability trial, September 7th.

A cyclecar class will be a feature of the Essex M.C. hill-climb on March 16th.

THE CYCLECAR, FORMERLY KNOWN AS THE QUADCAR, MONOCAR, DUOCAR, OR, IF IT HAD THREE WHEELS, THE TRICAR OR RUNABOUT.—The result of two conferences by the A.C.U. Competitions Committee and the R.A.C. Competitions Committee has been to define what is now to be known as the cyclecar, which was formerly called by all the above titles. The cyclecar, therefore, which is to be under the jurisdiction of the Auto Cycle Union, must be fitted with an engine the cubical capacity of the cylinders of which does not exceed 1,100 c.c., and the chassis weight of which with tyres does not exceed 6 cwts. Where the body and chassis are identical, as is the case with certain of these vehicles, the whole is counted as the chassis, but for purposes of weight the cushions, etc., would not, we take it, be counted. The hybrid, therefore, as a result of this meeting comes out with an official distinctive name and a definition—two things it never had before. It must be noted that no imposition of any kind has been placed on its development, and improvements may be made in the cooling, change-speed gear, transmission, mudguarding, or comfort to any extent, provided the weight or c.c. limits are not exceeded. In competitions for cyclecars, or in which there are classes for these vehicles, the weight complete, but with tanks empty, must not exceed 7 cwts.

Midland Boy Scout Movement.

One of the Coventry and Warwickshire Motor Club's events, to be held at the end of May, is a Boy Scout Manœuvre in which upwards of 250 scouts will be engaged. This event is to replace the Military Reconnaissance which was an interesting and instructive item of the past years' programmes.

Sidecars or Small Cars in the States.

Commenting on the quadcar movement in this country, a leading American motor cycle journal says: "For a couple of seasons, at least, low-built, three-wheeled creatures, not quite in the big motor car class have been trying to butt into the camp of the two-wheeler—to tempt motor cyclists, says one writer, with a cheap imitation of a car. . . In this country it looks like (1) motor cycle, (2) motor cycle with tandem seat, (3) motor cycle occasionally attached to sidecar, for some time to come; for anything bigger, the small regular car."

SPECIAL FEATURES.

Makers' T.T. Bond Sustained.
English-Dutch Trial.
Lubrication.
French Hill-climb (Illus.)

Motor Cyclists Obtain Damages.

At the Ludlow County Court last week, George Hone, of Shrewsbury, sued Cecil C. Brinton, of Kidderminster, for £75, for personal injury and for damages to a motor cycle caused by a collision between his motor cycle and defendant's motor car on Corve Bridge, Ludlow, on Sunday, June 25th, 1911. After a long hearing the jury found for the plaintiff for £35 14s. 6d., with costs.

Harry Juckes, of Blackburn, sued Constance de Jong, Hoylake, at the Shropshire Assizes, for personal damages and for damages to a motor cycle, caused by the negligence of the defendant or her servants in driving a motor car. Defendant denied negligence, but, on the contrary, said plaintiff was guilty of negligence or contributory negligence, and she counter-claimed for damages to her motor car. After a short consultation, the jury found a verdict in favour of the plaintiff, and judgment was accordingly given for £160 (the agreed amount) on the claim, and verdict and judgment also for Juckes on the counter-claim.



HILL-CLIMB AT MONTANGLAUST, FRANCE.
H. Newey (2½ h.p. two-stroke Lovis) gaining first place in Class 1.

Cyclecar.

The new name adopted by the Auto Cycle Union for light three or four-wheeled runabouts on motor cycle lines.

T.T. Entries.

Undermentioned are further entries received for the T.T. Races, making a total of thirty-eight to date:

SENIOR RACE.—P. Butler, H. R. Fowler (3½ h.p. Norton), V. Wilberforce, N. O. Soresby, and V. Taylor (3½ h.p. Rudge).

JUNIOR RACE.—J. P. Pattison, V. Wilberforce, S. A. M. Witham, and S. Taylor (2¾ h.p. Levis.)

American Records.

According to a cable from Los Angeles, some remarkably fast times were accomplished on the track on Saturday last (February 24th) by W. E. Hasha, of Dollox, Texas, who is the great rival of Jake de Rosier, of Indianapolis. Hasha rode an 8 valve twin-cylinder Indian, and is credited with the following new records: One mile in 39⅘s., two miles in 1m. 19⅘s., three miles in 2m. 1⅗s., and four miles in 2m. 40⅗s.

The M.C.P.A.

Elsewhere in these pages a report appears of the Motor Cyclists' Progressive Association's first meeting. It is a body which has a very laudable object, but from the names it has suggested to represent the private members of the A.C.U. we must say it falls rather short of the mark at which it is to be presumed it is aiming. These names are those of highly estimable men, but it is most unfortunate that seven out of the twelve are actively engaged in the trade, and three more are indirectly interested. We do not for a moment object to trade members serving on committees—in fact, they are welcomed, as one or two can guide the committee and give expert information—but here it is distinctly overdone, and we hope that when the final elections take place on March 7th a committee will be elected in which the private owner element is more strongly emphasised.

FUTURE EVENTS

Mar. 2.—A.C.U. Open One Day Trial.
„ 16.—Essex M.C. Open Hill-climb.
„ 23.—B.M.C.R.C. Race Meeting.
„ 23.—Herts. County A.C. Open Quarterly Trial.
„ 30.—Derby and District M. C. C. Open Hill-climb.
April 5-8.—N.W. London M.C.C. & Herts. County A.C. Joint Trial and Open Hill-climb (Yorks.) and Ladies' Competition.
„ 8.—Westmorland M. C. C. Open Hill-climb at Brigsteer Brow.
„ 13.—Oxford M. C. C. Open Hill-climb.

Dangerous Road Obstruction.

At 11 p.m. a few nights ago a Norfolk policeman found a horse on the road side which was tethered by a chain to a peg on the other side of the highway. Imagine the fate of any motor cyclist should he have ridden into this chain!

Anotner Road Danger.

A Bristol correspondent, Mr. T. E. Dougal, calls attention to a dangerous cable made of twisted undergrowth which was stretched across the road about on a level with his face whilst in the saddle. This obstruction was met at 6.15 p.m. about 100 yards from the foot of the hill leading to the village of Norton Marleward on the road *viâ* the lanes from Chew Magna (Somerset) to Bristol. The local police are investigating the matter.

A Limousine Body Suggested.

An inventor who has evidently read our articles on streamline bodies, and "Ixion's" suggestions for a similar body as a weather protection, has gone one further. In a letter to Rudge-Whitworth, Ltd., he suggests *with all seriousness* a sort of limousine body for motor cycles made of metal, with side, front, and rear glazed windows. In a sketch the superstructure is shown supported from a framework of rods, and at the base on each side are two small supporting wheels raised about an inch from the ground. In front is a dog catcher. The firm have no intention of adopting the idea.

Birmingham Novices' Trial.

A novices' trial, held by the South Birmingham M.C.C. on the 25th inst., resulted in a win for W. E. Baylis (3½ h.p. Allday), three tying for second place, viz., S. H. Fletcher (3½ h.p Premier), G. F. Norton (3½ h.p. Humber), and E. H. Allday (3½ h.p. Allday). Only seven competitors out of twenty succeeded in climbing Sunrising Hill.

Dissatisfied with English Machines.

We notice a testimonial published in an American contemporary, and addressed to the makers of the four-cylinder Pierce motor cycle, which reads: "I am now sure I shall stick by your machine instead of investing in a car, as I had intended doing, *failing to find a satisfactory motor cycle in England*, although I tried practically every make.—DONALD B. LARKE, Stoke Holy Cross, Norfolk, England." The italics are ours. Mr. Larke appears to be a difficult man to please.

Lady Rider's Fatal Accident.

We very much regret to report the fatal termination to an accident which occurred on the 11th inst. to Mrs. O'Donovan, the wife of Mr. D. R. O'Donovan, of Bedford. Mrs. O'Donovan was riding her motor bicycle at Cardington Cross, on the outskirts of Bedford, when the machine side-slipped and she fell. Her injuries, which were not thought to be serious at the time, resulted in the unfortunate lady's death on the 21st inst. This is the first fatal accident which has occurred to a lady motor cyclist.

Clean Counties.

At a recent meeting of the Flintshire Police Committee the Chief Constable reported that he had received and tested a number of samples of stop watches which it was suggested should be supplied to the police for timing motorists. In twenty-four hours the watches had all varied though started together.

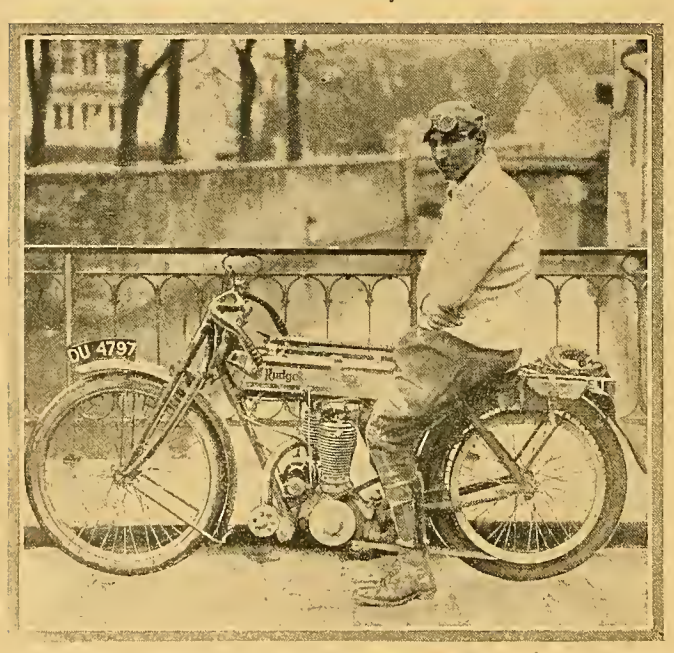


FRENCH OPEN HILL-CLIMB.

A N.S.U. rider clear of the ground. A goodly crowd collected to see the "jumping" here. Vernon Taylor (T.T. Rudge), winner of two classes. He is clear of the ground at the ridge near the hill summit.

FRENCH OPEN HILL-CLIMB.

LAST Saturday morning an English party of motor cyclists left Charing Cross Station at ten o'clock, their destination being Coulommiers, near Paris. The riders were W. W. Douglas, O. C. Godfrey, E. H. Lees, Vernon Taylor, H. Newey, Harry Reed, Jack Woodhouse, W. F. Newsome, W. G. McMinnies, and R. G. Mundy. A. P. Maurice



Vernon Taylor and his winning Rudge.

(3½ h.p. Premier) failed to put in an appearance; we, however, found him at Coulommiers on arrival there. The journey over was uneventful, excepting a little incident at Longueau in the afternoon, where an axle of the train caught fire, the railway officials being obliged to change a lot of luggage into another truck. At Paris we were met by the officials of the Auto Cycle Club de France and conducted to the other station *en route* for Coulommiers, a little village some thirty-six miles from Paris where the hill-climb was to be held on the morrow. Hal Hill and A. J. Moorhouse, both of whom were included in the party, stayed the night in Paris and came over to see the hill-climb in the morning. After dinner the Englishmen were entertained by the President of the French Club, champagne being very much in evidence. As practising on the hill would be stopped at 9 a.m., most of the competitors retired to bed early so as to be up in good time for some practice spins.

Bad State of the Surface.

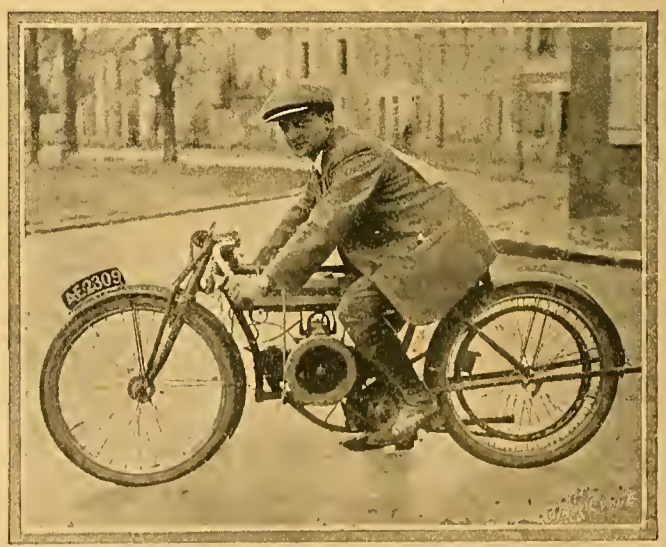
The surface of the hill was in a shocking condition, being extremely bumpy and very greasy, especially after gaining the summit of the hill where a straight down hill course was taken. The latter part, where terrific speeds would have been accomplished, was in a very greasy condition, and later it was decided to cut this part out and finish about 130 yards from the summit of the hill. Some of the riders had fitted plain racing covers to their machines. How they wished for non-skids! The competitors were given about 130 yards flying start before being timed. At the top of the hill was a hump, and here, it was estimated, the men jumped ten to twenty feet. Many of the machines had some extraordinary fitments. Canale's little Alcyon was fitted with four overhead valves, one at each "corner" of the cylinder, and sparking plug right in the centre. There were five classes for all types of motor cycles.

The first man despatched was Canale (Alcyon), who got up a good speed but came off at the hump. He later descended to the foot of the hill with his hands bandaged up. However, he rode in the next class, but naturally was much slower.

The N.S.U. riders had an extraordinary way of continually starting up their engines on the stand and running them "all out" for a minute or more on end just before their turn came. Brunet, on a 1¾ h.p. Griffon, had an extremely small pulley with the belt very low in the groove. Nevertheless he found it necessary to pedal up the 1 in 10 gradient. Newey on his two stroke Levis was the first Englishman up, making an excellent ascent and winning his class. Next came W. W. Douglas, who put up a splendid show on his 2¾ h.p. twin, beating Rex G. Mundy, who was placed second on his 2½ h.p. Singer. Although two New Hudsons were entered, only one went up, and it was not fast.

Godfrey's "Star" Turn.

After the two N.S.U.'s, ridden by Gomertz and Robert, came O. C. Godfrey on his 3½ h.p. Indian, who travelled like a rocket. His performance was undoubtedly the star turn of the day. Hitting the hump at quite 40 m.p.h., he shot into the air, and it was estimated that he did not touch the road for twenty feet. When he did so he missed his left foot-rest, his foot touching the ground, causing the spectators to think that he had put his foot out to correct a skid as his machine slid across the road at this minute. He, however, recovered himself in a marvellous way, and succeeded in making fastest time of the day. He was disqualified later on account of his auxiliary ex-



W. W. Douglas (2¾ h.p. Douglas), winner of his class in remarkably fast time.

French Open Hill-climb.—

haust ports. Maurice (Premier) and Harry Reed (Dot) put up fair performances, but Gabriel (clutch Triumph) was poor. Vernon Taylor made an excellent ascent and jumped a long way at the ridge, landing very neatly. E. H. Lees made a fair performance. McMinnies was slow. J. Woodhouse stopped on account of water on his high tension wire. A similar trouble befel Newsome, who found water on his plug terminal. The officials at first agreed to their having another start, but later refused to allow this—very hard luck it was thought after travelling all that distance!

Amateur Events Decided on Formula.

All the preceding classes were decided on time alone, the next class for amateurs being decided on formula. Vernon Taylor again made a fine ascent on his T.T. Rudge, gaining first place. In this class McMinnies failed on account of mud getting into the carburetter



A Bedelia competing in the hill-climb at Montanglaust.

needle guide, thus causing the needle to stick. This trouble accounted for his poor ascent in the previous class. He, like many others, rode minus a back mudguard. There was some discussion as to whether it would be compulsory to have rear guards the evening before. It was decided, however, to allow them to be removed. Godfrey was the only Englishman to ride without a front guard, and he arrived at the top of the hill with his face and clothes plastered with mud.

The road was kept clear by the police, a fair crowd being present. Had the weather been better, we were assured that a great number of motor cyclists would have journeyed over from Paris to witness the event. After all the classes had been run off the machines had to be taken to the official garage, where seals, which had been affixed to cylinders earlier in the day, were examined and the cylinders of the first three in each class were measured.

It will be seen from the results below that the Englishmen won all the classes, a striking demonstration of British superiority.

The Results.

CLASS I.—Engines not exceeding 255 c.c., minimum weight 110 lbs., tyre section 40 mm.

1. H. Newey (2¼ Levis) ... ... 1m. 5⅖s.
2. Brunet (1¾ Griffon) ... ... 2m. 21s.

Canale (Alcyon) fell.

CLASS II.—300 c.c. singles, 350 c.c. twins, minimum weight 110 lbs., tyre section 50 mm.

1. W. W. Douglas (2¾ Douglas) ... ... 0m. 56⅕s.
2. Rex G. Mundy (2½ Singer) ... ... 1m. 4⅖s.
3. Robert (N.S.U.) ... ... 1m. 12⅘s.
4. ——— (2¾ New Hudson) ... ... 1m. 19⅕s.
5. Dacier (2 Alcyon) ... ... 1m. 19⅗s.
6. Canale (2 Alcyon) ... ... 1m. 20⅘s.
7. Stoffel (2 Alcyon) ... ... 1m. 33s.
   Gomertz (N.S.U.) ... ... 1m. 33s.

CLASS III.—500 c.c. singles, 650 c.c. twins, minimum weight 132 lbs., tyre section 60 mm.

1. V. Taylor (3½ Rudge) 0m. 47⅕s
2. H. Reed (5 Dot) ... ... 0m. 52⅘s.
   A. P. Maurice (3½ Premier) ... ... 0m. 52⅘s.
3. E. H. Lees (5 Indian) ... ... 0m. 54⅖s.
4. W. G. McMinnies (3½ Triumph) ... 0m. 59s.
5. Gabriel (3½ Triumph) 0m. 59⅘s
6. Naas (Griffon) ... ... 1m. 10s.
7. Yves Fort (N.S.U.) 1m. 14⅕s
8. Olivier Fort (N.S.U.) ... ... 1m. 41⅗s.

O. C. Godfrey (3½ Indian), 44⅘s., disqualified.

AMATEUR CLASS.—On formula $\frac{2PV + V^3}{C}$.

1. V. Taylor (3½ Rudge) ... ... 0m. 46⅕s.
2. A. P. Maurice (3½ Premier) ... ... 0m. 53⅕s.
3. L. de Trévals (——) ... ...
4. E. H. Lees (5 Indian) ... ... 0m. 51⅗s.
5. Maurice Purson (———) ... ... 1m. 17⅕s.

VOITURETTES.—750 c.c. singles, 1,000 c.c. twins, 1,250 c.c four-cylinders.

CLASS I.

1. Ducasse (Sinpar) ... ... 3m. 3⅘s.
2. Pellier (Cohendet) ... ... 3m. 7⅘s.
3. Guerry (Bourguignon) ... ... 3m. 14⅕s.

CLASS II.—Belt-driven.

1. Bouville (Bedelia) ... ... 2m. 50⅗s.

The voiturettes covered 2 kilometres.

Items of Interest.

Altogether the party consisted of twenty, including competitors and their friends. Four went over to see the Levis win its class.

F. A. Applebee took a Scott and sidecar solely to demonstrate to those on the other side of the Channel. This necessitated a lot of work for himself and W. H. Wells, as they were obliged to detach the sidecar when putting the combination in the trains or on the boat.

The petrol level in Dacier's Claudel-Hobson carburetter was so high that he was obliged to turn his petrol off when standing still. It was suggested that he used no float.

It appears to be unnecessary to have identification number plates on these occasions, as many of the machines were minus these essential English fitments.

We saw an interesting machine in Coulommiers during the afternoon. It was a three-speed 3½ h.p. water-cooled overhead-valved sidecar combination with chain drive. It is known as the Viratelle. The one under notice, we understand, is the first of its kind.

Some of the English party stayed in Paris overnight, arriving in London at midday on Monday.

A.C.U. One-day Spring Trial Entries.

FOLLOWING are the entries for the A.C.U. Spring One-day Trial to be held on Saturday next, starting from the Swan and Sugarloaf Hotel, Croydon, at 8.30 a.m. The course is a secret one, but will extend over 160 miles. The luncheon interval is at Tunbridge Wells:

	c.c.	Gear.
*W. Cooper (3½ Bradbury) ...	517	N.S.U.
B. Haddock (2½ A.J.S.) ...	315	A.J.S.
R. G. Mundy (3½ Singer) ...	499	Armstrong
S. A. Rowlandson (3½ Rudge) ...	499	Rudge variable
W. E. Cook (3½ A.S.L.) ...	499	N.S.U.
F. G. Edmond (3½ Humber) ...	499	Humber
*C. Pressland (3½ Rudge) ...	499	Rudge variable
*M. G. Dew (3½ Zenith) ...	499	Zenith Gradua
*T. R. Trotter (3½ B.S.A.) ...	499	B.S.A. 2-sp.
T. Pollock (3½ James) ...	557	Heron 2-sp.
W. O. Oldman (5-6 Bat) ...	761	P. and M.
R. Hare (2¾ Enfield) ...	343	Enfield
*F. Dover (3½ Premier) ...	499	Armstrong
V. Taylor (3½ Rudge) ...	499	Rudge variable
W. Pratt (3½ P. and M.) ...	475	P. and M.
*V. Tomkins (3½ Rover) ...	499	Armstrong
G. L. Fletcher (2¾ Douglas) ...	340	Douglas
P. Phillips (2¾ Douglas) ...	340	Douglas
F. Ball (2¾ Douglas) ...	340	Douglas
F. C. North (3½ Ariel) ...	498	Armstrong
L. Newey (3½ Ariel) ...	498	Armstrong
R. Lord (6 Rex) ...	896	Roc 2-sp.
F. W. Applebee (2¾ Centaur) ...	340	Armstrong
*J. Kerr (3½ N.S.U.) ...	499	N.S.U.
R. M. Brice (3½ Brown) ...	499	Bowden
*C. Tinline (3½ Rudge) ...	499	N.S.U.
W. F. Newsome (3½ Triumph) ...	499	Free engine
E. W. Cheshire (3½ Triumph) ...	499	Free engine
G. T. Gray (3½ Rudge) ...	499	Rudge variable
C. Q. Roberts (3½ Rover) ...	499	Armstrong
A. J. Sproston (3½ Rudge) ...	499	Rudge variable
*F. E. Pither (2¾ Enfield) ...	343	Enfield
*Rothwell (3½ Rudge) ...	499	Rudge
*H. G. Ayers (3½ A.S.L.) ...	499	N.S.U.
*J. W. Ayers (2½ A.J.S.) ...	298	A.J.S.
Mrs. M. Hardee (3½ P. and M.) ...	470	P. and M.
V. Busby (2¾ Humber) ...	340	Armstrong
H. Berwick (3½ New Hudson) ...	499	Armstrong
H. G. Dixon (3½ New Hudson) ...	499	Armstrong
W. L. Overend (3½ P.V.) ...	584	N.S.U.
*N. O. Soresby (3½ Rudge) ...	499	Rudge variable
J. Cocker (2½ Singer) ...	299	Armstrong
N. A. Ayers (3½ Singer) ...	499	Armstrong
*H. Hill (Premier) ...	—	
*Rev. E. P. Greenhill (2¾ Douglas)	340	Douglas
L. E. Cass (4½ Quadrant) ...	564	Armstrong
J. Oliphant (3½ Premier) ...	499	Armstrong
*A. H. Wright (5 A.J.S.) ...	630	A.J.S.
A. V. Deacock (3½ Alldays) ...	499	Roc
*H. Johnson (3½ Triumph) ...	499	
*H. A. Shaw (3½ Scott) ...	—	Scott 2-sp.
P. J. Evans (3½ Humber) ...	499	Humber 2-sp.
PASSENGER CLASS.		
A. J. Luce (6 Zenith sc.) ...	776	Zenith Gradua
W. S. Stagg (5-6 A.C.) ...	649	A.C.
H. Munday (5-6 A.C.) ...	649	A.C.
F. Hill (5-6 A.C.) ...	649	A.C.
O. C. Godfrey (7 Indian sc.) ...	994	Indian
B. A. Hill (7 Indian sc.) ...	994	Indian
E. Frasetti (7 Indian sc.) ...	994	Indian
F. Smith (5-6 Clyno sc.) ...	774	Clyno
S. T. Tessier (8 Bat) ...	964	Bat 2-sp.
A. J. Stevens (5 A.J.S. sc.) ...	630	A.J.S.
*E. Vallis (5-6 Clyno sc.) ...	774	Clyno
E. B. Ware (8 Chater-Lea sc.) ...	964	Chater-Lea
H. F. S. Morgan (8 Morgan) ...	964	Morgan
G. N. Higgs (5-6 A.C.) ...	649	A.C.
R. E. Guest (6 Matchless sc.) ...	—	

The asterisk denotes a private owner.

More observers are wanted. Offers should be addressed to the A.C.U. secretary, R.A.C., Pall Mall, S.W.

Sutton Coldfield and Mid-Warwickshire A.C.

The A.G.M. took place on Friday, the 23rd inst., when the balance sheet for the past year was presented.

A very satisfactory state of affairs was shown, and there remained a good balance in hand at the bankers. Amongst the club's property there should be mentioned a complete set of first-class field telephones and timing apparatus bought during the past season, and no less than five silver challenge cups of an estimated value of £65.

It was decided, owing to the large increase of membership and consequent general work of the club, to engage the services of a professional secretary who would relieve both the trials and general hon. secs. of a large portion of their work. Another important matter decided upon was the alteration of the club to the Sutton Coldfield and Mid-Warwickshire Automobile Club. This was found necessary owing to the widening of the club's sphere of influence. In respect to the car members it was decided to become associated direct with the R.A.C., and only affiliate the motor cycle members to the A.C.U. Separate committees were arranged for each section.

The annual dinner and prize distribution of the club took place on Saturday, February 24th, when a goodly company of between sixty and seventy assembled. Prizes to the value of between £130 and £140 were distributed.

Mr. Thos. Clayton was chairman, whilst Mrs. Blyth Clayton attended and graciously presented the prizes to the various winners

A large number of lantern slides of motor and motor cycle events (some loaned by *The Motor Cycle*) were exhibited by Mr. T. Blyth Clayton and much enjoyed.

A SILENCER TEST AT LAST.

The Motor Cycling Club has decided to hold a motor cycle silencer trial on Saturday, April 27th, at a venue as near London as possible. No restrictions are being made with regard to standard silencers being fitted, and any means may be adopted to silence the machines. The motor cycles will be tested in such a way that it will be useless for a competitor to fit any device to his machine which affects the efficiency of the engine. Cut-outs in any form will not be permitted, and a jury of independent judges will be invited to arbitrate. This will be the first silencer trial which has been held by any private club, and every effort is being made to ensure a satisfactory test. The name and address of the hon. secretary of the Motor Cycling Club are Mr. Southcomb May, 34, Gower Place, London, W.C., to whom communications regarding the test should be addressed.

The first silencer trial in England was organised by the Auto Cycle Union in 1906, and that body has already announced its intention to hold a further trial this year.

CAMBRIDGE UNIVERSITY M.C.C. HILL-CLIMB.

A very successful hill-climb was held on Saturday, February 17th, at Orwell Hill, near Cambridge. The results were as follows:

Class 1 (standard touring singles, on formula): 1, T. P. Ellis (2½ New Hudson), figure of merit 45.13.

Class 2 (multi-cylinders up to 750 c.c., on formula): 1, E. H. Lees (5 Indian), figure of merit 61.14.

Class 3 (T.T. singles, on time): 1, J. W. Cox (3½ Triumph), time 31⅖s.

Class 4 (all comers, on time): 1, E. H. Lees (5 Indian), J. W. Cox (3½ Triumph), and R. C. Maxwell (8 Matchless). All tied for first place in this class, time 32⅕s.

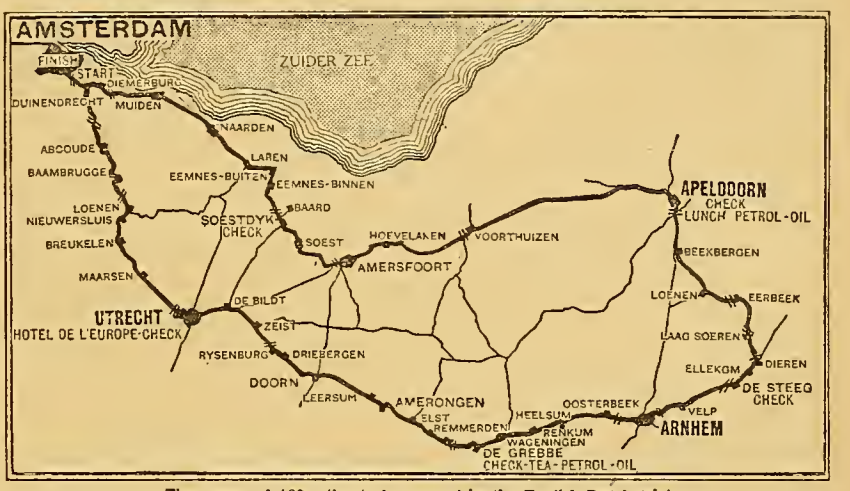
Class 5 (T.T. roadster singles, on formula): 1, O. E. Stout (3½ Rudge), figure of merit 43.33.

Fastest time of the day: J. W. Cox (3½ Triumph), 31⅖s.

ENGLISH-DUTCH TRIAL.

Map of the Course for the International Reliability Trial in August.

ON this page we reproduce two maps, one showing the whole of the route to be covered in the above International trial to be held on Bank Holiday Monday, August 5th, the smaller one being a map of Holland with the route shown on it to make clear the district covered. The distance of the trial is approximately 160 miles, and the only hill of note on the route is de Grebbe, which, however, should worry none of the English competitors. Mr. Citroen tells us that his 6 h.p. Matchless-Jap ascends the hill at a speed of fifty miles per hour, *i.e.*, with a flying start, but on the occasion of the trial the competitors will be stopped at the foot of the hill and despatched singly from a standing start. The trial will start at 8 a.m. from Amsterdam, whence competitors will journey to Naarden and Soestdyk (check), continuing *via* Hovelaken and Voorthuizen to Appeldoorn, where the second check is encountered and lunch will be taken. Replenishments will be allowed here. The first check in the afternoon is De Steeg, after which competitors proceed *via* Arnhem to the foot of de Grebbe. Here tea will be arranged, and it will be permissible for competitors again to replenish tanks. The only ascent on the route worthy of mention follows. Doorn is the next place of note, and at Utrecht competitors will be checked for the last time before finishing at Amsterdam, which is reached by way of Breukelen and Baambrugge. The speed to be averaged throughout is nineteen miles per hour, and competitors will be started in pairs, viz., one Dutch and one English rider. The system of marking will be on accepted British lines, an involuntary stop will not disqualify, but will involve loss of marks.



The course of 160 miles to be covered in the English-Dutch trial.

Teams Increased in Numbers.

At the council meeting of the Dutch Motor Cycle Club last week, in consideration of the already large entry, our suggestion to increase the teams to eighteen aside, *i.e.*, nine private owners and nine trade riders representing each country, was adopted, which means that fewer entrants who are anxious to compete will be refused. There will now be three riders in each class. The trip will extend over four days, and for the benefit of new readers we outline the daily itinerary.



Map of Holland, showing position of the International course.

Sunday, August 4th. The English party starting from Harwich on Saturday, August 3rd, at 10 p.m., arrive at the Hook of Holland at six o'clock on Sunday morning. A deputation from the Dutch Motor Cycle Club will be in waiting to conduct the English party to the Hague for breakfast. 10-11 a.m., a visit to Scheveningen, the celebrated bathing place. Lunch will be taken here. The remainder of the day will be spent sight-seeing at the Hague and Haarlem. At 3.30 a move will be made for Amsterdam, where the night will be spent, the Dutch M.C.C. having kindly offered to make all arrangements. The Dutch and English competitors will dine together at the official hotel.

Monday, August 5th, is the day of the trial.

Tuesday, August 6th, boat trip to the well-known fishing town of Volendam, and other places of interest. The return boat leaves the Hook the same night at ten o'clock, but it will be necessary for competitors to be at the Hook by 7.30 to 8 p.m., as it takes some time to embark the motor cycles.

Small Entrance Fee for Amateurs.

With regard to entry fees, it was agreed at a recent council meeting of the Dutch Motor Cycle Club, which is organising the trial, to charge an entry fee of 5s. to the British amateur entrants—this with the idea of eliminating those competitors who may be inclined to send in their names, but who are not seriously intent upon going to the country of windmills and upholding the reputation of their country. We shall therefore be glad if those amateur entrants whose names appear in this article who are still desirous of forming one of the British team will send the amount to the Editor, *The Motor Cycle*, without delay.

A National Trophy.

It is probable that a cup will be offered to the country winning the reliability trial, to be held for one year, the successful team having to defend the cup on its own ground.

In this connection it must not be taken as a foregone conclusion that England will win, for the Dutch motor cyclists are most enthusiastic and will leave nothing to chance.

Within the next week or two some definite scheme for choosing representative British teams will be com-

English-Dutch Trial.—

menced. A number of suggestions have reached us from readers which are having our consideration, but pending the scheme suggested by the Secretary of the Auto Cycle Union being put on paper, the matter of choosing the teams is in abeyance. It will be noticed that in Class A only two different makes have been entered by private owners. If the cubic capacity were increased to 350 c.c.—as we have suggested to the Dutch M.C.C.—it would admit the standard pattern of other well-known lightweights, and the Dutch M.C.C. are desirous that the entries should include as many makes as possible. So far the following riders have entered:

PRIVATE OWNERS.

Class A. Machines up to 340 c.c.	Class B. Machines from 340 c.c. to 500 c.c.	Class C. Machines from 500 to 1,000 c.c.
J. C. Bennett Mitchell (2¾ Douglas)	Geoffrey Smith	W. Cooper (3½ Bradbury)
H. M. Carter (2¾ Douglas)	Vernon Taylor (3½ Rudge)	L. A. Baddeley (7 Indian)
F. C. Wasley (2¾ Douglas)	Seymour Smith (3½ Norton)	W. O. Oldman (Bat)
D. J. Danth (2½ Grandex-Precision)	Fred Dover (3½ Premier)	C. W. Wilson (Morgan runabout)
	A. E. Uffleman (3½ Humber)	Gordon B. McKechnie (8 Dot-Jap)
	C. C. Cooke (3½ Triumph)	André Manheim (T.A.C. sidecar)
	Horatio Wallis (1912 Triumph)	E. B. Ware (Chater-Lea sc.)
	Richard Cussons (3½ New Hudson)	

F. A. Hardy, machine not stated.

TRADE TEAM.

Class A. Machines up to 340 c.c.	Class B. Machines from 340 c.c. to 500 c.c.	Class C. Machines from 500 to 1,000 c.c.
W. W. Douglas (2¾ Douglas)	W. Pratt (3½ P. and M.)	F. W. Barnes (6 Zenith)
R. Holloway (2½ Premier)	J. Woodhouse (3½ Precision)	Hugh Gibson (3½ Bradbury)
Sam Wright (2¾ Humber)	W. F. Newsome (3½ Triumph)	W. H. Wells (7 Indian)
H. V. Colver (2¾ Enfield)	Roy W. Walker (3½ New Hudson)	Frank Smith (5-6 Clyno)
R. G. Mundy (2½ Singer)	F. C. North (3½ Ariel)	R. Lord (6 Rex sidette)
H. Graham Dixon (2¾ New Hudson)	Geo. Brough (3½ Brough)	F. A. Applebee (3½ Scott)
J. S. Holroyd (Motosacoche)		

LADIES' SECTION.

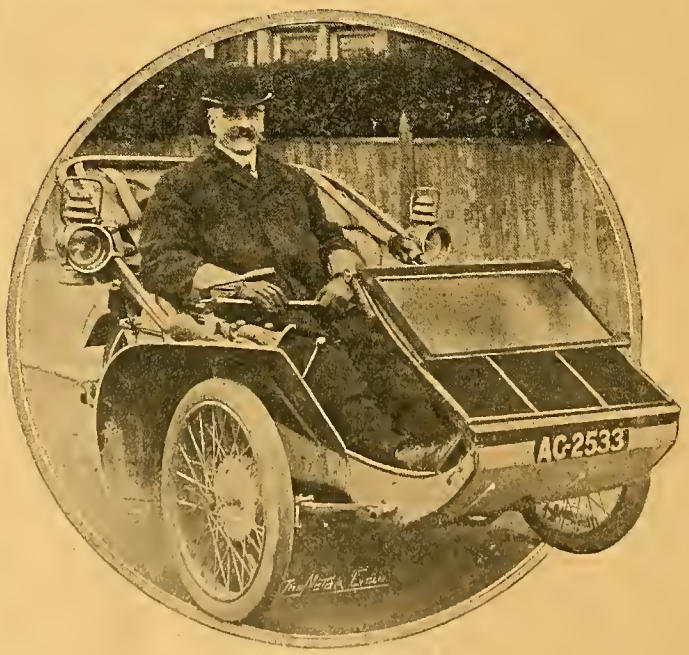
Mrs. A. Wade (3¾ Scott) | Mrs. C. C. Cooke (3½ Triumph)

A Sociable of Special Construction.

WHILST riding his Douglas, Mr. J. Parker, instructor of physical culture, etc., at the Abbey School, Beckenham, and other well-known schools, had the misfortune to be run down by a large car driven by a chauffeur at a local road junction. After smashing the machine and rider, the car continued on for another forty yards before coming to a stop against a wall.

In an action-at-law the motor cyclist obtained £240 from the car owner, but unfortunately his injuries left him with a permanently stiff knee, the bone refusing to unite.

Recently a public testimonial was opened on his behalf, the subscribers including not only many friends and present pupils at the Abbey School, etc., but many former pupils residing in various parts of the country.



J. Parker and his A.C. sociable.

With part of the proceeds—on Mr. Parker's suggestion—an A.C. Sociable has been purchased, and the machine he has already found of great assistance for travelling in connection with his profession.

Owing to his injury a straight leg position was necessary, and as the A.C. is low he can mount or dismount easier than would be the case with a four-wheeled car, and, after his experience with motor bicycles, he found the management and control an easy matter after one short ride.

Extra Fitments.

The machine is smartly painted in grey, and has one or two fitments of interest; for instance, an extra hand-applied brake at the right side, though this is seldom required. Duplicate ignition is also provided, and adjacent to the starting handle is a sliding lever operating the carburetter; this is very handy for starting up the machine. A screen is also fitted, the whole making a very business-like machine.

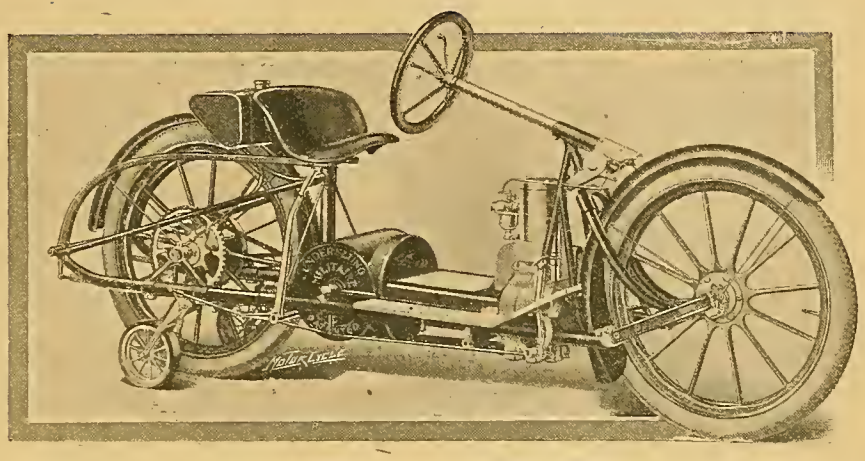
One can understand that Mr. Parker finds the A.C. invaluable. Its upkeep is comparatively inexpensive, and it is handier and certainly faster than the small single-cylinder car.

"Of course," he states, "it is not such a sporting machine as a motor bicycle." His Douglas—which he still retains—was the identical machine that made a non-stop in a winter A.C.U. Quarterly Trial, when ridden by his friend, Mr. H. A. Cooper.

A NOVEL DESIGN OF MOTOR CYCLE.

THE latest American production is the underslung Militaire, a motor cycle with an open frame incorporating some radical departures. The makers assure us that it is the outcome of two years' experimental work, and they are firmly convinced that "it is five years ahead of the motor cycle world, from every point of view." It has artillery wheels and "idler" wheels attached to each side of the frame, controlled by the side lever seen in the illustration. The centre of gravity is unusually low.

The engine is a vertical single-cylinder, air-cooled, enclosed by a polished casing, open at the top. The air is drawn down by a highly developed sirocco blower in the flywheel, and discharged downward and away from the rider. This cooling system is said to be equally efficient with the machine travelling or standing.



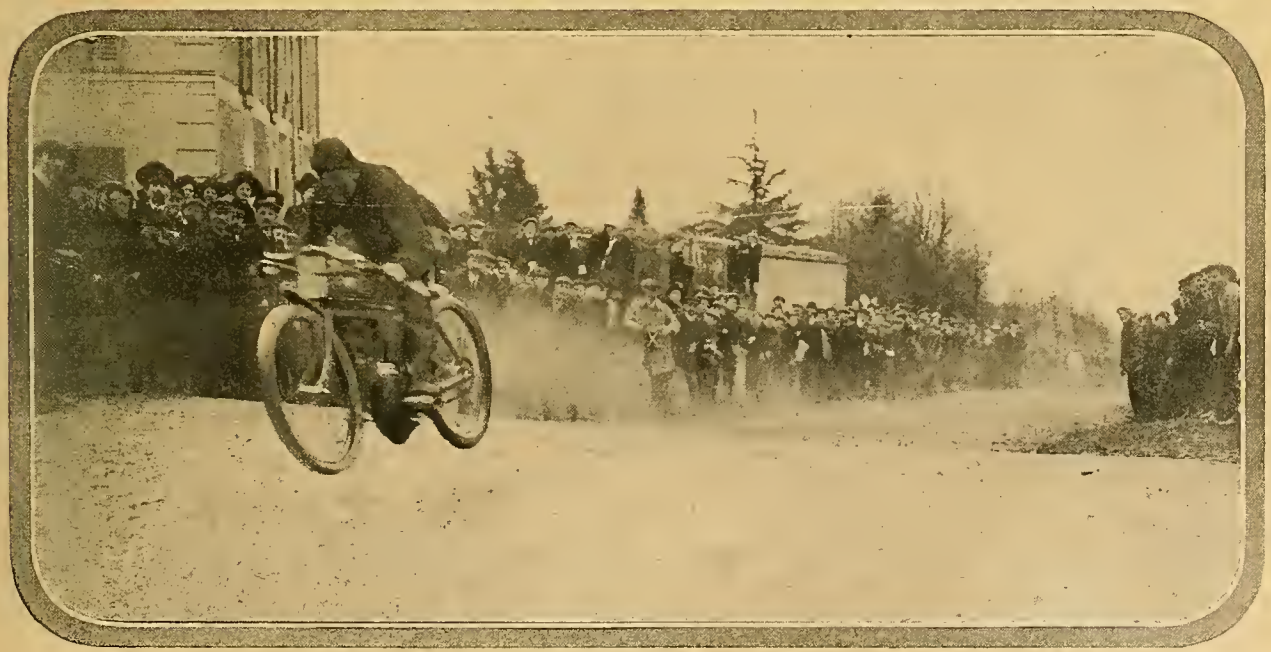
An American novelty. The Underslung Militaire.

A unique feature of the design is the friction drive, which gives any variation of speed desired, from 30 to 1 on low to 3 to 1 on high, with 10 to 1 on reverse. The steering wheel is identical with standard car practice, the control levers working from the centre of the column.

THE MOTOR CYCLISTS' PROGRESSIVE ASSOCIATION.

A meeting was held at the Holborn Restaurant, at 7.30 p.m., on Thursday, the 22nd inst. The chairman, Mr. Otto Thomas, stated that he would allow no personalities during the course of the discussion, and stated emphatically that if the M.C.P.A did nothing else it would take steps to suppress bad manners at public gatherings. The Chairman then announced that the membership numbered forty-five. The main business of the meeting was to select suitable men for election on the new committee. A ballot to elect representatives for the committee at the private members' meeting on March 7th resulted in the election of: Messrs. A. Sharp, Otto Thomas, W. Cooper, H. F. S. Morgan, T. H. Tessier, W. Pratt, T. Carter, W. H. Wells, A. H. Priestley, T. Rhys Pyle, G. N. Higgs, and G. L. Fletcher. Eighteen members were then suggested to represent the affiliated clubs on the A.C.U. committee. These are: Messrs. A. J. Moorhouse, T. Oliver, W. H. Browne, F. A. Hardy, W. G. McMinnies, B. Marians, C. J. Feeney, T. W. Loughborough, Hal Hill, E. J. Bass, D. Slatter, G. Rowden, R. Mundy, R. Fletcher, E. B. Ware, J. Foote, P. Mills, and E. Garrett.

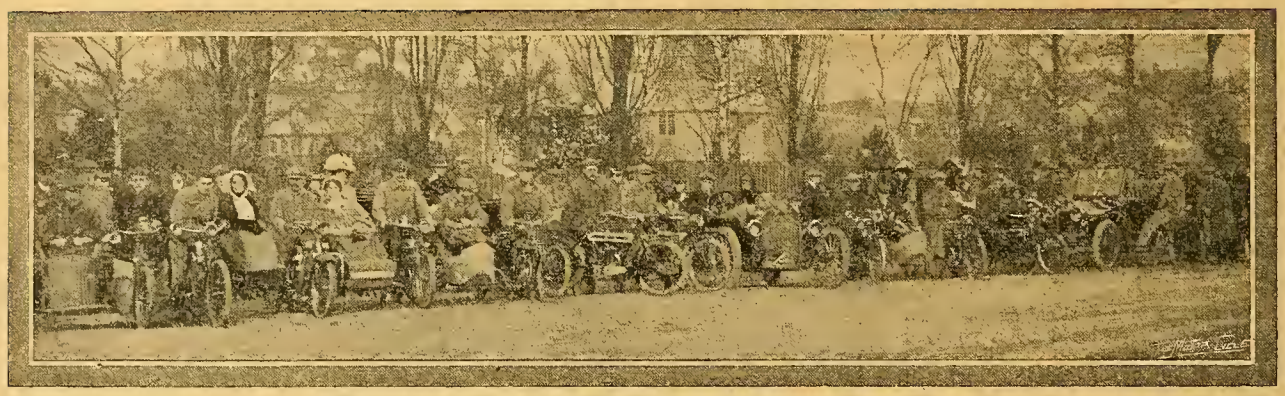
It was decided to send round the list of suggested club representatives to all the affiliated clubs asking them to add further names. When this has been done the M.C.P.A. committee will select from the extended list a final one which will be submitted at the annual general meeting of the council on March 30th. Mr. A. G. Reynolds suggested that the secretary of the R.A.C. be asked to receive a deputation who would explain the programme of the Motor Cyclists' Progressive Association.



LA COURSE DE CÔTE DE MONTANGLAUST.

A decided hump was encountered during the ascent, which lifted machine and rider clear of the ground. O. C. Godfrey (Indian) is seen with both wheels of his machine several inches off the ground. He made fastest time in his class, but was disqualified for using auxiliary exhaust ports.

CLUB NEWS.



Group at the start of the Leicester M.C.C. opening run to Lutterworth last week-end.

Glasgow M.C.C.

The annual general meeting will be held this evening at eight o'clock, at the Religious Institute Rooms, 200-204, Buchanan Street, Glasgow.

Reading and District M.C.C.

At a meeting held at Reading recently, the reconstruction of the above club was decided upon. New officers were elected, new rules drawn up, and a programme formulated. The new hon. secretary is Mr. S. A. Serpell, "Bromsberrow," 69, Alexandra Road, Reading.

Maidenhead and District M.C.C.

A breakdown competition was held at the Saracen's Head (headquarters) on the 20th inst., but no one proved successful. Many new members were enrolled. Local motor cyclists should apply to Mr. H. H. Hacker, hon. secretary, 25, High Street, Maidenhead.

Essex M.C.

Included in this club's open hill-climb on March 16th is the first competition ever held for the new type of vehicles officially designated "cyclecars." The A.C.U. has granted a permit for this class, and the club has fixed the limit at 1,100 c.c., with a maximum weight of 7 cwts., to include proper touring bodies and complete outfit as sold to the public.

Western District M.C. (London).

The recent lantern lecture on Switzerland by the hon. secretary was much appreciated. There is a committee meeting at headquarters, at 8 p.m., March 1st. The provisional fixtures for March are: March 3rd, opening run to Wisley Hut, Surrey. March 9th, Rickmansworth. March 10th, Redbourne. March 17th, Stokenchurch. March 23rd, Staines. March 24th, Reigate. March 31st, reliability trial for N.S.U. gold medal.

Taunton and District M.C.C.

The club will hold its open hill-climb on Thursday, May 16th. The hill selected is Cothelstone Hill, about seven miles from Taunton, and one of the suggested test hills for the six days' trials in August. It is about one mile in length, with two bad corners, and has a gradient of about 1 in 6 at its steepest part. All events will be won on fastest time. There are five open classes and two club classes. Full particulars, rules, and entry forms are ready, and can be obtained of the hon. secretary, Mr. W. G. Potter, 41, Belvedere Road, Taunton.

North Birmingham A.C.

At a meeting of Erdington and district motorists, held at the Acorn Hotel, Erdington, on Tuesday, the 20th inst., presided over by Mr. W. B. Goodwin, the proposal to form a club under the title of the North Birmingham Automobile Club was met with great enthusiasm, and over thirty members were enrolled, and almost as many promises from others who were unable to attend the meeting. Mr. W. C. Sutherland, of "Daylesford," Moor End Lane, Erdington, was elected hon. sec., Mr. R. Ernest Yates hon. treasurer, and Mr. W. B. Goodwin trials hon. sec. It was decided to affiliate with the R.A.C., also the A.C.U.

Redditch and District M.C.C.

The second annual general meeting of the club will be held at headquarters, the Unicorn Hotel, Redditch, on Wednesday, March 6th, at 8.30 p.m.

South-east London M.C.C. and Woolwich, Plumstead, and District M.C.

The inter-club competition between these clubs will take place on March 16th, starting from the Fox, Keston. The course decided upon is a severe one in Kent, including two stiff hills which will be observed. Gold medals will be presented to the winning team.

Brookdale Club, Catford (Motor Section).

At a meeting held at headquarters on Friday last, Mr. W. J. Cakebread in the chair, the following officers were elected: Messrs. H. A. Cooper (captain), G. H. Shrimpton (vice-captain), and B. T. Soppit (hon. sec.), to whom all communications should be addressed. The opening run was fixed for March 31st, leaving headquarters at 10.30 a.m. The club is to be affiliated to the A.C.U.

Rotherham and District M.C.C.

On Friday, the 23rd inst., a large and enthusiastic meeting was held at Horsfall's Café, High Street, when it was unanimously decided to form a motor cycling club. The club commences with a membership of forty-eight. The following officials were elected: President, Mr. J. H. Pickford; secretary, Mr. R. H. Gilling, College Street; treasurer, Mr. H. Page; captain, Mr. E. Cross. The secretary announced that Mr. Pickford had signified his intention to give a trophy for competition by members of the club.

Bristol B. and M.C.

The inter-team event last week was a great success. Seven aside started over a treacherous course from Westbury-on-Trym, and the sub-captain's team defeated the captain's team on points.

On the 20th inst. an interesting paper on "Modern Lightweights" was read at headquarters, Mr. R. E. Moore demonstrating a Junior T.T. Humber.



Competitors in the recent Bristol B. & M.C. inter-team trial.

Club News.—

Oxford University M.C.C.

The hill-climb, announced last week to take place at Horsepath on March 9th, is open to past and present members of the University.

Purley and District M.C.C.

Mr. A. E. Bennett lectured on "Magnetos" on Monday evening, the 19th inst. to a good audience, who showed their interest by numerous questions The membership advances by leaps and bounds. The competition season opens on March 9th with a night trial over a course of some 140 miles.

Wansbeck M.C.

The annual meeting will be held at the Portland Hotel, Ashington, March 20th, at 7.30 p.m. After the usual business has been transacted, Dr. V. Burrow will read a paper on "Wayside Repairs and Makeshifts."

Bristol B. and M.C.

A highly successful team trial (captain v. sub-captain) was held on Saturday, the 17th inst., with Westbury-on-Trym as a centre. Sixteen members turned out over a course that was tricky and treacherous. In the end the sub-captain's team won. The whole of the competitors were amateurs.

CLIMBING WAFMINGTON HILL IN

THE MIDLAND RELIABILITY TRIAL.



R. E. Guest (6 h.p. Matchless sidecar) winner of the gold medal for best performance by an amateur.

NEW RECORD MADE IN NATAL.

Of the several motor cycle events in the motor gymkhana held by the Natal M.C.C., the most interesting was the race won by J. M. Read (Buchet racer) in the record time of 12m. 38⅖s. for ten miles. His opponents were F. G. Raynor (Ariel) and C. Morris (N.S.U.), but as their machines were standard touring mounts, it is not surprising that Read won, though at the beginning Raynor went ahead.

HILL-CLIMB IN AUSTRALIA.

The West Australian Motor Cycle Club held a hill-climb at Mount Street in December. The day was very unsuitable, the wind coming in violent gusts down the hill. This was the first official climb, and an amusing incident on the day previous was the arrival of several police officers with orders to arrest those practising for exceeding the limit. Several competitors' names were taken, and only after a deputation to the chief of police was the matter dropped.

Lightweight Class up to 300 c.c.—1, J. C. Cockrane (2-sp. F.N., 1 cyl.); 2, Wallis Nelson (2-sp. F.N., 1 cyl.); 3. Cliff Lloyd (N.S.U., 2 cyl.). Fastest time, Cliff Lloyd.

Standard Touring 3½ h.p. 500 c.c.—1, R. Wigmore (3½ Triumph, 1 cyl.); 2, H. Norton (3½ Kerry-Abingdon, 1 cyl.); 3, B. Thornley (3½ Triumph, 1 cyl.). Fastest time, R. Wigmore, 29⅖ sec.

Open event.—1, J. Naylor (4-cyl. F.N.); 2, W. Nelson (2-sp. F.N., 1 cyl.); 3, H. Norton (1 cyl. Kerry-Abingdon). Fastest time, J. Naylor.

SOUTH AFRICAN CHAMPIONSHIPS.

The motor cycle championships, held on the West Rand on January 21st, provided some very interesting racing, and some excellent performances were made. P. Flook and J. Hodgson are especially to be congratulated, as is also G. T. Taylor, who won the open event. J. Hodgson (Bradbury) made the fastest time of the day, the time in the open event being rather slower in consequence, possibly, of the wind which had sprung up. P. Flook (Humber twin) won the lightweight class in excellent time (faster than many of the larger machines). Results:

LIGHTWEIGHTS.

		M.	S.
1.	P. Flook (Humber twin)	4	25
2.	T. F. Stange (Singer)	4	36⅕
3.	G. Preston (Humber twin)	4	50

STANDARD SINGLES.

1.	C. Bright (Triumph)	4	1⅘
2.	A. Siems (B.S.A.)	4	4⅗
3.	A. L. Fox (Bradbury)	4	5

RACING SINGLES.

1.	J. Hodgson (Bradbury)	3	39⅗
2.	P. Flook (Triumph)	3	43⅘
3.	J. Steele (Triumph)	3	49⅕

ANY MACHINE.

1.	G. T. Taylor (Bat twin)	3	44
2.	P. Flook (Triumph)	3	45⅖
3.	J. Hodgson (Bradbury)	3	47⅖

Questions and Replies



A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Chain or Belt.

I am placing an order for a lightweight, but am undecided between two makes, similar in all respects except the drive—one being chain and one belt. Should prefer chain if satisfactory, but do not want to order one if unsatisfactory.—J.D.

You may quite safely invest in either belt or chain drive. Chain transmission, if looked after, really gives less trouble than belt, but the drive is hardly so sweet. There is, however, very little difference in this respect.

Foot Starter. Pillion Seats.

(1.) Is there a kick or other start-operator that I can have fixed to a Zenith Gradua gear motor cycle, 6 h.p., with sidecar, to prevent the run and jump start; and at what price? (2.) Do you think a pillion seat would interfere with the Gradua gear? (3.) Do you advise a side or straddle seat?—V.C.

(1.) No, there is no starting device which can be conveniently fitted to this machine. (2.) There is no reason why you should not have a pillion seat on the carrier if you desire it. (3.) This depends upon whether you desire to carry a lady or a gentleman.

Large Single-cylinder Engines.

Would you kindly inform me what is the largest air-cooled single-cylinder engine now being built for motor cycles? For seven years I used a special De Dion 90×100 engine, which, driven in a particular way of my own, gave the greatest possible satisfaction and absolutely smooth running although geared 4 to 1. I wish to procure another such engine at least as powerful, and with a heavy flywheel. The latter feature is, of course, essential to the best running. Why I particularly wish for the single-cylinder is that I like trying experiments, which are thereby considerably facilitated.—F.H.

Below we give some of the largest single-cylinder engines on the market:

	MM.	C.C.
4½ h.p. Excelsior	86 × 112	650
4½ h.p. Norton...	82 × 120	636
New Imperial ...	90 × 96	611
J.A.P.	90 × 93	592
Precision ...	89 × 95	597
Buck	90 × 95	604
Calthorpe ...	90 × 96	611

Single-cylinder and Sidecar.

(1.) I am wanting a motor cycle and sidecar for light work (*e.g.*, 18 stones and not long journeys—twenty to fifty miles—nor 20 m.p.h.). Will a 3½ h.p. fitted with two speeds do what I want? I suppose some hills will have to be climbed with passenger walking, but, I hope, not pushing. (2.) Will it be worth my while to go to the extra expense of a radial castor sidecar? (3.) If I wanted to take a big bag, say 40 lbs., in a rigid sidecar—no passenger—would it be safe (not the bag, but for myself)? (4.) Is an Armstrong three-speed gear likely to last as long as a two-speed and which would you recommend for above work.—T.L.C.

(1.) You must not expect very extraordinary results from a 3½ h.p. single-cylinder machine with sidecar. It would, however, do ordinary work in a country which is not very hilly. (2.) We should say the ordinary rigid wheel sidecar would be good enough. (3.) We consider that 40 lbs. would be hardly enough ballast to carry. The ballast should be somewhere approximate to the weight of a passenger. It is, however, quite possible to ride with the sidecar empty. (4.) We should say the three-speed gear would outlast the machine, and three speeds are always better than two.

Spark Advance and Economy.

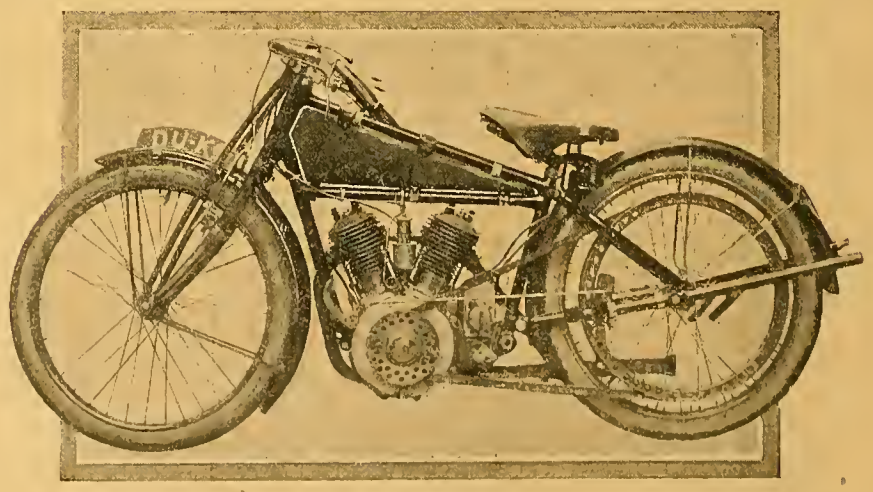
To settle an argument we have decided to leave it to your decision. One says a motor cycle, say on 100 miles run, will use more petrol with the spark retarded than on the same journey with spark advanced. Is this so?—S.W.

Yes. There is no doubt that to drive as economically as possible the ignition should be fully advanced, the gas should be cut down and as much air should be admitted as the carburetter will take.

Trembler Coils on Hills.

A short time ago I bought a book on motor cycling ("Hints and Tips for Motor Cyclists"), and in paragraph 197 I find the following: That a trembler coil in conjunction with a make and break contact gives the best firing on a hill when the engine slows down a little. Why is this so?—R.W.

The advantage of the trembler coil on a hill when running slowly is that the speed has no effect upon the intensity of the spark, as the make and break occurs electrically. With a plain coil or magneto you get a feebler spark at low speeds, as, to get a good spark, the points of the contact breaker should separate quickly, and the quickness in this case depends on speed of rotation.



A SPORTING MOUNT.

The above is the latest design produced by the Rex Motor Manufacturing Co., Ltd., and is likely to be seen in forthcoming open events in the hands of R. Lord. As will be noticed the frame permits of the lowest possible riding position. The engine is the standard 6 h.p. twin m.o.i.v. Rex. 77.5 × 95 mm.

Running on Acetylene Gas.

In the event of running short of petrol miles from the nearest town, is it possible to run a standard one-cylinder motor bicycle, B. and B. carburetter, etc., on acetylene gas by connecting the generator tube to the carburetter by taking the jet out, pushing the tube up, and plugging the bottom air hole with rags, and running with extra air and throttle as before? If not, what adjustments should be necessary? I understand this is possible, as I believe Prince Borgia ran his Itala several hundred miles thus in the Pekin-Paris race some years ago. Is the makeshift advisable?—EK 160.

It is quite possible to reach home on acetylene gas as supplied by your lamp generator. Acetylene, however, is somewhat uncertain in its action, and occasionally rather more violent in its explosions than one would like, consequently there is always some risk in its use. It might be that a broken connecting rod would result. It is quite possible to run on paraffin, which can generally be obtained, but it is difficult to start the engine if it has had time to cool.

Dry Cells and Coils.

I should be glad if you would help me with a second-hand motor cycle I have bought. It is of 2¾ h.p., a.o.i.v., accumulator ignition by trembler coil. (1.) I am told that the trembler coil will quickly run down a dry cell (which I prefer to an accumulator), and that it must be run on an accumulator. Is this so? (2.) The crank case compression release valve is in front of the cylinder, and consequently a lot of oil is thrown out. Would a pipe fitted in and ended at the bottom of the crank case be advisable? (3.) What are the best means of keeping an a.o.i. valve in order? The machine is fitted with a new h.b.c. B. and B. carburetter.—J.S.E.

(1.) Many trembler coils are certainly extravagant and so quickly run down a dry cell. Under the circumstances you had better purchase a special economical plain coil supplied by vendors of dry cells. (2.) Certainly a pipe fitted as you suggest would be an advantage. (3.) These valves need no special attention except examining the springs and renewing them from time to time; also keeping an eye upon the lift, which often varies through wear on the cotter.

A Common Query.

(1.) Please let me have your readers' experiences with regard to the 3½ h.p. Lincoln-Elk motor cycle. (2.) I should also want to convert the above machine into a two-speed free engine. Can you recommend a good inexpensive make?—H.J.

(1.) The reports concerning this machine we have received of late have been quite satisfactory. If you wish for readers' experiences, kindly write us a separate letter to this effect, enclosing a stamped and addressed envelope in which the replies may be sent to you. (2.) We should recommend you to communicate with the makers regarding a two-speed gear for this machine.

Cams and Tappets.

I would be greatly obliged if you would kindly state briefly your opinion of the merits and demerits of an engine the tappet rods of which are operated direct from the cams, as compared with one where rockers are interposed between the cams and the tappet rods.—R.W.

When rockers are interposed between the cams and tappet rods there is far less friction, and the tappet rod has a direct vertical lift, and there is no binding action on the guide. This, we think, speaks sufficiently well for this particular system. Engines in which no rockers are interposed between the cam and tappet rod cannot therefore be so efficient, and the wear on the tappet guides is likely to be excessive.

READER'S REPLY.

Petrol Leakage on to Exhaust Pipe.

I observe in your issue of February 15th, page 162, in reply to "Novice's" queries, you state that if the petrol were to leak on to a red hot exhaust pipe it would cause an explosion. On February 16th I conducted a small experiment in the following form: I placed a small quantity of petrol in a tin and plunged a red-hot soldering iron into it. The result was that fumes came from the petrol, but no flame. Therefore, I imagine that if the petrol were to leak on to a red-hot exhaust pipe the result in this case would be the same as in my experiment.—JUVENILE.

[The above experiment is a dangerous one, and the fact that the petrol did not catch fire is no proof that it would not do so under slightly different conditions. It reminds us of a case of a veteran motorist who was experimenting with a spark gap, some nine years ago. He thought he had conclusively proved that a naked external spark gap on a plug could not set fire to petrol vapour. To do this he soaked petrol in cotton wool and placed it adjacent to the gap. Having agitated the trembler forty-nine times he came to the conclusion that his theory was proved, but he finally decided to try once more for luck when he found, to his surprise, that the cotton wool instantly blazed up.—ED.]

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"South Carolinian" (Shrewsbury) would like the advice of readers who have successfully converted a 9 h.p. Riley tricar to the sociable type.

"T.O.L.H." (Hebburn).—5 h.p. A.J.S., with and without sidecar.

"A.C.F." (Aylesbury).—3½ h.p. Rudge, with multi-speed gear.

"F.W.C." (Ledbury).—3¾ h.p. 1911 Scott sidecar.

"F.J." (Swansea). — Bedelia and Sabella quadcars. Durability, etc.

"A.T.B." (Lowestoft).—1911 3½ h.p. Tourist-Rex sidecar.

"K." (Greenock).—Steel-studded and rubber-studded tyres with 5 h.p. twin sidecar.

"W.B.H." (Tunbridge Wells).—L.M.C. Auto-Varia pulley and free engine on 5 h.p. twin-cylinder.

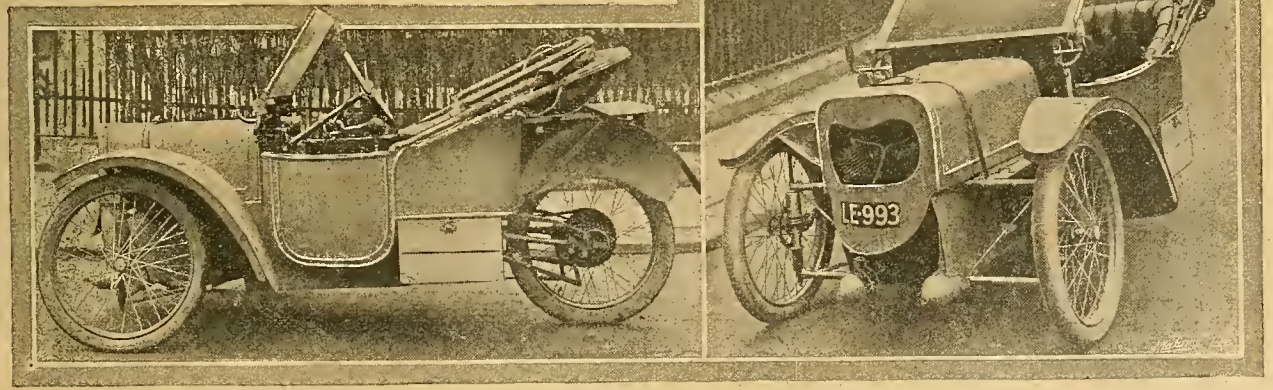
"J.K." (Huddersfield). — Sturmey-Archer three-speed gear with sidecar.

"C.W.S." (Kettering).—8 h.p. Bat two-speeds and sidecar. Also Binks carburetter.

"C.J.F." (Manchester).—2½ h.p. Premier, Armstrong three-speeds.

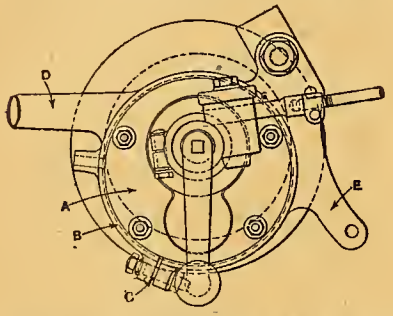
"W." (Cardiff).—A.L. generator. Reliability, etc.

An 8 h.p. Morgan Runabout fitted with a London made two-seated body. It may be seen at Messrs. Harrod's, Ltd.



Speed Gear Transmission Adjustment.

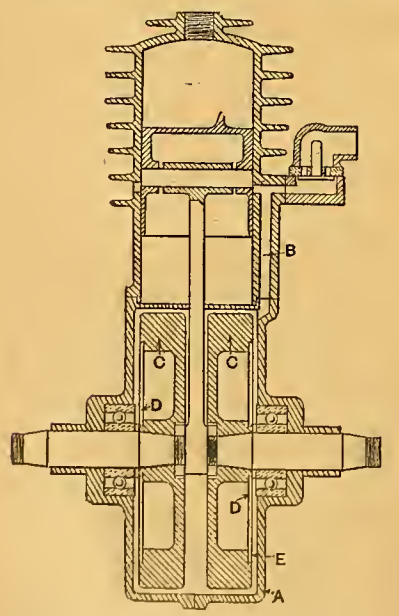
The two-speed bottom-bracket type gear which is being experimented with by the Triumph Company is provided with simple means for adjustment of the chain by which it is driven from the engine. The gearshafts are mounted in a circular casing A, the periphery of which is eccentric to the axes of the shafts. This casing is carried in a housing B which is split, and provided with a clamping bolt at C. It is obvious that by slacking off the bolt C, and rotating the casing A in



the housing B the distance between the engine and the gearshafts can be adjusted. The housing C is formed integral with the frame lugs D and engine clamping plates E.—Triumph Cycle Co., Ltd., and C. W. Hathaway, No. 7,957, 1911.

Two-stroke Engine Flywheel Construction.

This invention relates to the type of two-stroke engine in which the charge is first drawn into the crank case A and then forced into the combustion chamber *viâ* transfer ports B by the downward movement of the piston. The object is

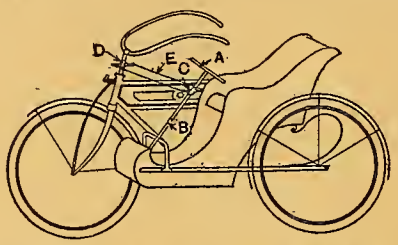


to reduce the air capacity of the crank case by enclosing the space left by the overhanging rims C of the flywheels. This is effected by the insertion of plates D, which are held in place by spinning over the flywheel faces as shown at E.—Stuart-Turner, Ltd., and A. F. Flint, No. 2,213, 1911.

PATENTS by Eric W. Walford A.C.I.P.A.

Sidecar Control.

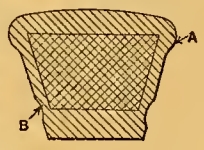
In order to enable a sidecar combination to be driven from the sidecar seat a steering wheel A is provided mounted upon a



pillar B, having arms C, connected by rods E to corresponding arms D on the cycle handle-bar. The engine control may be effected by suitable hand or foot levers arranged conveniently for the occupant of the sidecar.—H. Dawson, No. 6,730, 1911.

A Dunlop Belt Improvement.

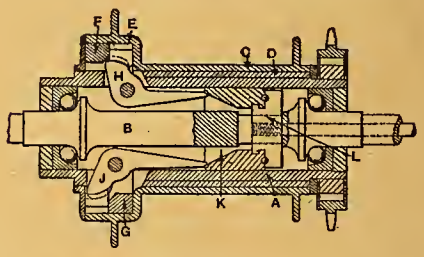
In this specification it is pointed out that when a belt having flat inclined sides passes round a pulley of small diameter, the total area of the sides does not engage the pulley flange. This effect is produced by the distortion of the belt causing its upper and wider part to decrease in width, whilst at the same time the compression of the lower part, due to the curve of the belt, causes an increase of width, the intermediate portion of the sides remaining practically normal.



The result is that the upper and intermediate portions of the belt do not materially assist in the drive. To overcome this, the belt is moulded as illustrated in section. The sides, at the widest part of the belt, are formed with ribs A of rubber, and at the narrower parts have grooves B. By this means, distortion of the upper part "draws in" the rib A, and compression of the narrower part fills up the groove, the two sides of the belt thus becoming practically flat and affording the maximum frictional surface.—Dunlop Rubber Co., Ltd., and J. V. Worthington, No. 3,009, 1910.

The D.H.K. Hub Clutch.

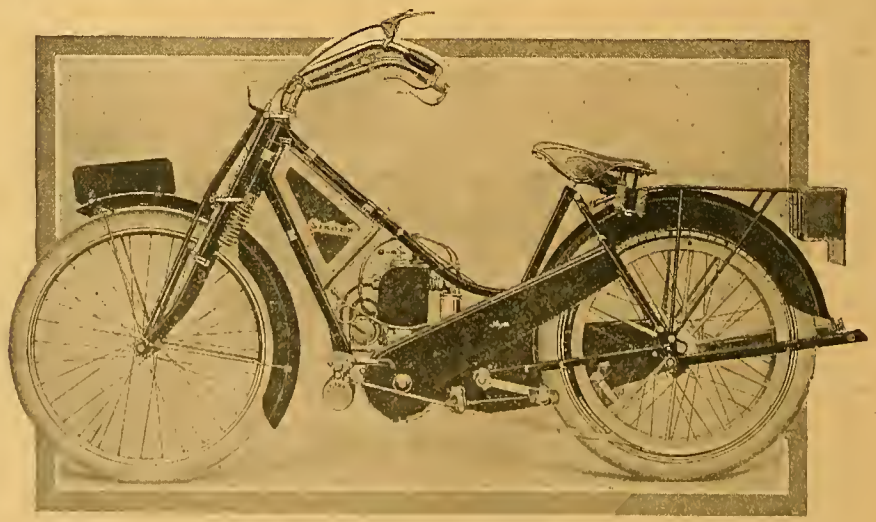
In this simple and ingenious free engine hub the belt pulley and pedalling sprocket are carried by a sleeve A mounted upon ball bearings on the spindle B. Around the sleeve A is arranged the hub shell C, a bush D of phosphor bronze being interposed and secured to either the shell or the sleeve. The shell C is enlarged at E to accommodate a pair of brake bands F G, which are adapted to be expanded by



levers H J pivoted on the sleeve A. These levers are operated by an internally recessed sliding collar K, which in turn is moved by a sliding rod and block L, thrust bearings being interposed as shown.—J. Doherty, No. 19,560, 1911.

EDITORIAL NOTE.

The Editor disclaims all legal responsibility in any way for loss of copy in the form of manuscript, drawings, or photographs submitted to him. Rejected manuscript, drawings, and photographs will only be returned provided a stamped addressed envelope is enclosed for the purpose.



The finished lady's model 2¼ h.p. Singer, the dress guarding of which is worthy of special notice. The machine illustrated is a clutch model; it can also be obtained with a two-speed countershaft gear if desired.

THE EASTER HOLIDAYS

begin on April 5th.
Get your machine ready in the pink of condition before then.
An essential item in your outfit should be

A LODGE SPARKING PLUG

DESIGNED FOR MAXIMUM POWER.

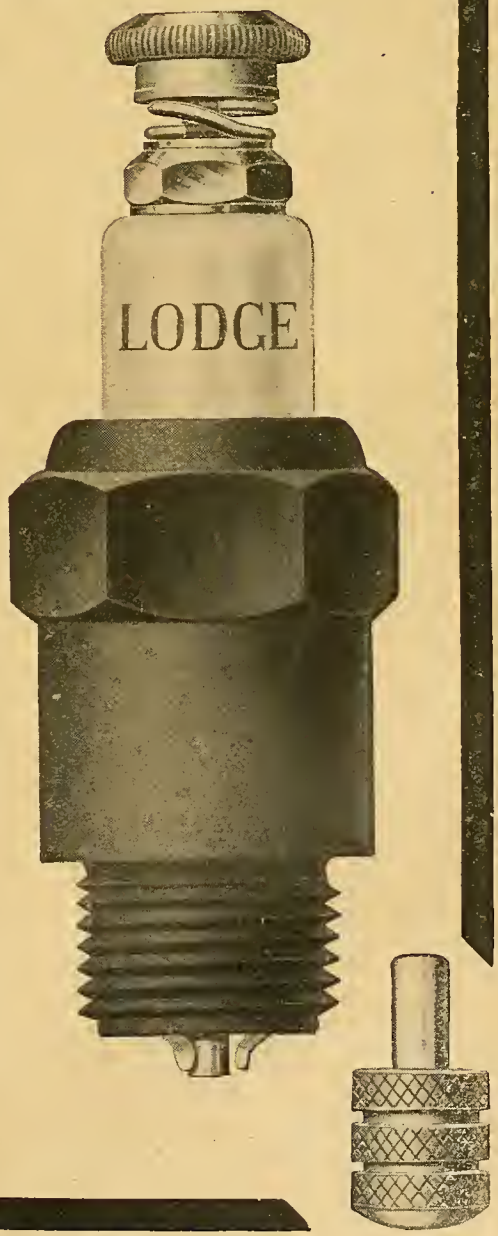
IMPORTANT ANNOUNCEMENT

Lodge Bros. & Co. have pleasure in advising all motor cyclists that on and after March 1st the Lodge T.T. Steatite Motor Cycle Type Plug (as illustrated) will be sold everywhere at **4/-** each.

Owing to the great success of this T.T. Steatite Plug, the price of which has always been **5/-**, hitherto, we have decided to supply it as our regular motor cycle plug for the future. Although the ordinary porcelain insulated type will still be procurable when required.

This special T.T. Plug is more expensive to make than our ordinary pattern, but we hope and expect that all motor cyclists will so appreciate the reduction in price that we shall be able to make up for the reduced profit on each plug by the greatly increased quantity which will be sold.

When buying the plugs it is only necessary to say Lodge Motor Cycle Plug; and it is packed in a striped red box. Each box contains the plug and sparking point gauge as illustrated, push-on terminal, copper-asbestos washer, and instructions.



PRICE 4/- NETT.

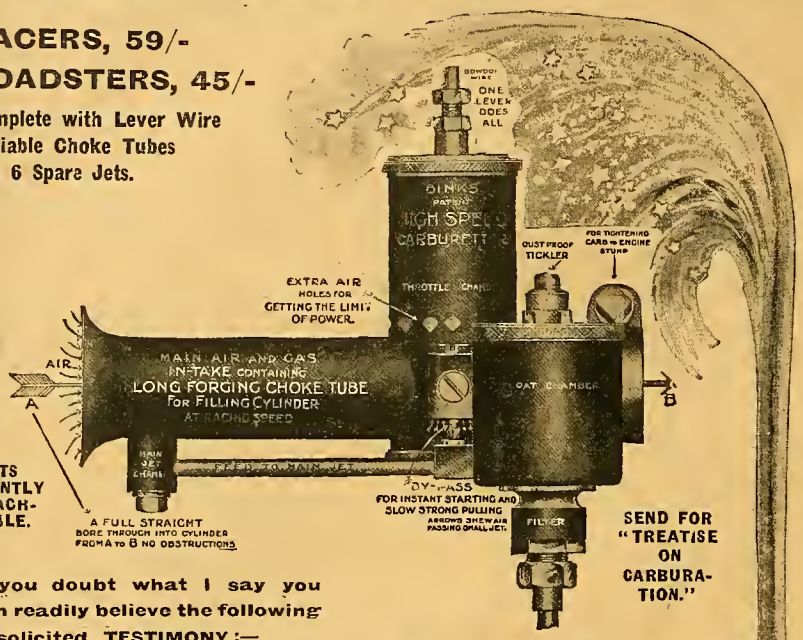
LODGE BROS. & CO., DEPT. E, NEW ST., BIRMINGHAM.

A REVOLUTION IN CARBURETTERS

RACERS, 59/-

ROADSTERS, 45/-

Complete with Lever Wire Variable Choke Tubes and 6 Spare Jets.



If you doubt what I say you can readily believe the following unsolicited TESTIMONY:—

H.M.S. "Cynthia,"
Sheerness.
Jan. 29/12.

Dear Sirs,

I am writing to thank you for your advice *re* fitting a two-jet carburetter to my 5/6 Bat-Jap two-speed gear and sidecar. I have had it fitted and tried under a good variety of conditions of weather, etc., and find that every one of your claims have been fulfilled. The results were excellent, and far exceeded my hopes. I have done away with the troublesome and dangerous practice of injecting petrol in the cylinders (I have three times had a carburetter on fire through this) and can now start a walking pace without any preliminary fiddling about.

I find the single lever control very easy, and the engine is now quite amenable to the slightest alteration of throttle and very sensitive to small alterations of the spark lever, enabling the engine to be kept just ticking when free, as you claim. I have never been able to do this with a high powered engine before, although I think I am gifted with the average amount of common sense. On top gear the machine will climb hills with a passenger that it wouldn't look at before except on low, and the pace on long moderate hills has increased in a most gratifying way. In short, your carburetter has transformed a really good machine into a far better one, and I cannot myself understand why makers send out expensive machines not fitted with a carburetter that will give these results, when for a few shillings extra such a one could be fitted. Surely the machines are worth it? Please send me three spare springs for keeping the choke barrels in place, and let me know the cost. I might mention that I heard of your carburetter quite by chance,

Yours faithfully,

The original of this letter will be shown at the works.

If you will call on me I will show you scores of similar letters, which I greatly prize.

GENTLEMEN, this is what you MUST HAVE to get EASY START, a SLOW PULL in TRAFFIC, PERFECT FLEXIBILITY, UTMOST POWER, and A TICK ROUND when STANDING or DECLUTCHING

and

VIOLENT ACCELERATION.

GREAT ECONOMY.

ONE LEVER DOES IT ALL.

I GUARANTEE THESE CLAIMS.



Beautifully made in Modern Factory.

LONDON.

SERVICE CO. keep stock.

AGENTS WANTED.

C. BINKS, Ltd., Eccles, Near MANCHESTER.

THE TESTIMONY of Advertisers.

Two extracts from letters received by "The Motor Cycle."

"We are glad to say that our previous advertisements in your well-known paper have given us the greatest satisfaction. We have had enquiries from all parts. . . .

The Haven Motor Cycle Works,
Old Kent Road, S.E.

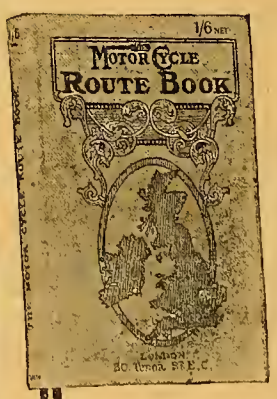
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"Last Thursday I advertised a 1912 ————, not a new machine, in 'The Motor Cycle,' £50. I sold the machine the same day."

A.F.D.

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"The Motor Cycle" can be relied upon to bring satisfactory results to advertisers.



When Touring or Planning a Tour use

"THE MOTOR CYCLE"

ROUTE BOOK.

It contains descriptive main routes for the whole of the United Kingdom; speed limits; forty-five maps (Bartholomew); and copious index.

Price	By post,
1/6 net.	1/9.

Obtainable of ILIFFE & SONS Ltd., 20 Tudor Street, London, E.C., and leading Booksellers.

(Remittance must accompany all post orders).

HOW TO DO IT!!!

This is a question we are very often asked by intending purchasers! If you have a motor cycle, and you want to get rid of this in exchange for another, the proper way to do is to write to Hitchen's, of Morecambe, for an estimate of the value of the machine, at the same time mentioning what you think it is worth yourself. They will then tell you, to one or two pounds, what they will allow in exchange for another machine; and they will also tell you when they can deliver it, if it is a new one. If a second-hand one, they will send you full specifications in a list which they publish each week. In the case of first-class machines, they will arrange that, if the deal does not go through for any particular reason, they will return your machine carriage paid. This simply means that they will share with you the expense to which you have been put. They will also arrange that, if you are a little short of the money to complete the deal, you can pay the balance by instalments, on terms arranged. Hoping to sell motor cycles for cash to-day is rather a vain hope. We ourselves find it an impossibility on account of the enormous number of second-hand machines there are on the market. Still, there is no reason why you should not be able to exchange them, even if there is a glut. The "exchanging" of motor cycles is our business, and we are ALWAYS pleased to do it. At the same time, we cannot indulge in the luxury of taking in a 1911 motor cycle on the exchange system for another one of the same make—this year's model—for £5 to boot. Please get this notion out of your mind at once. For some peculiar reason we have been deluged this last week with letters from people who thought that if they paid three to five pounds down, and their last year's model, they could have the same model new this year. You will clearly understand that this is nonsense. Neither Hitchen's, of Morecambe, nor anyone else can do such a thing. We are prepared to give you a very reasonable allowance, but shall not tell you that £5 will do the trick, persuade you to send along your machine, and then tell you that "we are awfully sorry, but we shall require £15 to boot." This rot is not the class of business which appeals to us by any means. We are also not in a position to deliver a new 1912 model for £3 down, and the balance in instalments. This is another fallacy which people have in their heads, and which we wish to drive out. What we can do is to supply any machine, barring one or two exceptions, and allow you to pay from one-quarter to one-third down, and the remainder in twelve monthly instalments. Of course, we charge a small commission on this kind of business. It might pay you better to pay more than one-third down, and pay the balance off within six months, thereby getting better terms. When you write for particulars, kindly say how you are prepared to pay. This saves a lengthy correspondence, gets straight to the point, and is more satisfactory for everyone concerned.

If you are looking out for a motor cycle, do not write and ask us what we can do for you without stating whether you want to pay seven pounds or seventy, as this, of course, necessitates a letter from us asking you what you wish to spend. You are not likely to get the same class of machine for £7 as you will for £70, so that an idea of the price in your first letter is essential. Also, if you have any particular fancy, just mention it. This also saves correspondence.

We have a lengthy list, but this does not comprise the whole of our stock by any means. Do not write to ask our **cash** terms for a machine, and then tell us that you have two old crocks you wish us to take in part payment, and that you would have to pay the balance in instalments. We do not consider this to be **cash** business. Neither do we consider it to be cash when part of money is paid down, and the remainder by instalments. Don't ask us for anything like 10% off motor cycle list to be paid for by instalments, as this is another class of business that we cannot entertain. We have answered considerably over one thousand letters per week for the last month explaining to people that there is only one thing we consider to be **cash**, and that is the coin of the realm. However, we are always pleased to have your kind enquiries, no matter whatever kind they are; we can fix you up better than any others.

During the last month we have been enabled to increase our contracts, and think we shall now have quite £50,000 worth of machines coming in. This will come in at the rate of a few thousand pounds' worth per week, and we want your assistance to help us to shift it as it comes in.

At all times we are always pleased to oblige other agents where the makers make no restrictions, and we are always pleased to buy from other agents such machines as Scotts, Phelon & Moore, Morgans, chain-driven Bat-Japs, chain-driven Bradburys, Clynos, Douglases, Matchless, and Zeniths. If you are in the trade and have a client wanting a machine, we shall be pleased to have your enquiries. We are out on the jump ourselves, and hope you are the same, as we feel quite sure that the motor cycle boom for new machines is with us, and we intend to take advantage of it.

We are giving up the accessory trade, and wish to clear our stock; so if you are wanting anything, drop us a line. Of course, we shall still continue the agencies for such things as F.R.S., Lucas Lamps, Cowey and Jones speedometers, etc., etc. These we shall be pleased to supply on cash or exchange terms.

Our terms are **all on approval.** If not as specification **money back** within three days or exchanged any time. No other firm will treat you on the same terms, so you cannot do better than get on the move with Hitchen's, of Morecambe, as they are prepared and anxious to treat you well, and thereby secure your recommendation. Our stock of second-hand machines is enormous—much larger than that of any other firm; and we shall be pleased to have the pleasure of supplying you with a list of same.

If you should hear someone say that we have no new stuff to sell, don't you believe it. We have seldom less than one thousand pounds' worth of new stuff, and often the stock of new models is worth £2,000. They are all here awaiting your acceptance. Next week we have six Phelon & Moores coming through. We have also Scotts, Bat-Japs (chain drive, also with the P. & M. two-speed gear), Zeniths, Rudges F.E., Humbers, Premiers 1911 and 1912 models (both new), Clynos, Bradburys, A.C.'s, Douglas, and several more things due for this week. We are not contracting very much ahead, finding it more satisfactory to have the machines here for the shops to see. This saves a lot of complications, and saves you from having to write to the editor complaining about the unsatisfactory system of business, etc. If you will get on the telephone, or wire, we can give you an answer at once in stock or not.

Remember the old address:

HITCHEN'S, Morecambe.

Telegrams: "Motor." Tel. 112.

MOSELEY

GROOVED



Extra strong beads, 3-ply heavy canvas

36/- per cover, 26 × 2½ beaded.

FROM ALL AGENTS.

Catalogue free from the makers—

DAVID MOSELEY & SONS, LTD.,

Ardwick, MANCHESTER.

CONSISTENT RELIABILITY

is the predominating feature of the

"U. H." MAGNETO.

It can always be relied upon to give a perfect spark. Short circuiting through sooted plugs and all ignition trouble is unknown to the user of the "U.H." Fit it to your machine.

Particulars free on request.

S. WOLF & CO., 115, Southwark St., London, S.E.

Telegs.: "Widerstand, London." 'Phone: 5172 Central.

C.D.9

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex

SECTION IX
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

Wauchope's The Motor Cycle Mart of the Kingdom.

The resort of all who want the Best Motor Cycle Bargains in latest 1912 models, either delivered immediately or promptly at a guaranteed agreed future date. The Kingdom's largest stock, comprising over 250 New and Genuine Second-hand Machines, including—

5011.	3½	h.p.	1911 standard **BAT**	£38 0
5018.	3½	h.p.	1908 2-speed **P. & M.**	£27 10
5029.	2¾	h.p.	**ROVER**	£10 10
5030.	3½	h.p.	1911 2 speed **HUMBER** ..	£38 0
5036.	2½	h.p.	1911 **MOTOSACOCHE**	£28 0
5040.	5	h.p.	1910 2-speed **V.S.** & sidecar	£35 0
5041.	8	h.p.	**MATCHLESS**	£40 0
5044.	2¼	h.p.	1910 2-speed **F.N.**	£22 10
5046.	3½	h.p.	1910 cone clutch **REX** ..	£30 0
5049.	3½	h.p.	1910 free-engine **TRIUMPH**	£38 0
5051.	3½	h.p.	1911 2-speed **HUMBER** ..	£37 10
5052.	2¾	h.p.	1911 2-speed **DOUGLAS**, Model E	£42 10
4982.	8	h.p.	1911 **BAT-J.A.P.**	£40 0
4989.	3½	h.p.	1911 2-speed **HUMBER** ..	£36 10
4990.	3½	h.p.	1910 **TRIUMPH**, free-engine	£39 0
4993.	2	h.p.	1910 **WOLF**	£18 10
5001.	3½	h.p.	1911 free eng. **BRADBURY**	£40 0
5003.	7	h.p.	1911 free engine **INDIAN**..	£45 0
5005.	2	h.p.	1911 lightweight **HUMBER**	£28 0
5006.	3½	h.p.	1910 T.T. **TRIUMPH**	£34 0
5007.	5	h.p.	1910 2-speed **V.S.**	£35 0
5009.	3½	h.p.	1911 T.T. **BRADBURY** ..	£35 0
4944.	2¾	h.p.	1911 **DOUGLAS**	£30 0
4945.	2¾	h.p.	1911 2-speed **DOUGLAS**, Model E	£38 10
4954.	3½	h.p.	1909 free engine **TRIUMPH**	£33 10
4956.	3½	h.p.	1911 2-speed **HUMBER** ..	£37 10
4957.	8	h.p.	1910 **BAT** and sidecar	£40 0
4964.	3½	h.p.	4-cylinder **F.N.**	£12 0
4913.	3½	h.p.	1911 free engine **TRIUMPH**	£42 10
4921.	2¾	h.p.	1911 2-speed **DOUGLAS**, Model E	£38 10
4926.	3½	h.p.	1910 **PREMIER**	£27 0
4929.	5½	h.p.	1907 **TRIUMPH**	£23 0
4933.	3½	h.p.	1909 **TRIUMPH**	£30 0
4934.	3½	h.p.	1908 **TRIUMPH**	£25 0
4939.	3½	h.p.	1909 **TRIUMPH**	£28 0
4941.	3½	h.p.	1911 2-speed **HUMBER** ..	£38 10
4893.	3½	h.p.	**PEUGEOT**	£20 0
4903.	3½	h.p.	1911 tourist **REX**	£30 0
4868.	8	h.p.	1911 2-speed **BAT**	£55 0
4854.	3½	h.p.	1911 free engine **TRIUMPH**	£45 0
4597.	3½	h.p.	1911 **ZENITH-GRADUA** ..	£42 10
4607.	3½	h.p.	1911 **KERRY-ABINGDON**	£32 10
4760.	5	h.p.	1911 free engine **INDIAN**..	£42 0
4863.	3½	h.p.	1911 **CHATER-LEA-J.A.P.**	£35 0
4828.	3½	h.p.	1911 **JAMES**	£35 0
4733.	6	h.p.	1909 **CHATER-LEA**, 2-sp. chain drive, and sidecar	£40 0
4727.	3½	h.p.	1911 **KERRY-ABINGDON**	£32 10
4533.	2	h.p.	1911 3-speed **HUMBER** ..	£35 0
4758.	3½	h.p.	1911 single-speed **HUMBER**	£30 0
4420.	3½	h.p.	1911 free engine **PREMIER**	£42 10
4768.	2¾	h.p.	1911 standard **DOUGLAS**..	£30 0
4575.	3½	h.p.	1911 standard **BRADBURY**	£35 0
4638.	3½	h.p.	1911 free engine **TRIUMPH**	£45 0
4628.	3½	h.p.	1910 **TRIUMPH**, Mabon, variable gear	38 Gns

Ask for copy of List. Matchless value in Exchange or used motor cycles for new. Send details of yours, and receive our unequalled handsome liberal offer for same in part payment of a new model.

WAUCHOPE'S,
9, SHOE LANE,
FLEET ST., LONDON, E.C.

'Phone: 4777 Holborn. Wires: "Opificer, London."

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

1912 Scott and Douglas; order now for early delivery. —Archdale, Bishopton Lane, Stockton-on-Tees.

1911 Scott, in perfect condition, and mechanically sound; owner buying 1912 Scott: price 50 guineas.—Archdale, Bishopton Lane, Stockton.

TRIUMPH, 3½h.p., 191 model, free engine, brand new out of crate; to clear £52, with lamp and horn; a bargain.—Turvey and Co., The Motor House, Sunderland.

TRIUMPHS, Humbers, B.S.A., Royal Enfield motor cycles, lightweights, 2 speeds, free engines; write, wire, or 'phone for immediate deliveries.—Turvey and Co., The Motor House, Sunderland. Tel.: No. 626.

3½h.p. Rex Motor Cycle, 1909 model, magneto, h.b.c., spring forks and seat, in splendid running order; £21 to clear.—Turvey and Co., The Motor House, Sunderland. Sole agents Triumphs, Humbers, B.S.A., Enfields, Calthorpes Extra catalogue free.

TRIUMPH, 1910, free engine model, excellent condition, h.b.c., lamp, horn, spare Rich tube, belt, and valve; £37/10.—Ross, High Dock House, South Shields.

4h.p. Roc, magneto, Chater-Lea, footboards, perfect order. £25; 3½h.p. Fafnir and sidecar, Chater-Lea, torpedo tank, footboards good tyres, all spares, fast and powerful, a bargain, £20.—Box No. 9,646, *The Motor Cycle* Offices, Coventry.

SECTION II.

York and Lancashire.

A.S.L. A.S.L. A.S.L.

SIT on Air Springs and Cushions to Ride.

LUXURIOUS Motor Car Comfort Awheel.

MANCHESTER and District Sole Agents: Inspection invited.—Motor Exchange, 32, Downing St., Ardwick Green.

HODGSON for Clynes (in stock).

HODGSON for Premiers (in stock).

HODGSON for Sidecars (in stock).

HODGSON, 10, Horton Rd., Bradford. Tel.: 5361.

1910 Triumph, first-class condition, lamp, horn, tools, spares; £32/10.

1911 Moto-Rêve, 2¾h.p. twin, shop-soiled; £32/10.—Loynds, Duckworth St., Darwen.

THE Great Douglas Agent, Douglas Gourlay, Fallowfield, Manchester.

3½h.p. 2-speed P. and M., perfect; offers. — 155, Woodbine St., Salford.

The Halifax Motor Exchange

Largest Rex Dealers,

16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams, "Perfection."

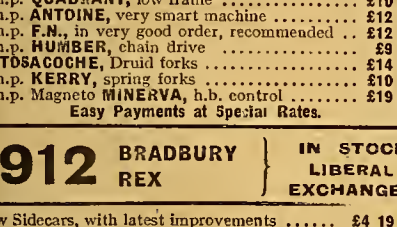
GUARANTEED IN RUNNING ORDER.

1912 2¾ h.p. Two-speed **REX** Junior, NEW £45 0
1912 Twin **REX** Sidette. In stock. NEW £75 0
1911 3½ h.p. Tourist **REX**, done 750 miles £32 10
1911 2¾ h.p. Two-speed **REX** Junior, as new £39 10
1911 3½ h.p. **REX**, clutch model £37 10
1911 5 h.p. Two-speed **REX DE LUXE** £47 10
1910 7 h.p. **REX DE LUXE**, two speeds £48 0
1910 7 h.p. Twin **REX**, HOT STUFF £37 10
1910 5 h.p. Twin **REX**, very fast £29 10
1910 5 h.p. **REX DE LUXE**, fine sidecar machine £42 10
1910 3½ h.p. **REX**, very fast, special machine £27 10
Magneto Twin **REX**, 1911 Mabon clutch £21 10
1909 3½ h.p. Two-speed **REX DE LUXE** £32 10
5½ h.p. Two-speed Twin **ROC** magneto, Druids .. £32 10
1908 3½ h.p. Magneto **REX**, very fast £22 10
1907 3½ h.p. Magneto **REX**, spring forks £19 19
5½ h.p. Twin **REX DE LUXE**, Roc clutch, sp. forks £22 10
Brand New 3½ h.p. **REX**, spring forks, and pedals £31 0
Brand New Twin Magneto **REX** £37 15
3½ h.p. Two-speed **N.S.U.**, smart £21 0
1908 **TRIUMPH**, very powerful £28 10
Magneto **TRIUMPH**, spring forks, specially low .. £25 0
3½ h.p. **REX**, very fine condition £15 10
Four-cylinder **F.N.**, magneto, spring forks £18 18
F.N. Magneto Lightweight £18 10
3½ h.p. Magneto **FAFNIR**, M.O.V. £19 0
3½ h.p. **WOLF**, Stevens engine, h.b. control £12 10
Twin Magneto **MOTO-REVE** £17 10
3 h.p. **QUADRANT**, low frame £10 10
3 h.p. **ANTOINE**, very smart machine £12 10
2¾ h.p. **F.N.**, in very good order, recommended .. £12 10
3 h.p. **HUMBER**, chain drive £9 10
MOTOSACOCHE, Druid forks £14 10
2¾ h.p. **KERRY**, spring forks £10 10
3½ h.p. Magneto **MINERVA**, h.b. control £19 10

Easy Payments at Special Rates.

1912 BRADBURY / REX — IN STOCK. LIBERAL EXCHANGES.

New Sidecars, with latest improvements £4 19 6
Brand New 1911 3½ h.p. Tourist **REX** ..... 43 Gns
" " 1911 2¾ h.p. Two-speed **REX** Junior.. 50 Gns
" " 1911 3½ h.p. Free-engine **REX** ..... 48 Gns
" " 1911 3½ h.p. **REX DE LUXE** ..... 57 Gns
" " 1911 5 h.p. **REX DE LUXE** ..... 60 Gns



"PRECISION" ENGINES AT SLIGHT EXTRA COST.
Liberal Exchanges in addition to Cash Discount.

£3 to £5 DOWN and 5/- weekly secures prompt despatch of

Lightweight **MOTOSACOCHE**, spray, runs well .. £14 10
3 h.p. **QUADRANT** £10 10
2¾ h.p. **KERRY**, spring forks £10 10
Twin Magneto **MOTO-REVE**, Druids £15 0
3½ h.p. **WOLF**, spray, smart, h.b. control £12 10
3 h.p. **HUMBER**, chain drive £9 10
3½ h.p. **REX**, spring forks, reliable £15 10
3½ h.p. **BRADBURY** £15 0
3 h.p. **ANTOINE**, h.b. control, spring forks £12 10
2¾ h.p. **DE DION** £10 10
N.S.U. Magneto Lightweight £15 10

£7 deposit and 10/- weekly secures—

Magneto **TRIUMPH** £25 10
5½ h.p. Twin **REX DE LUXE**, mag. £22 10
Four-cylinder **F.N.**, magneto £19 19
3½ h.p. Magneto **REX** £19 19
Twin **MOTO-REVE** £19 19
F.N. Magneto Lightweight £19 19
3½ h.p. Magneto **MINERVA** £19 10
Magneto Twin **REX** £19 19

SUNDRIES.

1911 Mabon Clutch, fits Rex 55/-
Brooks's B100 Saddle 9/6
Brooks's B105 Saddle 11/6
New Large Lycett's Saddle 9/6
New Sidecar Aprons with studs 7/6
Plated Rex Pattern Handle-bars 6/6
New 20-amp. Fuller Accumulator 11/-
New Harrison's Back Rest 9/6

MOTOR BICYCLES FOR SALE.

2¾ h.p. Werner, m.o.v., F.N. automatic, h.b.c., 31in. high, accumulator, fine order; £10.—Arthur Holdsworth, Rastrick, Yorks.

1911½ Zenith, 3½ h.p., Lucas lamp, horn, Whittle belt, tools, etc., perfect condition throughout; £41.—Dickinson, Gt. Nelson St., Liverpool.

HALIFAX.—Brand new 1911 single and 2-speed Rexes; discount for cash; exchanges accepted.—Motor Exchange, Westgate, Halifax.

4 h.p. Quadrant, magneto, spring forks, h.b.c., B. and B., adjustable pulley, new tyres, belt, everything perfect. £15.—65, Hilden St., Bolton.

1912 Bradburys from stock; few good accumulator machines wanted in exchange; liberal allowances for cash deals.—Colliers, Westgate, Halifax.

1911 Triumph, clutch model, excellent condition, new Kempshalls, spare belt, valve, tools, etc.; £43/10.—31, Princess Rd., Urmston, Manchester.

UNCRATED 1912 Bradbury; must sell this fine machine at great sacrifice; anyone wanting bargain?—9,768, *The Motor Cycle* Omces, Coventry.

1910½ Twin Royal Enfield, new belt, tyres, 1911 improvements, absolutely perfect; £25, or offer.—Hy. Haworth, 141, Duckworth St., Darwen, Lancs.

4½ h.p. Humber, 2-speed and free engine, w.c., and chain driven, just overhauled, tyres almost new, going abroad; best offer.—125, Arpley St., Warrington.

3½ h.p. Triumph Motor Cycle, in excellent running order and appearance, tyres new Dunlops, lamp, horn, and tools; £33.—Carnforth Motor Co., Carnforth.

LIVERPOOL Official Agents for Bradbury, Zenith, Singer, Rex, Alcyon, Moto-Reve; delivery from stock.—F. C. Jones and Co., 3, Redcross St., Liverpool.

1912 6h.p. Dot, with 2-speed and free enigne, J.A.P., not ridden 300 miles; best offers; good reason for selling.—Dobson, Bury Bridge, Bury. Nat. Tel.: 294.

6 h.p. J.A.P., Chater-Lea frame, Bosch magneto, Druid spring forks, free engine clutch, in splendid condition; bargain, £32.—Allen Bros., Wellington Rd., Stockport.

IN Stock, 1912 Matchless twins, Zenith, single and twin, Douglas (£41), Bradbury (£48); accessories, repairs, sidecars.—W.F. and Co., 5, Cheltenham Parade, Harrogate.

DELIVERY from Stock.—Zenith Twin, Rovers, Enfields, Motosacoche, James, Excelsior, Triumph, Gloria Sidecars; catalogues free.—Thompson, 83, Aulaby Rd., Hull.

3½ h.p. Rex, free engine, Bosch, h.b.c., tank, enamel, belt, valves, bushes, Cowey, Kerry handle-bars, all new; lamp, tools, horn; best cash offer.—Tuson, Westcliffe, Preston.

1911 Premier, £34; 1911 Bradbury, £35; 1910 Triumph, £35; 1910 P. and M., £38; 1912 Triumphs, P. and M.'s, Bradburys, Ivy motor cycles.—T. Reed, Nettlesworth.

PHELON-MOORE, 1910, 2 speeds, Millford radial castor sidecar, Cowey speedometer, good condition, head lamp and generator, many spares; £50.—Bagshaw, photographer, Doncaster.

HUMBER, 3½ h.p., 2-speed, free engine, in perfect condition, unpunctured hutt-enders, new March, 1911, done 1,500; buying 1912; £38; no offers.—Riding, 227, Crookes, Sheffield.

1912 Free Engine Triumphs in stock, cash or exchange; 1912 free engine B.S.A.'s in stock, cash or exchange; 1912 2-speed Bradburys in stock, cash or exchange; 1912 Ivys, etc., in stock.—Below.

20 Second-hands in stock for cash or exchange; send your requirements.—Stanley Garage, Westbrook St., Bolton. 'Phone: 1348.

IMMEDIATE Delivery of 1912 Scott, free engine Triumph, 6h.p. Royal Enfield, 8h.p. Zenith, 2-speed Clyno, free engine Rudge; all in stock; good allowance on any good make. — The Castleford Motor Garage.

LIVERPOOL Agency for Triumph and Matchless Motors, Hitchings, Ltd., 74, Bold St., Liverpool, the pioneers of motor cycling in the North. It will pay you to deal with Hitchings, Ltd., an old-established firm of highest repute.

HITCHINGS, Ltd., for Triumph and Matchless Motors; any make supplied on most favourable terms; exchanges arranged; absolute satisfaction and courteous service assured by dealing with Hitchings, Ltd., 74, Bold St., Liverpool. Established over 30 years.

RUBY-L.M.C., free engine, 3½ h.p., and Millford sidecar, 2 Dunlops, 1 Palmer cord, machine £51/10; sidecar, £9/9; buying larger; new Oct., 1911, perfect condition; what offers?—Woodhead, Woodlea, Norwood Crescent, Southport.

1911 Humber, 3½ h.p., 2-speed, accessories, spare belt, valve, detachable tube, etc., beautiful condition, also Millford castor sidecar, easily detachable, magnificent complete outfit; £43 the lot.—149, Stamford St., Old Trafford, Manchester.

2¾ h.p., Chater-Lea fittings, spring forks, free engine, accumulator and dry battery, h.b.c., B. and B. (1911), kick-up stand, actylene and electric lamp, low saddle, tools, 2 belts, tyres excellent, perfect condition; going abroad; sacrifice, £12/15.—115, Talbot St., Moss Side, Manchester.

REY

5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.
Telegrams: "Rey, Hampstead." Tel. 2678 P.O., Hampstead.

EXTENDED PAYMENTS
Taken on any Machine or Runabout.

NO EXTRA CHARGE ON MOST MAKES.

Following 1912 Machines for Immediate Delivery:

BRADBURYS all Models
RUDGES all Models
ZENITHS all Models
BATS all Models
TRIUMPHS all Models
F.N.'s all Models
SINGERS all Models
LINCOLN ELKS all Models
HUMBERS all Models
DOUGLAS, H. & G all Models

BEDELIA Cars.....(6 days), 7½% extra E.P. 59 Gns.
G. & N. Runabouts, 8 h.p. (in 6 weeks) " 87 Gns.
A.C., speed sociable type (in Feb.) .. " £87 10

Any other makes on application.

ABOVE MACHINES FOR IMMEDIATE DELIVERY. NO WAITING THREE WEEKS.

LINCOLN ELKS
From £28 10s.

Sole London Agent for the famous LINCOLN ELK. Finest value on the market for quality and reliability. All models on view and for immediate delivery.

TRADE SUPPLIED WITH VARIOUS MAKES. LIBERAL DISCOUNTS ALLOWED.

Second-hand Machines at Bargain Prices to clear.

BAT, 8 h.p., 1910, with Millford sidecar £40 0
HOBART, 2½ h.p., new 1911 ..... £29 0
F.N., 4 h.p., good order £18 0
F.N., 2½ h.p., 1911, two-speed £25 0
REX, 5 h.p., 1909, two-speed £25 0
LINCOLN ELK, 3½ h.p., 1911 clutch, and sidecar . £30 0
PRECISION, 2½ h.p., 1911, almost new £25 0
TRIUMPH, 1910, free engine £37 0
TRIUMPH, 1910, free engine, splendid order £38 0
TRIUMPH, 1909, splendid order £28 0
BRADBURY, 1911 ..... £30 0
BAT, 5 h.p., T.T., condition like new, bargain.... £45 0
ZENITH, 1911 3½ h.p. £39 0
ZENITH, 1911, 3½ h.p. £40 0
ZENITH, 1911, 3½ h.p. £42 0
TRIUMPH, 1910, F.E. £39 0
J.A.P.-CHATER-LEA, 1911, 2½ h.p., sp. F'ks., mag. £18 0
ZENITH, 3½ h.p., 1911, good order £38 0
TRIUMPH Standard, 1910, with clutch £29 0
LINCOLN ELK, 3½ h.p., and clutch £26 0

All Accessories included on S.H. at the price advertised.



THE
£4 - 10 REY Sidecar £3 - 10

With Hutchinson or Michelin 26 × 2½ Tyre and Tube, 30/- extra.

The famous "REY" EXHAUST WHISTLE now reduced to 12/6 each. Triumph standard type.

The "REY" Leather Belting outlasts two of any other makes. Price 2/- per foot.
Special Discounts to Trade.

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

REY

5, HEATH STREET, HAMPSTEAD

CARRIAGE PAID.

We now pay carriage on our sidecars to any address in the United Kingdom.

The following refinements are fitted to all models. No extra charge whatever:

1. **Kick-up Stand** for jacking up sidecar wheel for tyre repairs.
2. Large sized **Cocoanut Mat** fitted to foot of sidecar.
3. **Special Sidecar Lamp** (plated), and fitted to show white light at front and red light to rear.
4. **Extra Rapid** Quick Detachable Joints.
5. **We pay carriage to any town in the United Kingdom.**



Model de Luxe.—£6 5s.



Model C.—£7.

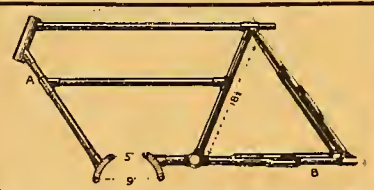


Model E.—£7 5s.



Model D.—£8.

All complete with Michelin or Continental tyres. Customers have option of car or round pattern mudguards. Discount to the trade.



MOTOR CYCLE FRAMES

We have a quantity of frames by well-known maker,
Price 32/6 each.
Rigid forks, **7/6** extra. Druid forks, **45/-** extra.
Enamelled and plated in first-class style.

TYRES. TYRES. TYRES.	
26 × 2¼ Hutchinson Heavy T.T. Covers, B.E.	25/-
Heavy Rubber-studded Covers, 26 × 2¼	18/6
26 × 2 and 26 × 2¼ Wired-edge Covers	12/6
Continental Rubber Non-skids, 26 × 2¼ or 2½	30/-
Continental, beaded, 26 × 2	18/8
Tubes, all sizes, guaranteed	9/6
New Butted Tube, 26 × 2¼	8/6
New Butted Tube, 26 × 2½	9/3
Special Heavy 26 × 2¼ Tubes, guaranteed ..	7/6

MISCELLANEOUS BARGAINS.

4½ h.p. Water-cooled Engine, vertical	£8 10
2 h.p. Simms Engine ;	25/-
New 4 h.p. N.S.U. Engine, perfect	£7 0
3½ h.p. Rex Engine, M.O.V.	£8 10
Mabon Clutch, fits twin Rex	85/-
Brooks B100 Saddle	9/6
Brooks B105 Saddle	11/6
Lycett's L109 Saddle (new)	11/6
Lycett's Atto, padded top (new)	14/6
Cocoa Fibre Sidecar Footmats	3/-
Amac Carburetter, h.-b. control	15/-
Ruthardt V Twin Magneto, 45° angle	£3 15
New Bosch D A V Twin Magneto, 48°	£4 4
Rex Pattern Belt Rim Brake (new)	6/6
Lycett's Carrier Toolbags (new)	7/6
1 h.p. Electric Motor, 230 volts	£7 0
Sidecar Lamps, show red light behind	7/6
Trailer, 26in. wheels	25/-
New Toolbags, 9 × 6 × 3½ in.	4/6
Sidecar Aprons, green or red, with studs ..	7/6
New Lycett's Tubular Carriers	4/11
Longuemare Carburetters	5/-

FARRAR'S MOTOR EXCHANGE,

19, 21, 23, 25, Hopwood Lane,

HALIFAX (Two minutes from G.P.O.)

Telephone 919.

MOTOR BICYCLES FOR SALE.

PHELON and Moore and Sidecar, complete, late 1910, £50; Millford castor wheel sidecar, £6/10; 15 guinea model Dursley-Pedersen 3-speed cycle, enamelled green, shop-soiled, £10; wanted, Clyno.—Bennett's, pawnbroker. Heckmondwike.

1911 Bargains.—Bradbury, shop-soiled, £39; 2¼h.p. 2-speed F.N., in splendid order, £32; 3½h.p. Premier, run 150 miles, £33; 14guinea Millford castor cane sidecar, hardly used, £11/5.—The Brighouse Motor Agency, Bailiffe Bridge, Brighouse

NORTHERN Depot, Ltd., "Everything Motorish," Leece St., Liverpool.—A.C. Sociable, in stock: A.C. Sociable, 3-seater, 3 weeks; Zebra 2-seater car, 2 weeks; Kerry-Abingdons, any model, 1 week; write for order forms; Avon tyres, F.R.S. lamps (all patterns), Xl'all saddles, Lyso belts, hand and foot muffs, mud screens, sidecars, petrol and luggage carriers, Jones, Cowey speedometers, etc.

GREAT Sale of motor cycles.—3½h.p. Rex, £7/10; 4h.p. Chater-Lea, magneto, spring forks, B. and B., £12; 3h.p. Triumph, £9; 1909 Douglas, £18/10; 1911 Kerry-Abingdon, £28; 5-6h.p. Rex, 1909, twin-cyl., free engine, and sidecar, £25, worth £40; 1908 Triumph, new condition, £25; P. and M., nearly new, 2-speed, free engine, £37/10; we have about 60 second-hand motor bikes in stock, consisting of 1907, 1908, 1909, 1910 Triumphs, prices from £15; several Bradburys, Singers, Moto-Reves; all machines sold are warranted in good order; sidecars from 50/-.—The Motor Cycle Exchange, 160, Young St., Sheffield.

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

1911 F.E. Triumph, in good condition; £38.—Bagnall, Hornsnglow, Burton-on-Trent.

1912 Standard Bradbury, in crate; best cash offer.—9,780, *The Motor Cycle* Offices, Coventry.

TRIUMPH, 1912, free engine model, just arrived, unpacked; immediate delivery; £55.—Moss, Wem.

ZENITH-GRADUA, 1911 model, 3½h.p. J.A.P., splendid order throughout, guaranteed, accessories; £42.—Moss, Wem.

NEW Hudson, 1911, new Sep., 3½h.p. J.A.P., Armstrong gear, special 2½ Palmer cord on back, ideal sidecar machine, guaranteed; 50 guineas.—Moss, Wem.

SCOTT, late 1911 model new August, very little used, tyres scarcely marked, guaranteed; 50 guineas.—Moss, Wem.

TRIUMPH, late 1911 (July), standard model, like new, guaranteed absolutely perfect; £40.—Mose, Wem.

NEW Shop-soiled 1911 3½h.p. Rover, Triumph free engine; big bargain, £45.—Washington, Middlewich.

1911 Tourist Trophy Triumph, practically unridden, with spares; £40 net cash—Rose, Birchill, Halesowen.

1912 Free Engine Bradbury in crate; cash offers.—Box No. 9,779, *The Motor Cycle* Offices, Coventry.

1912 Indian, 4h.p., brand new; cash offers wanted.—Box No. 9,781, *The Motor Cycle* Offices, Coventry.

TRIUMPH, 1911, free engine, brand new from makers, not been ridden; £50.—Gordon, printer, Congleton.

CHATER-LEA, De Dion, 2½h.p. cycle, requires one cover; bargain, £5/10.—100, Putney Rd., Handsworth, Staffs.

2½h.p. Twin Clement-Garrard, spring forks, studded 2 tyres, perfect condition; £12.—96 Overend St., West Bromwich.

TRIUMPH, 1910, engine perfect, new Michelin tyres, Dunlop belt; £35, quick sale.—H. Wardle, Whitchurch, Salop.

5h.p. Twin Sarolea, Chater-Lea frame, Mabon free engine, Bosch magneto; best offer.—Glenearle, Radnor Drive, Liscard.

1910 Twin Premier, 3½h.p., lamp, horn, tools, perfect throughout; £30, or offer.—42, Church St., Blaenau Festiniog.

RUDGE, T.T., July, 1911, very fast, winning mount, spares; £38; reason for sale, buying 1912 Rudge.—George Hill, Willenhall.

BRADBURY, 3½h.p., clutch model, new August, 1910, new Clincher Dreadnought tyres; £32/10.—Talbot, Proffitt St., Walsall.

BRADBURYS, 1912, free engine and 2-speed models, with all their superb improvements. — Paskells, Walsall. Motor Depot, Stafford St.

ZENITH-GRADUA, 1912, 3½h.p., the motor cycle that is "barred" from all hill-climbing contests it speaks for itself.—Sole agents for district, Paskells, Walsall. Motor Depot, 350, Stafford St.

ZENITH-GRADUA, 1911, 6h.p. twin, only arrived October; the one and only one for heavy work.—Paskells, 350, Stafford St., Walsall.

CLYNO.—Sole district agents for the hill-climbing Clyno; book at once for early delivery.—Paskells, 350, Stafford St., Walsall.

1912 MACHINES

In Stock for immediate Delivery.

SHALL WE QUOTE YOU FOR EXCHANGE?

3½ h.p. **RUDGE,** fixed gear	£48 0
3½ h.p. **HUMBER,** 2-speed model	£52 10
1912 3½ h.p. **BRADBURY,** single-speed....	£48 0
1912 3½ h.p. **BRADBURY,** two speeds	£55 0
1912 3½ h.p. **NEW HUDSON,** three speeds	57 Gns
1912 2¾ h.p. **NEW HUDSON,** three speeds	47 Gns
1912 2½ h.p. **A.J.S.,** two speeds, chain drive	47 Gns

LIGHTWEIGHTS.

1¾ h.p. **WOLF,** A.J.S. engine, magneto ..	£15 0
2¾ h.p. **CASWELL** vertical, Bosch, Amac, h.b. control	£12 0
1910 2¾ h.p. **MOTO-REVE,** magneto, Druids	£22 0
1910 2¾ h.p. **MOTO-REVE,** extra fine order	£23 0
1909 2¾ h.p. Twin **MOTO-REVE,** 50 × 70mm.	£20 0
1908 Twin **MOTO-REVE,** magneto Druids	£18 0

SINGLE-CYLINDER REXES.

1910 3½ h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p. 1908 Featherweight Rex, Bosch mag	£17 0

TWIN-CYLINDER REXES.

1911 5-6 h.p. de Luxe, M.O.V., two speeds	£44 0
1909 5-6 h.p. de Luxe, two speeds, fine ..	£34 0
1906 5-6 h.p. Twin Rex, Mabon clutch....	£16 10
5-6 h.p., Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, two speeds, M.O.V.....	£48 0
5-6 h.p. de Luxe, 1908, two-speed model..	£28 0
5-6 h.p. de Luxe, 1908, two speeds, special	£29 10
5-6 h.p. 1908 two-speed de Luxe, 1909 engine	£32 0

OTHER MAKES.

3½ h.p. **P. & M.,** late 1908, two speeds	£28 0
3¾ h.p. Twin **PREMIER,** fine machine	£25 0
3 h.p. **TRIUMPH,** M.O.V., h.-b. control ..	£17 0
5½ h.p. **N.S.U.,** 2 speeds and free engine....	£25 0
1911 2½ h.p. **MOTOSACOCHE,** magneto....	£27 0
1911 3½ h.p. **SINGER,** clutch model, done 200 miles	£43 0
3½ h.p. **L.M.C.,** 1910 model	£28 0
3 h.p. **SINGER,** Bosch, V belt drive, B.& B.	£16 0
3 h.p. **QUADRANT,** Bosch, B.& B., sp. forks	£18 0
3½ h.p. **QUADRANT,** h.b. control, sp. forks	£16 0
3½ h.p. **MINERVA,** Bosch magneto, Amac	£22 0

SIDECAR COMBINATIONS.

5-6 h.p. Clutch Model **REX** and new sidecar	£29 0
5-6 h.p. Two-speed 1908 **REX** and sidecar	£33 0
7-9 h.p Two-speed **REX** and sidecar	£53 0

All fitted with Magneto and Spring Forks.

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3 h.p. **REX,** vertical engine	£9 0
3½ h.p. **BROWN Bicar,** M.O.V., 26in. wheels	£12 0

£4 DOWN SECURES ANY OF THESE. BALANCE 6/- WEEKLY.

3½ h.p. **QUADRANT,** h.b. control, sp. forks	£16 0
3 h.p. **QUADRANT,** h.b. control, Bosch mag.	£16 0
3 h.p. **SINGER,** Bosch magneto, h.b. control	£16 0
3 h.p. **TRIUMPH,** M.O.V., h.-b. control ..	£17 0
1908 **MOTO-REVE,** magneto, Druids	£18 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

1¾ h.p. **WOLF,** A.J.S. engine, magneto	£16 0
1910 2¾ h.p. Twin **MOTO-REVE**.....	£22 0
1909 2¾ h.p. Twin **MOTO-REVE**.....	£20 0

CARS AND TRICARS.

5 h.p. **HUMBER** Car, two-seater, good goer	£22 0
5 h.p. **REXETTE,** Oppermann, 3 speeds ..	£18 0
Duocar, Bosch magneto	£45 0

MISCELLANEOUS BARGAINS.

Fulford Castor Wheel Sidecar	£5 0
Fulford Rigid Sidecar, 26in. wheel	£4 10
Montgomery Sidecar, 26in. wheel	£2 10
N.S.U. Sidecar, coach-built, 26in. wheel ..	£4 10

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane,

Telephone 919. **HALIFAX** (Two minutes from G.P.O.)

MOTOR BICYCLES FOR SALE.

HUMBER Midland Depot, wholesale and retail, 78, New St., Birmingham.—All 1912 models now on view; write for catalogue or give us a call. 'Phone: Central 7298.

HUMBER Motor Cycles.—Have you booked your order for 1912? If not, do so at once. We are specialists on these famous machines, and can therefore guarantee satisfaction.—Henry Garner, Ltd., 78, New St. T.A.: Dependable. Tel.: Central 7298, Birmingham.

1911 Free Engine Triumph, with numerous 1912 improvements, faultless condition, 50/- lamp, horn, 1in. Dunlop belt, and quantity spares; £46.—9,765, *The Motor Cycle* Offices, Coventry.

FOR Sale. 2h.p. Motosacoche, magneto, Whittle, all h.b.c., Clinchers, free engine, 1911 machine, and everything in first-class condition; £24.—Winteringham, Ltd., St. Andrew's St., Northampton.

REX, 5-6h.p., free engine, 1911, cone clutch, Bosch, B. and B., h.b.c. carburetter, handle starting, spring forks, condition equal to new; sell bargain, £36.—Davis, 81, Thornbury Rd., Perry Barr, Birmingham.

3½h.p. Wolf, B. and B., h.b.c., spring forks, tyres as new, a perfect mount, £14; 10h.p. twin Buchet, long, low, not done 600 miles. Amac, powerful machine, £20, or near offer; exchange.—Geo. Dawson, Fletton, Peterborough.

HUMBER Motor Cycle, 3½h.p., new from the works June, 1911, 2-speed, free engine, Dunlop rubber studded tyres back and front, footboards, splendid condition; owner gone abroad.—9,769, *The Motor Cycle* Offices, Coventry.

1911 Singer Lightweight, new Palmer tyres, Dunlop belt, spare valves, tools, horn, pump, does 125 miles per gallon, smart, reliable machine; approval willingly; offer nearest £27.—Vickers, Dunchurch Hall, Rugby.

BRADBURY, 1911, 2-speed, exceptionally fine condition, not scratched, several spares, 40 guineas; Rudge, 1911, Cowey, Autoclipse, numerous spares, 36 guineas; 2h.p. Minerva, £7/10.—Grocock, Horncastle Rd., Boston.

1911 Douglas, perfect condition, horn, N.A.B. spring seat-pillar, with Brooks special padded saddle, automatic back rest, mirror, watch, rubber grips, many spares, all tools; expert examination invited; owner bought car.—Severn, Olive Villa, Skegness.

3h.p. Motor Cycle, Kelecom engine, only recently re-bored and new piston fitted, re-bushed, new coil and accumulator, Amac, h.b.c., footboards, low position, Bates tyres, as new, in splendid running order; bargain, £10/10, or near offer.—Findlay, Market Place, Market Deeping, Lincs.

LADY'S Douglas, 2-speed, free engine, footboard, lady's 1911 machine, in perfect condition, new October last; this was the machine that obtained first-class certificate in the A.C.U. October Quarterly Trial, one of the few that climbed Farlow Bank; price £42, cost £50.—Miss N. Hough, Glenthorn, Penns Lane, Erdington.

SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

1912 New Triumphs in crate.—Triumph Agent, King's Lynn.

1912 Indian, 7h.p.; delivery from stock; £67.—P. J. Howard, Wisbech, Cambs.

1910 Clutch Triumph, horn, lamp, spare valve, 1in. Lyso belt; £35/10.—Parker and Son.

1911 Standard Bradbury, new October last, excellent condition; £36.—Parker and Son.

1911 T.T. Roadster Triumph, perfect condition everywhere, horn, mirror, spare valve, etc.; £41.—Parker and Son.

1911 3h.p. Bat and Bat Sidecar, P. and M. 2-speed, new Dunlop on rear, new 1in. Lyso belt, speedometer, 2-head lights, horn, mirror, many spares, perfect condition, new May last, ridden only 2,000 miles; cost £96, accept £60.—Parker and Son, St. Ives, Hunts.

2h.p. Iris Motor Cycle, Dunlop tyres, low, perfect running order; £5/10.—G. Seaman, Hunstanton.

1912 Bradbury, free engine model, in stock; first cheque £54/10 secures.—Willmott Bros., Norwich.

1912 Rover, free engine model, £55/5; also 2 h.p. twin Centaur, £42; both in stock.—Willmott Bros., Norwich.

BRADBURY, 3½h.p. standard, perfectly new in crate; £40.—Bailey, jeweller, Soham.

BAT, 3½h.p., 1911 model, covered 1,000 miles, superb condition; going abroad.—Denton, Pitt Club, Cambridge.

TRIUMPH, 1910, new tyres and belt, perfect condition throughout; nearest £35.—Richards, Stukeley, Huntingdon.

1912 Singer, 2¼h.p., only run 100 miles, perfect condition, Dunlops; £35. — Bush, Pembroke, Cambridge.

B.S.A.! B.S.A.! B.S.A.! — Early deliveries of all models of these celebrated machines; second-hand machines part payment.—A. F. Garnham and Co., sole agents, Ipswich.

The New L.G.B. Regulations do not apply to

The Famous Garner M.C. Alarm.

It is recognised as the most effective, beautiful, persuasive alarm on the market.

Price, N.P.,
12/6
Black Plated,
13/6
Postage 5d.



Stocked by the best factors and dealers throughout the kingdom.

World-wide Reputation.

Read this. Then kindly order.

Park Street, E. Cowes,
14/2/12.

Gentlemen,—Will you please forward per return one Garner Exhaust Whistle.

I had one on my previous machine, and find I cannot do without it on my present mount. I might say IT is IT. I want Whistle to fit a Zenith.

Yours faithfully,
B. P.

Messrs. Garner, Ltd.

Sole Makers & Patentees—

HENRY GARNER, Ltd.,
Moseley Motor Works,
BIRMINGHAM.

MOTOR BICYCLES FOR SALE.

BEDFORD.—Singer, 1911, free engine, exceptionally fast machine, touch 60, splendid condition; bargain, £40.

BEDFORD.—Triumph, 1911, free engine, good as new, not done 3,000 miles; £46.

BEDFORD.—Bradbury, 1911, standard, perfect condition, had very little use; bargain, £38.

BEDFORD.—Mills-Fulford rigid sidecar, new December, 1911, Dreadnought cane body; wife riding; cost £13/10, accept £10, bargain.

BEDFORD.—Triumph, 1909, standard engine, in perfect condition; £32.

BEDFORD.—Douglas, late 1911, 2¾h.p., good as new; owner buying sidecar machine; £33.

BEDFORD.—Triumph, 1909, engine just been overhauled, good condition; £30.

BEDFORD.—Bradbury, 3h.p., h.b.c., accumulator ignition; accept £10.

BEDFORD.—N.S.U., 2-speed gear, h.b.c., magneto ignition, new tyres; £15.—Apply, J. Crawley St. Mary's Motor Cycle Depot.

2½h.p. Minerva, accumulator, long handle-bars, low, in real good running order; £13.—Horn, High St., Heacham.

DOUGLAS, 1910, engine just returned Douglas, tyres excellent condition; £27.—Robinson's, Green St., Cambridge.

1911 Triumph, standard, 3½h.p., engine excellent, £39; standard Triumph, 1909 pattern, £29.—Robinson's, Green St., Cambridge.

CLYNOS, Clynos, 1912, 2-speed (the sidecar special); delivery March; £68/5. — Robinson's, Green St., Cambridge.

DOUGLAS, kick start, 1912, model K, in stock; £50; no waiting.—Robinson's, Green St., Cambridge.

1909 Triumph, standard model, tyres and engine first-class; £29.—Robinson's, Green St., Cambridge.

1911 Premier, free engine, Dunlops, quite new; to clear £46.—Robinson's, Green St., Cambridge.

TRIUMPH, free engine, late 1910, lamp, horn, speedometer, little used; £40.—Robinson's, Green St., Cambridge.

MINERVA, 3½h.p., Chater-Lea frame, good running order, tyres good; first cheque £10 secures.—Dunn, Abbeygate St., Bury St. Edmunds.

1912 L.M.C. Motor Cycles; immediate delivery; trial runs and interviews by appointment.—W. E. Sneezum, 14, Fore St., Ipswich. Sole agent Ipswich and district.

1911½ 3½h.p. Matchless, in good order, lamp, all accessories, new back tyre, Mabon clutch; £38, or offer.—Jackson, 20, Portugal Place, Cambridge.

2h.p. Minerva, new tank, pump, and Hellesen, requires tank levers and silencer; sacrifice, £3/10, must sell.—Richardson, 875, Woodbridge Rd., Ipswich.

REX, 5h.p., 1909-10, splendid condition, 1911 B. and B. carburetter, Bosch, all spares and accessories; bargain, £25.—17, Cardiff Rd., Luton, Beds.

PREMIER, 3½h.p., 1911 model, brand new, in crate, £37/10; similar machine, free engine, £43, not unpacked.—T. H. Nice, Ipswich and Bury St. Edmund's.

NEW Hudson; see latest models.—Agents for Suffolk, T. H. Nice, Ipswich and Bury St. Edmund's.

MOTOR Cyclists purchasing 1912 Premiers, Humbers, B.S.A., or New Hudson machines, will be allowed exceptional prices for second-hand magneto machines if ordered without delay from T. H. Nice, Bury St. Edmund's, Ipswich, or Depots.

DELIVERY from Stock. — 6h.p. Zenith, 3½h.p. Zenith, Bat 2-speed 3½h.p., 2¾h.p. Motosacoche, 4½h.p. Excelsior. — Sole agents: Knaster and Cox, Cambridge.

MORGANS, Morgans,—4 left; best offers.—Knaster and Cox, Cambridge.

1911 8h.p. Bat, new in August, £45; 1911 F.E. Triumph, £40; 1909 3½h.p. Excelsior, £22; 3½ h.p. W. and P., magneto, £13: 1¾h.p. Motosacoche, £18, magneto; 3 tricars, 2-speeds, Rover and Humber; must clear; best offer.—Knaster and Cox, Cambridge.

3½h.p. N.S.U., magneto, recently overhauled by makers, perfect condition, spares, good tyres, Riches tubes; accept £20, or near offer.—J. Riches, 22, Howbury St., Bedford.

2¾h.p. Grandex-Precision, new August, 1911, in splendid condition, not done 500 miles, Palmers, also spare studded Warwick, new; £25.—W. E. Hart, Bury St., Stowmarket, Suffolk.

LATE 1911 3½h.p. Rover, free engine model, brand new December 15th last, been used few times only, not scratched, everything like brand new, classy machine, horn, lamp, tools; £46/10.—Wallis, grocer, Hills Rd., Cambridge.

1912 L.M.C. Motor Cycles, 3½ and 4h.p., immediate deliveries; all models in stock; catalogue and best terms.—W. E. Sneezum, 14, Fore St., Ipswich, sole agent Ipswich and district, including Felixstowe, Walton, Woodbridge, Melton, Wickham Market, Framlingham, Hadleigh, Needham Market, etc. Trials and interviews by appointment.

MOTOR BICYCLES FOR SALE.

SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

3h.p. Roc, low, h.b.c., in good order; £15.—193, Cowbridge Rd., Cardiff.

BRADBURY, 1911, as new, Autoclipse lamp, horn, watch, tools; £35.—Edmund Williams, Bromyard.

RUDGE, 1911, T.T., F.E., in excellent running condition; £42.—Passey and Hall, Ltd., Ross, Herefordshire.

6h.p. Zenith-Gradua, Sept., 1911, done under 700 miles, perfect as new; £49/15.—Clarke's Garage, Port Talbot.

1910 Phelon and Moore, 2-speed, re-enamelled and overhauled, new Kempshall back tyre; £38.—Below.

4-CYL. F.N., just overhauled and re-enamelled, nearly new, Palmer cord tyres; £18/10.—Below.

MOTO-REVE Twin, 1911, as new; cost £45/3, £28/10.—Below.

DOUGLAS Twin, 1910, reliable; £23/10; and many others.—Clarke's Garage, Port Talbot.

DELIVERY from stock, Zenith, standard Triumph, T.T. Triumph, F.E. Triumph, T.T. Rudge, 3½h.p. Singer, and B.S.A.—Clarke's Garage, Port Talbot.

FOR Earliest Deliveries of Triumph, Humber, Enfields, Singer, Premier, apply at once, Griffiths, Cycle Emporium, Llanelly.

DOUGLAS, 1910, tyres as new, B201 saddle, lamp, generator, horn, tools; bargain, £22.—Passey and Hall, Ltd., Ross, Herefordshire.

2h.p. Minerva, good running order, B. and B. carburetter, h.b.c., spring forks, lamp, horn; £9/10.—Planet Motor Works, Newport, Mon.

ZENITH and Scott Motor Cycles.—Sole agents for Glamorgan and Monmouthshire (excepting Port Talbot): Burrelli, Ltd., 2, Albany Rd., Cardiff.

1912 6h.p. Zenith, actually in stock, immediate delivery.

SCOTT, 3½h.p., late 1910, guaranteed in good condition; £58.

3½h.p. Lincoln Elk, 1912, latest variable jet, B. and B. carburetter, waterproof Bosch magneto, etc.; £34.

WRITE for list of further machines for sale to Burrelli, Ltd., 2, Albany Rd., Cardiff.

1910½ Triumph, perfect condition, P. and H. lamp, Jones speedometer (trip mileage), exhaust whistle, spares; £38.—Williams, 67, Gwydr Crescent, Swansea.

TRIUMPH, 1909, for sale, in splendid condition, almost new, steel studded back tyre, new belt; price £26/10.—Jones, Victoria Garage, Milford Haven.

RUDGES, 1912, free engine, £55; Humber, 3½h.p., 2-speed, new August, 1911, £38; F.N., good condition, £12; Vindec Special twin, £25.—Bladder, Worcester.

T.T. Humber, 2¾h.p. twin, 3 speeds and clutch, late 1911, condition as new, spare roadster handle-bar, horn, etc.; cost £54, accept £37.—Whorton and Hartill, Motor Depot, Dudley.

TRIUMPH, 1909 (September), new rubber belt, Clinchers, numerous spares, Lucas Acetaphote, complete, perfect; £30, or nearest; approval willingly.—Tregaskis, Taffs Well.

CLYDE, 3½h.p., magneto, h.b.c., B. and B. carburetter, Dunlops, enamelled grey, 2 spare tubes, lamp and generator; bargain, £12/10.—Blundell, Burcot Grange, near Bromsgrove, Worcestershire.

TRIUMPH, clutch model, August, 1911, as new, £45; 1909 Triumph, £29; 1910, £34; Arno, £20; Lincoln Elk, with Mabon, £24; twin Enfield, £20; twin Moto-Reve, £16; clutch Kerry-Abingdon, quite new, £44; B.S.A., clutch, nearly new, £45; offers invited.—Crannore, Redditch.

SECTION VII.

Gloucester, Oxford, Buckingham, Berks Wilts, and Hants, and Channel Islands.

1912 2¾h.p. New Hudson, 3-speed, just delivered; cash offers.—Bennett, West St., Fareham.

TRIUMPH, 3½h.p., 1908, magneto, all accessories, excellent condition; £29.—7, Fleet St., Swindon.

1911 New Bradburys, standard and 2-speed models; bargain prices, cash offers. — Ginger, Motors, Banbury.

TRIUMPH, 3½h.p., splendid condition; £25; spares.—Smith, 3, Albion Terrace, Park Rd., Farnboro', Hants.

TRIUMPH, 1910, standard, excellent condition, new Palmer back wheel; honest value, £30.—Layton's, Bicester.

TRIUMPH, 1911, standard, done 2,000 miles only, and not been used last 5 months; £38.—Layton's, Bicester.

TRIUMPH, 1911, T.T. roadster, not done more than 1,000 miles, as new; lucky if you get it; £40, or near offer.—Layton's, Bicester.

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MOTOR BICYCLES FOR SALE.

1912 Clynos, in stock, for immediate delivery.—Special agents, Morris Motor Cycle Garage, Oxford.

1912 New Hudsons, immediate delivery of model 3B.—Sole district agents, Morris Motor Cycle Garage, Oxford.

1912 Models, all makes, for earliest possible delivery; place your order with us, and avoid disappointment.—Morris Motor Cycle Garage, Oxford.

1911 3½h.p. Free Engine B.S.A., as new, not done 30 miles, Dunlop studded tyres; great bargain, £45.—Below.

SECOND-HAND Machines, all makes, in excellent condition, at lowest possible prices; our list is bound to interest you, if you want a bargain in a second-hand mount.—Morris Motor Cycle Garage, Oxford.

PHELON-MOORE, 3½h.p., 2-speed, free engine, excellent condition, spares; £38.—Dominy, Jewry St., Winchester.

CLYNO, 1911, new, 2-speed, chain drive; sacrifice £58 or near offer: going to India.—Motorist, 17, Upton Park, Slough.

IMMEDIATE Deliveries.—Write Gibb, Gough, and Son, Gloucester, sole agents for Douglas, Bradbury, Premier, Rover.

SAROLEA, 6h.p. twin, 2¼ nearly new tyres, B. and B., magneto, recently enamelled, adjustable pulley; £30, or offer.

3½h.p. 1909 Rex, low, long handle-bars, magneto, B. and B. carburetter, tyres nearly new, very fast, reliable machine; £15.

2¾h.p. Kerry, B. and B. carburetter, coil, accumulator, engine been bushed, all in perfect condition; £10.—Reply, Watson, Farnboro' St., Farnboro', Hants.

CHATER-LEA, 3½h.p. Fafnir, B. and B., h.b.c., spring forks, spares, fast, £12/10; sidecar, 45/-.—59, Banbury Rd., Oxford.

RUDGE and Bradbury Models, for prompt delivery; trial runs; exchanges entertained; send for lists.—Agent, Barnes, Colnbrook, Bucks.

TRIUMPH, very little used, as new, 2in. belts, Palmer cords, lamp, horn, mirror, watch, spares, and tools; sacrifice, £35.—Horwood, Mortimer.

1908 Douglas, perfect condition, recently overhauled, new parts fitted, usual accessories; only £14.—Kensington Motor Garage, Clifton, Bristol.

IMMEDIATE Delivery from stock 1912 3½h.p. B.S.A., free engine, £56/10; 1912 2¾h.p. Singer, £39.—Davenport Vernon and Co., High Wycombe.

3h.p. Very Low Midget Bicar, excellent tyres, perfect running order, h.b.c.; £8; good gramophone part, or offers.—Goodall, Littlewick, Maidenhead, Berks.

1911 Clutch Triumph, speedometer, suit case, new belt, tube in case, lamp, etc., new condition; nearest £47.—Horwood, Eastcote, Twyford, Berks.

1909 Standard 3½h.p. Triumph, excellent condition, engine just overhauled, re-bored, new piston, tank re-painted, also 1911 handle-bars; £32, or consider exchange twin.—Dawson, 9, Glouceter Terrace, Swindon.

1912 Matchless Motors: early deliveries 6h.p. clutch model, 60 gnineas; 1912 Hazlewood motors from stock, 3 speeds, free engine, 47 gnineas; catalogues, particulars free; 1911 Rudge, July, 320 miles, as new, spare valves, tools, £40.—Balfours, Motor Works, Banbury.

HUMBER, 1911, 3½h.p., 2-speed, best Mills-Fulford sidecar with luggage grid, new Kempshall back tyre, spare retreaded Clincher (unused), Autoclipse lamp, Whittle belt, ridden under 2,000 miles, always kept in excellent condition; buying car; £47/10. — Robinson, Windsor Terrace, Clifton, Bristol.

SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

1912 Bradbury, chain drive; £59/10.—Below.

1912 6h.p. Zenith; £70/7.—Below.

1912 Win-Precisions, 2¼, 3½, 4¼ and 6h.p; cash or easy terms, £2 a month.—Below.

REX, 3½h.p., and sidecar, B. and B.; £12/10.—Below.

BROWN, 2¾h.p., just overhauled; £7.—Below

LIGHTWEIGHT, 2¾h.p., just overhauled; £7/10.—Below.

LATE 1911 Win-Precision, Roe 2-speed, handle starting, Dunlop specials, not done 600 miles; £45.—Bull's Motor Mart, Southchurch Rd., Southend-on-Sea.

B.S.A. 1912 2-speed Models in stock.—Rivett, Leytonstone.

B.S.A. 1912 Free Engine Models in stock.—Rivett, Leytonstone

B.S.A. 1912 Fixed Engine Models in stock.—Rivett, Leytonstone.

MOTOR Supplies.—Up-to-date stock at Rivett's, 236, High Rd., Leytonstone.

THE MOTOR CYCLE

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Contributions to Club Prize Funds.

SECRETARIES of motor cycle clubs will be more than usually interested in the latest decision of the Manufacturers' Union regarding the method that this body proposes to adopt for dealing with trade contributions to club prize funds. Applications to makers from club secretaries for contributions to their prize fund will be referred to the Secretary of the Union, who will point out that the members of that organisation have pledged themselves to support only those events which are restricted to *bona-fide* private owners, members of the organising club or neighbouring clubs.

Contributions to ten of the most important events of the year will be made without the restriction regarding private owners, but no contribution will be made to any open event which is not authorised by the Auto Cycle Union, and such contributions will only be awarded to whole day events, and will not apply to hill-climbs and other competitions which take place in the afternoon.

The above arrangement will secure uniformity in the distribution of prize funds, but it will prevent many clubs from holding open competitions unless they are willing to find all their own prizes without depending on the trade for assistance.

Many clubs run their yearly competitions, and particularly their closed events, without applying to the trade for donations, but in the case of big open events it is customary to look for such help.

The trade view is that open competitions are being overdone, and that no good purpose is served by the same trade riders competing against each other practically every week. This is a view which we have urged on many occasions, not because we wish to disparage the trade riders in the slightest degree—in the majority of cases they are excellent fellows and thorough sportsmen—but on account of the gradually growing discontent among ordinary club members that they have no chance against expert trade riders when they are competing on level terms.

In course of time club life must suffer if the same coterie of riders win all the best prizes. If the manufacturers' proposals stimulate competition among club members it will be a good thing.

At the same time there is another view of the question which should not be overlooked, *i.e.*, whilst the Manufacturers' Union confines its attention to conditions which are purposely directed towards encouraging the ordinary member to take more interest in his club events it will render good service, but if its efforts go further and tend to curtail the number of competitions, the reverse will be the case. However, we are assured that its present most laudable desire is to encourage club life and competitions amongst club members only.

The above scheme, as regards makers of complete machines, is already in operation, and the Manufacturers' Union, through its secretary, is now in communication with all the motor cycle tyre and accessory manufacturers, who have been informed of the decision arrived at by the machine makers' section, and asked for their views on the question with an idea of similar conditions being arranged in their case when applications are made to them for contributions to club prize funds.

Of course there are a few clubs in the country which will not be affected in the slightest by the scheme outlined above, as they never solicit in any direction for contributions to their prize funds.

OUTSIDE FLYWHEELS.

AT the last Olympia Motor Cycle Show there were two or three new-comers exhibited with outside flywheels, and it is to discuss the pros and cons of this design that the following article is penned.

The points usually raised against the outside flywheel are mud-throwing, the difficulty of fitting an adjustable pulley, wear on bearings, and, occasionally, the effect of gyroscopic action on the steering. This last may be dismissed without going into details, as, after riding various outside flywheeled machines for the last seven years, the writer has never once noticed this trouble on any of the several makes which he has had under observation.

It is true that the flywheel is apt to throw mud, but not to the extent that might be imagined, for the rim speed is so high that it cannot pick up much mud; besides this, the wheel can be neatly protected from mud by a light underscreen.

The Adjustable Pulley Difficulty.

The difficulty of fitting an adjustable pulley has been a stumbling block for some time, but this trouble is not insuperable; in fact, during the past year an experimental machine has been on the road fitted with an outside flywheel and an adjustable pulley, which is considerably simpler to adjust than the average pulley as at present fitted. At the time of writing details are not obtainable for publication, as the patents are not yet completed. Wear of crankshaft bearings is a point very freely raised, but experience of well-made machines tends to prove that, if properly designed, the crankshaft bearings on an outside flywheeled engine last at least as long as those with inside flywheels. Quite recently I saw an outside flywheeled engine stripped after more than four years' hard work, and the crankshaft bearings were apparently as good as the day they were put in.

Now, the advantages of the outside flywheel are many. Firstly, a flywheel with a larger diameter can be employed and the weight placed well in the rim. This allows the total weight to be considerably reduced, though the flywheel effect is the same. Secondly, there are no internal wheels to churn up the oil, and consequently throw it away from the big end bearing. Thirdly, with this design split big ends and one piece crankshafts are usual, both of which have decided advantages, for the split big end can be easily taken up when wear occurs, while a one piece crankshaft cannot be erected out of line if it is turned out correctly in the first instance.

A Few Instances, Ancient and Modern.

From very early days we have had successful outside flywheeled machines, and the old brigade will remember the Clément-Garrard and 2¼ h.p. Buchet, both of which were very good machines in their day. In more recent times, the twin Premier made two or three of the fastest laps in the Tourist Trophy of 1910. The little Douglas has earned for itself a great and well-deserved reputation. The sweet running F.N. has had an outside flywheel for years. And among promising newcomers we have the Veloce and Levis, also the Wooler, of which we hope to hear more later.

Extremely good running at low speeds is a feature of all well-designed outside flywheeled engines, but it must be remembered that the size and weight of the wheel can be considerably overdone, and when this is the case the machine will not accelerate quickly.

I cannot refrain from mentioning a short conversation overheard at the 1910 motor cycle show. A pseudo-technical customer was complaining of the skin friction caused by an outside flywheel revolving at high speed in the air. This struck the poor tired salesman (who is by no means an unknown figure in the motor cycle world) as going rather a long way to find trouble, and he remarked, "Yes, sir, but we can easily fit a lubricator for you."

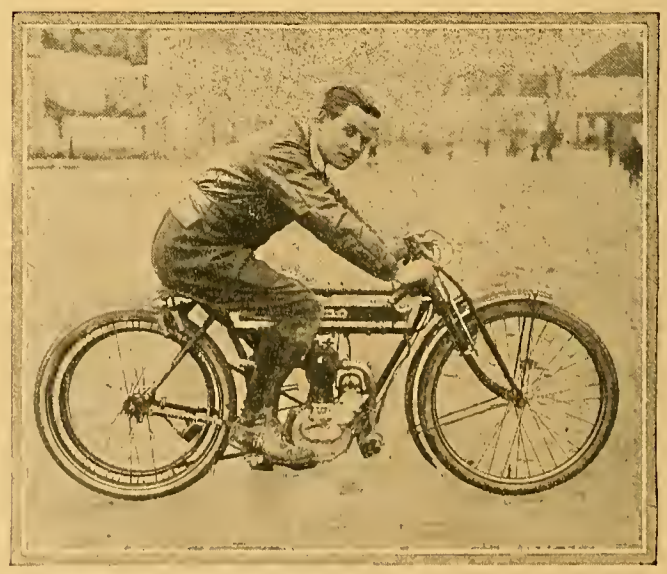
Apparently there is a popular prejudice against the outside flywheel, as many of the arguments brought against it have little more in them than the above.

This article is not intended to be a wholesale condemnation of the usual type of engine, but merely to try and convince readers that, because a machine is fitted with an outside flywheel, it is not necessarily a freak, but may have many good points. Surely car manufacturers have reasons for placing the flywheel on the end of the crankshaft and *outside* the chamber.

Oil Throwing.

While I write I am reminded of another alleged trouble, *i.e.*, the throwing of oil from the main bearings. After constant use of both types of engine, I can truthfully say that I have never found one type worse than the other in this respect, and I cannot see why the outside flywheel should be accused of this vice. In almost every instance the pulley covers the end of the crankshaft bearings, entirely protecting the flywheel from oil ejected therefrom. On the other hand, outside flywheeled engines are usually fitted with a long plain bearing, which is obviously a better oil-retainer than a ball race, especially if fitted with felt caps and other devices usually employed to make a reasonable oil joint where ball races are used.

UBIQUE.



Rox G. Mundy (2¼ h.p. Singer), second in the lightweight class of the hill-climb at Montanglaust, Franco, last week. Mundy had collecting pipes fitted to both inlets of the carburetter, but very little if any improvement in speed resulted thereby.



The Future of Engine Design.

By A.M.I.C.E.



SPEAKING to a friend recently, I asked his opinion of the future of the motor bicycle. Jestingly, but at the same time expressing his serious opinion, he replied, "There isn't to be a future," and argument failed to move his conviction that the motor cycle would be improved out of existence.

The two-wheeled, dirty, skiddy, loathsome abortions—to mention a few of the adjectives, etc., used by this epicurean motor cyclist—will die the death. Fortunately, the motor bicycle is anything but the black thing he paints it, and my friend's remarks may be attributed to a mind diseased, due to his having been luxuriating in an up-to-date high-powered limousine car, watching someone else do the driving and other work. He *is* like that. Nevertheless, I fancied I detected a gleam of sanity when he said with absolute conviction, "This (1912) is the last year of the single-cylinder. The twin is coming." And I wondered. Changes are undoubtedly pending, and whilst manufacturers of single-cylinder engines are increasing, and singles of large capacity are not now uncommon, there is an under-current of desire for a more uniform torque, and smoother action generally.

Why the Demand has arisen.

There is not the slightest doubt that this coming, in fact this present demand, is largely due to the inferior design of many single-cylinder engines, slavish copying of outline with ignorance of principles, and in other directions making every desideratum subservient to the demand for efficiency, power, and compactness. The result is seen in the tale of transmission and tyre troubles, the demand for expensive speed gears, and the call for more cylinders, to which the man in the street lends his voice, imagining a crowd of little evils better to be chosen than one great one.

The T.T. Races and various Brooklands events go to confirm his opinion, because in these he sees the result of greater power and not necessarily higher efficiency, as he imagines. His call must, however, be heard, and whether it will be answered by the multiplying of cylinders, or a correction of inferior design in the single, remains to be seen; doubtless, as with most things, it will be a case of the survival of the fittest, but fitness in this case will be measured not alone by depth of pocket, and length of patience, necessitated by the greater cost and tuning needs of the multi-cylinder, but by the demands of utility and circumstance.

Were fitness to be decided by efficiency alone, the single-cylinder would remain the monarch of motor cycles, for an increase of cylinder dimensions within an extremely wide range has shown an increase of thermal efficiency, and in the larger engines higher mechanical efficiency.

A well-designed single with correctly-shaped and dimensioned valves and ports is one of the most efficient power producers known, and possibly always will be. In the future it may be made to run so smoothly, and with so even a torque compared with the average motor cycle engine of to-day, that the rider and machine need suffer no detriment and realise no disadvantage in its employment.

Bearing this in mind, one wonders if there is any real *need* for multi-cylinder engines, and if the demand for luxurious riding would not be more wisely provided for, by improvement of the single with its efficient simplicity, than by the multiplication of parts, with the additional cost and complication. But there will always be those to whom luxury appeals more than any other feature, and they will say: "If a correctly designed single-cylinder will give us so large a measure of our requirements, would not a similarly well designed twin do better still?" and we have to answer that in many respects it would. Although losing in simplicity, and in both thermal and mechanical efficiency, yet the twin will lend itself to a greater power development for several reasons. As power will be transmitted with less shock, lighter frame parts may be used, lighter transmission and speed gears, and possibly a lesser call upon the nerve forces of the rider, owing to the smaller waves of vibration.

Another Aspect of Chain v. Belt Drive.

I am reminded of two machines identical in every respect save transmission—one was belt, the other chain drive through a clutch. It was absolutely impossible to *feel* any difference in the machines, but a run of 100 miles with the chain drive fatigued one as much as a far greater distance on the belt-driven machine. I could only attribute this to the unrealised tremor or vibration caused by the chain links striking the teeth, affecting super-sensitive nerves. The heavier reciprocating parts of the single, not forgetting the larger valves, stronger springs, etc., all more or less unbalanced (although possibly unrealised), will tell their tale of vibration to a greater extent than the smooth running twin which should, therefore, be less fatiguing. This, of course, merely from a comparative standpoint, the fatiguing effects due to vibration of a modern engine usually being negligible.

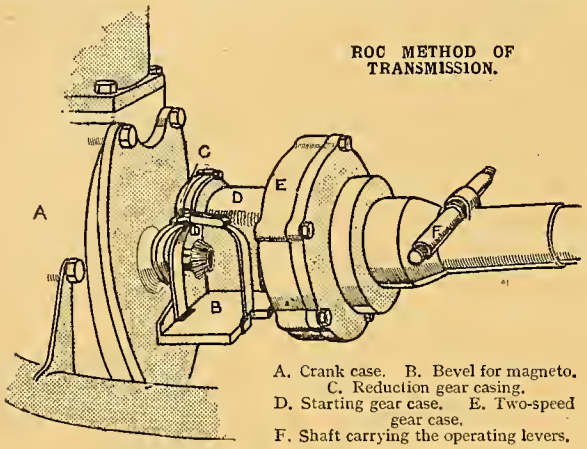
The smooth running twin will therefore be less fatiguing, although developing more power than a single of equal capacity. The bearings of a twin will have a longer life, but the engine will not maintain its tune so well.

In spite of the drawbacks one is bound to conclude that the smooth humming glide of the 500 c.c. twin will be heard in the land. 1913 will see many on the road, but for purely utility purposes it will not, in my opinion, oust the single for many years to come.

A Run on the Roc Tricycle.

WE recently spent a most interesting morning in the Roc works and on the road in the latest pattern tricycle made by this firm.

Mr. A. W. Wall is a great believer in something more than a motor cycle and less than a car, but



ROC METHOD OF TRANSMISSION.

A. Crank case. B. Bevel for magneto. C. Reduction gear casing. D. Starting gear case. E. Two-speed gear case. F. Shaft carrying the operating levers.

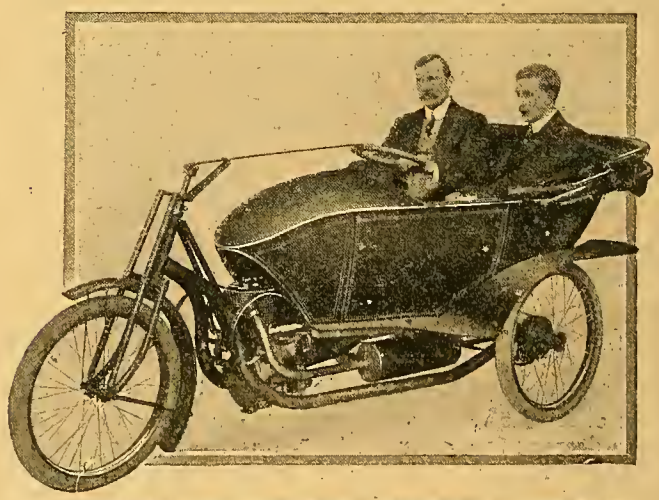
insists on the necessity of two driving wheels and a differential gear. As the tricycle stands in its present redesigned form, it is a neat and light device on quite unusual lines.

The frame consists of two large diameter tubes swept downwards from a heavy motor cycle type steering head and fixed rigidly to the rear axle sleeves; two stout tie-rods, or rather tubes, slope backwards and downward from the top of the head to a cross member.

The engine, which has a bore and stroke of 90 × 96 mm., is held rigidly in the frame from four points, and carries at the back an aluminium casting which forms a casing containing a spur gear reduction from crankshaft to counter-shaft, a geared up bevel starting device, and a two-speed gear similar to the Roc motor cycle gear, giving a 40% reduction on the low; besides this, the casing carries the magneto, which is bevel driven from the crankshaft. The whole forms a neat and substantial power unit. From the gear box a propeller-shaft conveys the power to the rear live axle by means of bevel gears and a differential of the spur type. The propeller-shaft is enclosed in a rigid tube, which acts as an additional frame stay and does away with the necessity of universal joints. The front forks are of the motor cycle type, but extra strong, and steering is accomplished by means of a long flat steel tiller, which absorbs road vibration. On this chassis is a comfortable two-seated egg-shaped body slung on long laminated springs.

On the road we found the machine steady in grease and particularly well sprung. The engine seemed to have plenty of power, and the foot control made traffic driving a pleasure, while the brakes, which are of the band type on the rear hubs, are powerful and smooth in action.

We found all control levers come conveniently to the right hand, and the exhaust lift arranged so as to be gripped by the left hand, while the starting handle is revolved from outside by the right hand. The body is comfortable, and silence is a feature throughout. In all these points there is evidence of forethought and careful experiment.



The redesigned Roc tricycle, which has an air cooled engine and is gear driven.

The Motor Cycle in Germany and Austria.

AS yet, notwithstanding reports to the contrary, there is little or no evidence of the likelihood of an early revival of the motor cycling sport in Germany. The Berlin movement, to which we recently referred is, at best, but significant of a desire to raise the sport from the low level to which it has fallen by degrees.

One of the few definite programmes for infusing life into German motor cycling has been formulated by the Magdeberg branch of the German Cycling Federation, whose chief interest, we may point out, centres on the push-bicycle. The branch invites its motor cycling members to a mileage competition between March 1st and the second Sunday in September, both dates inclusive. Competitive touring is, however, restricted to Sundays and public holidays, and competitors must bind themselves to cover at least 1,250 miles (2,000 kilometres) They will receive charts and checking cards from the branch's touring superintendent.

Austrian Club's Programme.

Turning to Austria, we note a greater activity, the Allgemeine Motorfahrerverband, whose headquarters are in Vienna, having already drawn up an interesting programme, including the following four meetings.

May 26th.—International hill-climb on the Riederberghöhe, open to racing and touring machines.

June 2nd.—Races on the St. Pölten trotting course.

June 30th.—Races in the Neuenkirchner Allee.

July 14th.—Reliability run, round the Semmering.

The season will probably terminate with a competition on the Semmering itself, somewhere about the middle of September. This hill, by reason of its length, tortuousness, and steepness, affords plenty of scope for expert and daring riding.

Occasional Comment

Cost of Running a Motor Cycle.

I have received a number of frenzied protests from various readers against the estimates of motor cycling expenses perpetrated by a contributor to a Sunday newspaper, who admits he has abandoned the pastime. I think the extraordinary increase of the hobby must be regarded as the most satisfactory answer to any exaggerations of normal experience. For myself I can only say that I have been a strenuous rider since the first days of the era, and that I have never been confronted by a single large bill, other than the invoice for the machine itself. On the rare occasions when some defect of design or workmanship has necessitated extensive repairs, the cost has invariably come under the makers' guarantee, and I have jogged along very comfortably from week to week and from year to year.

The normal expenditure of the average motor bicyclist consists of frequent small disbursements for petrol and oil, at the rate of about one shilling and threepence a hundred miles for the former, and of sixpence to eightpence a hundred miles for oil. Once a month or so the purchase of a new valve or a new sparking plug must be faced, which implies an outlay of about three to five shillings; and once in each season the tourist requires a new belt, say a guinea, or a new cover, say £2. Except in rare instances other expenses are due to the fault or fancy of the rider. A reckless man will open his throttle on a tempting stretch in a police-harried county, or round a blind corner too quickly; a helpless man will have recourse to the repairer for every puncture or leaky valve or loss of a hundred engine revolutions. The resultant fees must be debited not to the sport as a sport, but to the individual as an individual.

The Commissariat Department.

Personally, like the majority of my riding acquaintances, I have avoided accidents, fines, and long lists of items on a garage billhead. The heaviest expenses I have incurred as a motor cyclist are due to my personal idiosyncrasies, and have been deliberate extravagances. I dislike scratch meals. Some men get through a double century run on a packet of home-made sandwiches and a flask of liquor from the domestic cupboard. I detest dry and crumbly sandwiches and lukewarm drinks; when I am on the road, I time my route to approach excellent hostelries in the neighbourhood of meal times, and foot the resultant bills merrily. But I do not blame the sport; a tin flask and sandwich case would obviate this waste.

Old and New Accessories and Clothing.

Again, I loathe out-of-date accessories; I might have economised to the tune of a small fortune by retaining an excellent Schmidt lamp and B.K. horn, which I bought about 1903; both are still in use, and have cost little in repairs. But I sold them with my 1903 machine, and most seasons since have seen the purchase of at least a brace of hooters and lamps. Gross extravagance, I admit; but I do not blame the sport.

I am always seeing something new in clothing, and spend pounds every year on new gloves, leggings, and coats; but there still hang in my garage the crude but serviceable garments I bought a long while ago.

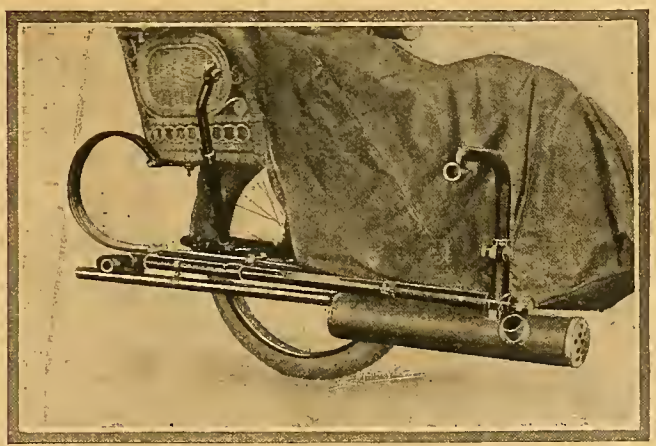
Sometimes, too, when the weather is bad and I am in a lazy mood, or the initial portion of my route lies over roads I know and loathe, I travel part of the way by train. Again I do not blame the sport. The inevitable expenses imposed on me compulsorily by my adoption of motor cycling as my pet hobby have never totted up to anything like ten shillings a week, even though I distribute them only over the four months of the summer season.

Once a Motor Cyclist Always a Motor Cyclist.

I should not have the least hesitation in remaining a motor cyclist if Mr. Lloyd George taxed my income down till I had but a humble dollar a week for spending money; though I admit I should then be a less frequent figure at hotels, retain my accessories as long as they would hold together, wear somewhat weather-beaten toggery, and absolutely eschew the railway train. The essential and inevitable expenses of motor cycling are ridiculously small for anybody who does not regard every outing and every hobby as a fresh opening for lavish personal expenditure in sidelines; and this is true even of the amateur novice, who may have to acquire a little rudimentary mechanical knowledge before he can rank as independent of the repair shop.

I started on the hobby as that particular brand of idiot who uses a hammer on an ordinary wood screw, and never remembers which way a gas tap turns on or off. There were no handbooks available, and machines were very, very bad. But after I had once seen a mechanic grind a valve or adjust a trembler, I began to do my own repairs; and to-day—apart from machine tools—I flatter myself I know more about motor cycle repairs than 999 out of every 1,000 garage mechanics.

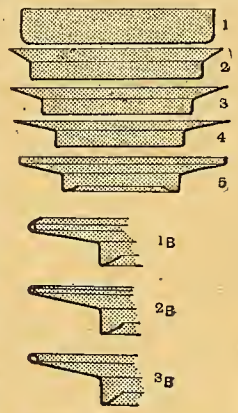
This knowledge has been earned on the road, and I do not regret one moment of the delays in which I acquired it, though some of them were very long.



A suggestion of *The Motor Cycle* is being adopted in several quarters. To silence effectively a motor bicycle is difficult owing to lack of space for a large silencer, but with sidecar machines a large box can be attached to the sidecar frame as shown. The Rudge Co. are now trying the idea.

How a Variable Gear is Made.

RECENTLY we spent an instructive morning, studying the manufacture and assembling of the different parts of the Rudge variable gear, a modified design of which has recently made its appearance. One of the most interesting processes is the pressing of the divided rear pulley or belt rim. The two separate halves are pressed from flat circular plates of steel. The plate for the outer or loose flange undergoes five pressing operations to bring it to the correct size and shape, and three more to wire the edge for strengthening purposes. The operations can be easily followed by reference to the accompanying line drawings.



Rudge belt rim pressing showing various stages of operation.

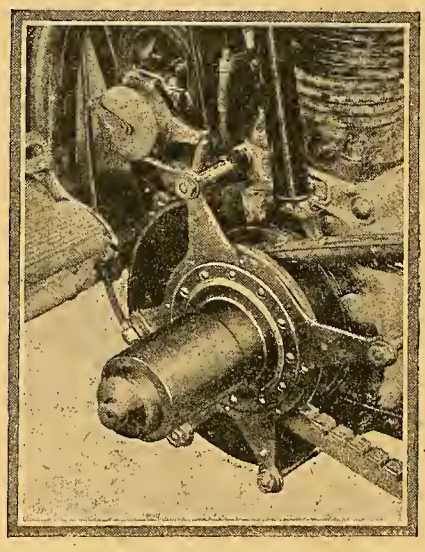
The first process brings the flat plate to a cup shape as in fig. 1. Next the cup is reduced in diameter, and the flange is begun (fig. 2). The next two pairs of dies bring the flange to a more correct angle and further reduce the diameter of the cup (figs. 3 and 4), while the final operation finishes the angle of the pulley, and turns over both inner and outer edges and cuts out the centre. After this the drum is put in a lathe and the edges cleaned up. Then begins the wiring. A wire ring is placed inside the larger of the turned-up edges, and three more presses finish the wiring by turning over this edge (as in figs. 1, 2, and 3b).

The inner or fixed flange is made in a similar fashion, but needs fewer operations. When both flanges are finished, the inner one is spoked to the wheel rim and the outer is spoked to a secondary hub, which lies outside the wheel hub, and which is capable of being slid laterally.

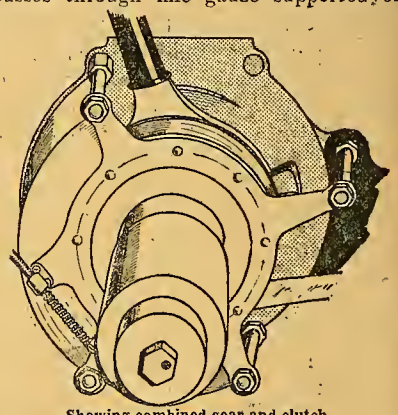
The Gear and Clutch.

Passing now to the combined expanding engine pulley and clutch, the first thing to strike one is the complete mud-guarding of the device. The ample ball thrusts are protected by rings which project over the outer edges of the pulley flanges, and the belt and pulley are shielded by a sheet-steel case extending half round the pulley. It was discovered, however, that the belt carried in a certain amount of mud, consequently louvres were cut in the front of the shield to allow dirt to be thrown out by centrifugal force, without permitting any to enter from outside.

The lubrication also is very ingenious,


The new Rudge variable gear which has been rendered neater and smaller.

the oily vapour from the crank case passing down the hollow crank spindle and out through carefully positioned holes to the ball races and clutch plates, while provision is made for external oiling should it be considered advisable. Before escaping to the air, the vapour passes through fine gauze supported on

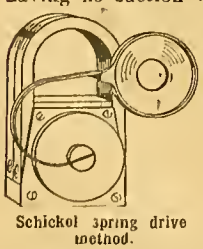

Showing combined gear and clutch.

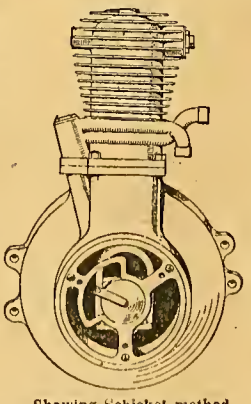
a disc of perforated tin, which catches the oil and prevents the ingress of mud. It is most fascinating to watch the assembling of the pulley and clutch. The "truth" of the pulley flanges with the central member is ensured by their being erected on a special mandrel, which can only be withdrawn in the case of an accurate fit.

The clutch is operated by a lever on the left handle-bar through the medium of a Bowden cable, while the gears are operated by a long lever working in a quadrant attached at a convenient position on the tank. The lever expands the front pulley by means of cams, and at the same time contracts the rear pulley, or *vice versa*; by this means the belt is always kept at the same tension and the pulleys are always in line. The whole construction is carefully carried out, all necessary parts being hardened and ground.

A NOVEL MAGNETO DRIVE.

We described and illustrated on January 11th, page 46, a very interesting two-stroke motor cycle engine called the Schickel; we now illustrate the novel magneto drive on this engine. The engine is of the three-port type—having no suction valve—and has a bore and stroke of 3⅛in., the rating being 5 h.p. The inlet and exhaust ports and transfer pipe are all cast with the cylinder, and arranged so that the inlet gas is vaporised by the heat of the exhaust pipe. The magneto is carried in an extension of the crank case, and is advanced by rocking the whole magneto inside the case: it is driven direct from the crank pin through an ingenious spring drive. The lubrication is carried out by measuring a certain quantity of oil into the petrol tank and allowing it to feed in through the carburetter. We hear also that this lubrication has been found quite successful owing to the construction of the engine. The engine is carried in a neat but strong frame, in which there are no top tubes, their place being taken by a cast aluminium tank, with which are cast the lugs for the steering head, down tube, and seat post.


Schickel spring drive method.


Showing Schickel method of carrying the magneto in extension of crank chamber.

TRIAL OF A M.R. CLUTCH

In our issue of the 15th ult. we made reference to a multiple disc hub clutch fitted to the Moto-Rêve. We had an opportunity of testing one of these clutches the other evening; and must say that it impressed us most favourably. The twenty-four clutch plates are contained in the hub of the belt rim, making a very neat fitting. The extra weight involved is but 9 lbs. Although the engine is a small one, the drive is taken up quite smoothly, and the clutch started an eleven stone rider from standstill without difficulty. The clutch is operated by means of a lever on the handle-bar. The makers inform us that the complete weight of the machine with clutch is only 80 lbs.

MILITARY MOTOR CYCLING NOTES



By "CELERITER"

I STATED in previous notes that every cyclist battalion in the Territorial Army had been given authority to enlist one motor cyclist officer and seventeen motor cyclists under special conditions. It now appears that only certain battalions were given this permission, which will not become general until April 1st next, therefore those motor cyclists who wish to avail themselves of the excellent terms offered should wait until March has run its course before they apply to the cyclist battalions to be enrolled under the new conditions.

War Office Lethargy.

Some four years ago a committee was formed to consider the best means of assisting the War Office to form a corps or register of motor cyclists who would be willing to serve their country in the event of war. Captain A. H. Trapmann was co-opted a member of this committee, and in due course the results of its labours were laid before the War Office and were duly pigeon-holed. A few months later Captain Trapmann drew up a scheme on similar lines and sent it to the War Office, also to be pigeon-holed. It was calculated that for an expenditure of £2,000 a year 500 motor cyclists could be organised, equipped, and trained to their duties in the field. The next move was Lord Haldane's announcement of the intended formation of the "Technical Reserve," which scheme never got beyond the announcement stage, and did not propose to do anything more than register the names and addresses of those who owned motor cycles and would be willing to serve their country in an emergency. Latterly, a committee has been sitting at the War Office to consider the matter, but although eighteen months have been devoted to this laudable purpose, neither the committee nor the considerations have got any "forrader," and motor cyclists are still freezing in the outer atmosphere of military neglect.

The National Association of Cyclist Defenders.

Then early in January the N.A.C.D. sprang into existence, and latterly it has been announced that Captain Trapmann has consented to act as honorary secretary, so one feels very much like exclaiming, "Here we are again!" Verily, there are more ways of making an engine work than tickling the carburetter.

The object of the N.A.C.D. is to form corps of twenty-five cyclists all over the kingdom. Some of these corps (London, Coventry, Liverpool, Manchester, and Glasgow) will be composed entirely of motor cyclists; in less populous centres corps will be mixed. Members register their names and addresses and engage to come out and serve their country in the case of invasion, but in order to render members capable of doing useful service in such an emergency they will have opportunities in peace time of learning their duties, of attending lectures on scouting, demolitions, despatch riding, etc., and of working occasionally in conjunction with the military, more especially with the cyclist battalions of the Territorial Army, and with the regulars at manœuvres. It seems to be just the very scheme that was wanted by most of us, and one that motor cyclists in general will be glad to support until the War Office sweeps out its pigeon holes and gives us something better. Perhaps now that it has been put on its mettle it may make an effort. In the meanwhile, motor cyclists are joining the N.A.C.D. at the rate of several dozens a week.

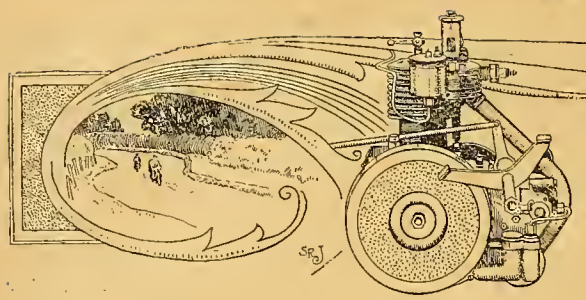
Motor Cyclists in the Territorial Army.

It is rumoured that somewhere about Easter time an attempt will be made to summon a vast mobilisation of motor cyclist members, and thus to demonstrate to the authorities not only the mobility of the motor cyclist, but the advantages of the new organisation.

Also there is very good reason to believe that only those motor cyclists who actually belong to the Territorial Army, or to some recognised branch thereof, will be invited to volunteer, and if I may venture into the realms of prophecy I would venture to state that the newly-formed N.A.C.D. will be asked to furnish all the motor cyclists required by the military authorities who cannot be supplied by the Territorial Cyclist Battalions. The obvious advice to motor cyclists who wish to take part is to join one or the other of these institutions at an early date.



Lance Corporal J. W. Watt, who believes that he was the first military motor cyclist in Scotland. Last year he was attached to the 1st Highland Div. Tel. Co., R.E.T. Aberdeen, and camped at Monkton, Ayrshire.



Hydrogen Peroxide in Acetylene Generators.

By FRANK HARVEY.

THE article on the use of hydrogen peroxide in acetylene generators which appeared in the issue of January 25th, although interesting, was limited, due no doubt to a misconception of facts on the part of the author. When this application of hydrogen peroxide was first suggested it seemed to open up a great many possibilities, but a little logical thought on the physical and chemical properties of hydrogen peroxide and commercial carbide will convince anyone that the possibilities are very limited.

The properties of hydrogen peroxide were ably shown by Mr. A. Renfred Myhill in the aforementioned article, and he emphasises the absolute instability of this substance, even of very weak solutions, and it might be added that even shaking under certain circumstances will produce decomposition. This being so any solution of hydrogen peroxide placed in a generator on such a vibrating body as a motor cycle or car will be, to a great extent, decomposed into water and oxygen, the latter escaping by the air vent placed in the top of the generator, and so the conclusion is that if there be any advantage in its use it will only be initial and not lasting. This is only one of the many instances which go to prove its instability and its unsuitability for generator work.

The Purifying Effect.

But supposing for the sake of argument hydrogen peroxide were stable and could be used for any length of time retaining its strength to the last, the strength of solution suggested by Mr. Myhill is so small that the amount of available oxygen would be negligible even if extraneous circumstances could be excluded. The acetylene burner the author experimented with passes approximately 14 litres per hour, and the water consumed was about 12 c.c. per hour. Now the suggested strength, 2 ounces of hydrogen peroxide (20 vols.) to 1 pint of water, is a 10% solution. Now 20 vols. hydrogen peroxide, being interpreted, means that one volume will give 20 volumes of oxygen, or one volume of a 10% solution will give two volumes of oxygen. That is, for every 14 litres or 14,000 c.c. acetylene there will be 24 c.c. oxygen, or to put it briefly, .17% of the gas would be oxygen. This quantity is very small, and is not likely to have any material effect on the candle-power of the light by directly aiding its combustion as suggested by Mr. Myhill. "But, how is the candle-power affected as shown by Mr. Myhill's curves?" one will ask. These curves are practically valueless, for apparently the necessary precautions were not taken to ensure, what is absolutely essential for a comparison of that description, that the consumptions and the pressures at the burner were identical. However, the addition of hydrogen peroxide would have the effect of raising the candle-power owing to its purifying effect on the gas. Commercial carbide contains many impurities, both inorganic and organic, which when acted on by water are given off with the acetylene. Amongst these impurities are compounds of sulphur and phosphorus. Sulphuretted hydrogen is the chief of these, and has a great affinity for oxygen, and so any oxygen which the hydrogen peroxide will give up is used up in what is termed "oxidising" this impurity. One of the substances formed by this oxidation of impurities is sulphuric acid, which will and does readily attack the metal container, and one which the author has shows distinct signs of corrosion.

To Obtain the Best Light.

The chief points for consideration in endeavouring to obtain the maximum candle-power are—

1. Purity of the acetylene evolved.
2. Pressure of the gas at the burner.
3. Design of burner and lamp.

Acetylene may be purified by the above method, but for reasons stated it is undesirable. The method the author would suggest is to have a separate chamber made of a non-corrosive material and fill it with small lumps of pumice or Kieselguhr soaked with chromic acid or an acid solution of cuprous chloride. The gas is passed through this and thence to the burner.

The pressure of the gas at the burner has a very great effect on the candle-power of the light. The candle-power of any light, as Mr. Myhill demonstrated, depends on the amount of oxygen or air which is supplied to it. This is called aeration, and the aeration depends upon the pressure. It would be possible to supply acetylene at such a pressure that it would take up enough air to become non-luminous, and nearly as hot as the oxy-hydrogen blowpipe, but unfortunately acetylene is not stable at high pressures and explodes with great violence. This effect of pressure shows that a properly designed burner should give just the pressure sufficient to "inject" enough air at the burner to obtain the maximum candle-power, and this is what manufacturers aim at. Of course, this pressure depends upon the facility with which the air gets to the flame, and very often a little hole is placed in the burner near the hole from which the acetylene escapes to allow the air to be drawn in more freely. It is advisable, therefore, when buying a burner to purchase one used or recommended by the lamp makers.

Finally, the explanation given by Mr. A. Myhill, "the excess of oxygen in an acetylene light cools the flame down and so decreases the candle-power," is a misconception of fact, and the writer begs to remind him of the abnormal heat obtained from the oxy-acetylene blowpipe which gives an entirely non-luminous flame.

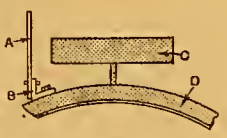
LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

How to Exhibit a Badge.

Sir,—May I offer to your readers a method of fixing a badge on their machines which is both simple and effective. All that is necessary is to drill two small holes in the extreme front of the front mudguard, and make two small brass angle plates. Fix these on the front mudguard with small pins, and touch up with paint of the same colour as the machine. The badge can then be easily fixed to the front part of the angle plates with two more small pins.



A A.A. badge.
B Brass angle plates.
C Number plate.
D Mudguard.

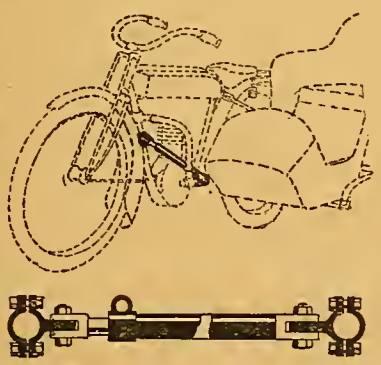
I have fixed my A.A. badge in this manner, and find it is out of the way, keeps fairly clean, and is most easily seen by all users of the road, even at night, as the lamp lights it up splendidly. Perhaps the enclosed rough drawing will make my meaning more clear.

THOS. E. HAMPTON.

An Auxiliary Sidecar Coupling.

Sir,—I have pleasure in submitting to you a sketch of an auxiliary sidecar coupling which I have patented No. 25027.

It consists of one steel tube telescoping into a larger steel tube, with a clip and bolt brazed on to one end to fasten the inner tube in position. Both these tubes have jaw clips brazed into one end, which couple up to other clips on the front down tube of the motor cycle and the longitudinal tube of the sidecar.



The idea of the above is to strengthen the front portion of the sidecar, and take away the swinging and sagging motion when rounding corners. It keeps the sidecar perfectly rigid.

P. H. COCKCROFT.

Experiments with Hydrogen Peroxide.

Sir,—I should be glad if I may be allowed to correct a misunderstanding which seems to have arisen out of my article on "Experiments with Hydrogen Peroxide."

I refer to the danger of its use. Many people with whom I have conversed on the subject have expressed a desire to adopt the idea, but are afraid to do so on account of the possibility of explosion.

Let me say, once and for all, that if the proportions recommended, viz., 2 ozs. of 20 vol. H_2O_2 per pint of water are adhered to, there is *absolutely no danger whatever. An explosion under such circumstances is a physical impossibility.*

I suppose the little incident I described of a friend of mine, whose generator exploded, has been the cause of all the discussion, but this case was the result of experimenting with a solution far and away stronger than any I used or should dream of using. It is *possible* to blow the generator to pieces if you purposely *try* to do so, but I think this is the only case in which there is any fear of explosion.

I should be glad if you would call attention to this matter, as I see there are comments, not altogether favourable to me, in other periodicals besides *The Motor Cycle.*

A. RENFRED MYHILL.

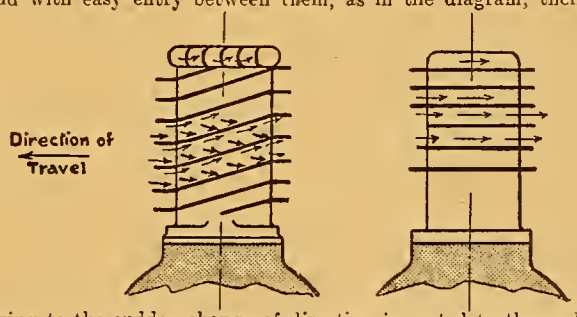
Inclined Engines.

Sir,—I have noted a letter in *The Motor Cycle* signed by "Vertical," in which my name is mentioned several times, and which letter appears to have been written by a gentleman in the trade who has an axe to grind.

If he will kindly mention his name, I will endeavour to reply to his query.

W. H. WELLS.

Sir,—With reference to "Ixion's" remarks of the 8th ult., and the correspondence that has followed, on inclined engines. Casting the radiating fins on certain inclined engines parallel to the ground has always appeared to me to be wrong. If the fins are disposed horizontally, then when the machine is in motion they travel in the path of least resistance, whereas the more forcibly air is made to impinge on them the more heat will be carried away. If the fins were disposed at an angle, and with easy entry between them, as in the diagram, then,



owing to the sudden change of direction imparted to the rush of air as it entered between them, it would be kept in close contact as it traversed the fins, and thus more heat would be dissipated.

With the usual arrangement practically only such heat as is actually radiated is swept away, and in many engines the radiating surfaces are not developed sufficiently, hence such engines quickly store heat.

Whether the few makers who incline their engines and omit to alter the radiating fins to lie parallel to the ground in accordance with custom do so by design, or merely to simplify the pattern, can only be surmised.

MELANZIE.

[This letter was unavoidably held over.—ED.]

The Ideal Military Motor Cycle.

Sir,—"Celeriter," in his Military Notes of the 22nd ult., invites one to express an opinion as to the best type of motor cycle for use in military operations. Under item No. 1, "Celeriter" proposes that the machine should be able to go "dead slow" amongst troops. Most motor cycles to-day are capable of slow speeds, and when a speed of less than five miles per hour becomes necessary, it would be better to disengage the clutch and dismount. The order "dismount" is generally given to pedal cyclist corps when mingling with other branches of the service. When not given, the dismount more often than not occurs in-

voluntarily, or by the wily design of the foot or horse soldier—over goes the iron horse contingent into a most inartistic heap.

A motor cycle used under military authority would have at times to do very rough work; crossing over fields, through water splashes and stretches of sand, consequently a 4 h.p. machine weighing only 112 lbs., as suggested by "Celeriter," would soon be suffering from a very bad attack of the rickets. On the other hand, if the machine were of the heavy gun-waggon type, it would prove cumbersome and unwieldy with equipment attached, and be a source of delay when being removed from a place of hiding. Into a place of hiding it would have to be often placed when the rider was with any advanced party. The type of motor cycle which would perhaps be best suited for the task might answer to the following specification; the object being to have the medium article in size and weight, and for this size and weight to possess maximum strength: 3½ h.p. single or 3¾ h.p. twin engine fixed well above the ground, strong and exceptionally well sprung frame, variable gear, preferably three speeds with clutch combined, tyres 2¼in. of first quality, a carrier extra strong and capable of securely supporting the weight of an average man, no plated parts whatever, and the enamelled ones to be either dark green or khaki in colour. Last, the machine would have to be as silent as possible, otherwise anyone engaged in scouting might as well carry a powerful rattle and cry, "I'm on your track, Martin." Good soldiers should be well equipped; but good equipment does not, of itself, make good soldiers.

AUTO MILITAIRE.

Sir,—Your military contributor "Celeriter" need wait no longer for his ideal motor cycle. The two-speed Douglas just about fills his requirements. It will travel at from three to forty miles per hour, or average thirty miles per hour for hours over give and take roads; climb anything up to 1 in 4 from a standstill, tow a cyclist or a light sidecar over all but the worst hills, and weighs only a few pounds over the hundredweight he stipulates.

I am speaking from about nine months' experience of a 1911 model E, but I suppose the 1912 model K, one of which I am anxiously awaiting delivery of, is even better.

An advantage of such a mount which "Celeriter" does not mention is that it can be ridden without damage over rough surfaces where one would hesitate to take the ordinary heavyweight.

J. C. BENNETT-MITCHELL.

An Australian Engineer's Mount.

Sir,—I have been a constant reader of *The Motor Cycle* for many years, and have always thoroughly enjoyed it. Thinking you would be interested, I enclose a photograph of my new free engine two-speed gear motor cycle, which I have recently completed. In reference to the engine, the cylinders are 3in. bore by 3½in. stroke. The radiators are machined out of the solid; the body of cylinders below the radiators is machined and polished. The combustion space is larger than the bore of the cylinder; this allows of large diameter valves. The cylinder heads are detachable, and are secured to the cylinders with six studs. The undersides of the valve heads have ⅜in. diameter pins projecting. These work through a spectacle plate which is secured to the detachable heads. If the valve heads break off they cannot fall into the cylinder, as they are caught by the spectacle plate. Up to now these pins and plates have not caused pre-ignition.

The crank case is of gun metal, machined and polished; the flywheels are of cast iron; the crankshafts of cast steel (hollow), 1in. diameter; the crank pin cast steel (hollow), 1½in. diameter, hardened and ground; the main bushes are patent metal; the connecting rods are mild steel, machined out at the sides to form an H section; the big ends have phosphor bronze bearings, and the small end bearings are cast-steel hardened and ground; the gudgeon pins are of mild steel, case-hardened; the levers for working the tappet rods are fitted with rollers running on the cams; the exhaust lifts are so arranged that the back cylinder is cut out first—this is handy for traffic; the magneto is chain-driven; and the chain runs in an oil bath.

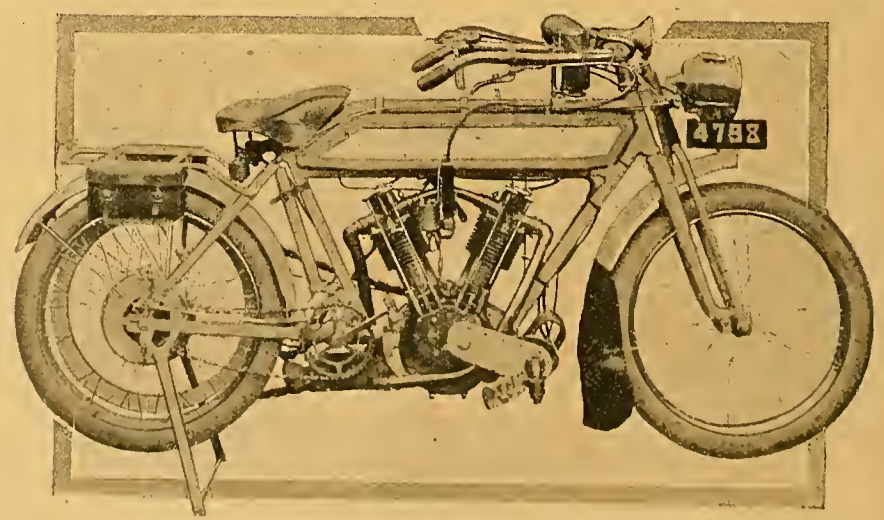
The back wheel hub is the same as is fitted to the V.S. machine; this two-speed and free engine gear has given me every satisfaction. I am using a Whittle belt for transmission top gear 3.3 to 1, low gear 6.6 to 1. The machine has two stands (the front one, not shown in the photograph, is just under the magneto), and weighs 2 cwts. My weight is 15½ stones.

The tyres were specially made by the Barnet Glass Rubber Co., having square treads ¼in. thick at the centre of the tread. The frame is of Chater-Lea parts, altered as shown. I designed and built the engine throughout.

In conclusion, I may say that it took me eighteen months to build the complete machine, which was done in spare time in my private workshop.

Wishing *The Motor Cycle* every success.

Victoria, Australia. V. E. E. GOTCH.



A special machine built by an Australian motor cyclist. (See accompanying letter.)

Hill-climbing.

Sir,—I have noticed in your journal that Mr. Frank Smith is desirous of finding a hill in England on which to test the hill-climbing powers of his Clyno and sidecar, which he almost guarantees will climb any hill in the country. May I draw his attention to a little "pimple" we have in the Isle of Wight. The hill I am referring to is Tulse Hill, Ventnor. This hill is what one might term "short and sweet," the length being a bit under the quarter of a mile, and the gradient is, I should say, about 1 in 2½. I may also add that the surface is good. This hill is said to be the shortest and steepest hill in England, and no doubt the correct length and gradient would be given Mr. Smith (if required) if he writes to the Town Surveyor of Ventnor. May I congratulate Mr. Smith on his previous records.

I.O.W.

[The Town Surveyor of Ventnor, Mr. H. Hughes Oakes, C.E., kindly informs us that the gradient of this hill is at the bottom part about 1 in 4, top part about 1 in 5. The hill is open to ordinary traffic, but little used.—Ed.]

Improvised Variable Pulley Gear.

Sir,—Perhaps the following tip concerning the Blumfield adjustable pulley would interest your readers.

Into the knob which has to be pressed in when the gear is altered a piece of steel bar should be screwed so as to project about ¼in. To the end of this piece of steel is brazed a round disc about 1in. diam. If the disc be pressed in with the foot when engine is running, the gear will be raised, and if pressed in when the exhaust valve is lifted the gear will be lowered.

Of course there are no means of taking up the slack in the belt. This comes in useful for tightening the belt when it is slipping, slow riding in towns, and picking up on hills.

ZEDEL.

Dissatisfied with English Machines. One Reason.

Sir, I read with some interest the paragraph *re* Donald Larke headed "Dissatisfied with English Machines." I also noted your remark thereon, but you might have added that Mr. Larke happens to be the agent for the Pierce motor cycle. American papers please copy.

W. F. ROGERS.

The Dust Nuisance.

Sir,—I shall be glad to know if any of your readers can suggest any means of preventing dust being thrown up by the back wheel. It may seem rather early yet to worry about dust, but it will soon be due. My experience of motor cycling is that it is much easier to keep oneself in a presentable state in winter than it is in summer. I ride a 1911 Triumph, and do not want a better mount; but I should like to be able to go for a spin in the summer without knowing that by the time I had done twenty miles my face and the back of my head would be in an awful state of dust.

I feel sure that the dust must be thrown up by the back wheel. Are there not any means of preventing this? If you would be so good as to insert this letter, perhaps a discussion on the subject may lead to some remedy being found. S.H.M.

[The only remedy for dust is to treat the road surface with a suitable tar preparation. More dust thrown up by other vehicles settles on the rider than rises from his own driving wheel.—ED.]

Necessity is the Mother of Invention.

Sir,—I see in a recent issue of *The Motor Cycle*, under the above heading, that Mr. A. B. Bennett asks me what plan I would adopt to thaw a generator on a frosty night when the date of the last snowfall was some time during the previous winter. If Mr. Bennett would care to put himself in communication with me (my address is The Beeches, Bassingborn, Cambs.) I shall have great pleasure in giving him full particulars of the method employed on several occasions by me to thaw a frozen generator, and I can assure him that it has been a great success, and is very much cheaper and more efficient than thawing the generator over a petrol fire, and he need have no necessity to wait for the next snowstorm.

I have never tried Mr. J. B. Dall's method of warming the generator at the silencer when the engine is running, and I do not think that the gases coming from the silencer would have the desired effect, as I always find that the exhaust when it leaves the silencer is nearly cold, except perhaps after a long run, and even then it would be a long job to thaw the generator.

When I wrote my original letter to you I related the method I adopted a few days before. We in East Anglia had a fall of snow, but perhaps in Mr. Bennett's locality there was no snow. (Dr.) SELBY CLARE.

Three and Four-wheeled Cyclecars.

Sir,—In view of the keen interest that is now centring round the motor cycle type of passenger vehicle, the probable supremacy of the four wheeled class: as opposed to that of three wheels, is, I feel sure, a matter of vital interest to all those who have in any way studied the problem of runabout construction.

I, therefore, make no apology for this letter.

I have endeavoured to take a totally unbiassed view with regard to the relative merits of the two types of vehicle. Viewing the matter, therefore, with all impartiality, I have come to the following conclusion. That the four-wheeled vehicle weighing under 5 cwts. will obtain absolute supremacy over its rival the three-wheeled runabout.

Having made my statement I will now give my reasons.

The three-wheeled vehicle labours under the following disadvantages.

To deal firstly with the seating problem. If the two seats are placed side by side between the two front wheels the weight over the rear driving wheel is insufficient to cause efficient road adhesion, and satisfactory running under all weather conditions is impossible. If the passenger be placed in front of the driver (as in the old forecar) the aim of the machine is totally defeated, as all sociability is lost. If, on the other hand, the driver and passenger are placed one each side of the rear wheel the seating space is very restricted, and in the case of there being only the driver on board, the balance is adversely affected.

Now with regard to the mechanical side of the rear-driven three-wheeler. The first and foremost objection is inaccessibility of the rear wheel What modern car owner would be content to squat in the mud and mend a puncture in the pouring rain? The modern runabout owner is not going to be content to do so either; he is going to demand interchangeable wheels, and he is going to get them too, on the four-wheeler

Then the driving strain on the rear wheel must be abnormal. What car designer would be satisfied to transmit 8 h.p. through one 3in. tyre? Ignoring the load which it is imperative that the rear wheel should carry in order to obtain proper road adhesion, we still have conditions which determine the life of the rear tyre as being—at the best—but a short one.

Now as to the case of the four-wheeled vehicle.

By adding a wheel at the rear we obtain the following conditions—conditions absolutely indispensable where satisfactory service is to be obtained

Firstly, all four wheels are directly accessible, and, where desired, interchangeable

Secondly, both weight and driving strain are shared by two tyres, thus ensuring an increased tyre life of at least 100% over and above that of the three-wheeled vehicle.

Thirdly, the necessary road adhesion is obtained without corrupting the design by an effort to place abnormal weight over the rear wheel.

Fourthly, the stability obtained is all that can be desired. It, therefore, seems obvious that, taking everything into consideration, the services which the motor cycle type of passenger vehicle will have to give demand the provision of four wheels, and that the three-wheeled type will never quite supply the want which so clearly exists for a machine of this class.

If I have in any way over-rated the indispensability of the fourth wheel, I shall be only too glad to hear of any sufficient reasons for an alteration in my opinions.

GILBERT J. ALLDAY.

Pillion Seats.

Sir,—Referring to your illustration of a lady and gentleman on a pillion seat, I wish to say that my wife and myself took a tour from Edinburgh down to Towyn in



PILLION SEATS. A tour from Edinburgh to North Wales was undertaken by the riders depicted.

Wales, exactly in the same way as the illustration shows.

I enclose you a couple of illustrations, one showing the seat exactly as it is, and the other showing my wife on it.

The cycle is a 3½ h.p. Bradbury with a fixed gear, and took us both down there and a week's tour round the Snowdon district without any involuntary stoppage of any description. My wife says she would no more go in a sidecar on some of the roads that we traversed than fly.

CHAS. O. COX.

Multi-pole Sparking Plugs.

Sir—We would like to point out in reply to the letter from Mr. Clifford Pressland on the above subject that, whether a Lodge double-pole plug and an ordinary plug are used with a single-pole magneto, or whether two ordinary plugs are used with a double-pole magneto, the two spark gaps are "in series" in either case. We think that our diagrams in your issue of February 15th should have made this quite clear.

In winding an armature you can either "earth" one end of the secondary winding and have, say, a pressure of 100 volts positive at the other end, or you may "earth" the middle point of the winding and have 50 volts positive at one end and 50 volts negative at the other. You can also wind the armature without any "earth" connections, and then the pressure may be anything from 0 to 100 volts at either end, the actual pressure depending on the external circuit.

Of these three methods, the first is that used in a single-pole magneto, and the second and third are those used in double-pole magnetos. So far as straining the insulation is concerned there is practically no difference with armatures of similar size. To get the same spark pressure, the same amount of wire must be wound on the armature whichever method of winding is used, and there is the same amount of space available for insulation; any difference is merely in the arrangement of the insulation. Therefore if the double-pole magneto is the same size as the single-pole magneto, the strain on the insulation is no greater in the case of the single-pole magneto firing at two plugs in series than it is in the case of the double-pole magneto firing at two plugs in series.

We should like to make it quite clear that we do not wish to detract in any way from the value of the double-pole magneto, and, in fact, we have always made the Lodge coils on this double-pole principle, but nevertheless the advantage of being able to fire in two places in the cylinder simultaneously can be obtained with the ordinary single-pole magneto by using the Lodge double-pole plug; and this without there being the least danger of straining the magneto.

LODGE BROS. AND CO.

A.C.U. and M.C.P.A. Committees.

Sir,—The paragraph on page 225 in your last issue prompts me to ask the favour of your wide circulation in order to acquaint members of the A.C.U. with the present position of affairs concerning the General Committee. One of the early members of the Union—then called the Auto Cycle Club—I have served upon the committee for several years, and always endeavoured to jealously guard the interests of private owners, as have also other practical motor cyclists representing individual members and affiliated clubs. But during the past four years the trade element, small at first, has increased to an extent which now threatens the future welfare of the A.C.U. as the governing body of the sport. Some of these gentlemen are connected with the Manufacturers' Union, and should that organisation ever differ from the A.C.U. upon some important policy, it is a natural expectation that all trade members would hold together in committee and out-vote the delegates who have no axes to grind.

The self-constituted "progressives' committee" announce that they wish to reform the policy of the A.C.U. and bring in to the fold a large accession of members—an ingenuous statement seemingly drafted to mask other intentions. Because of log-rolling that had reached beyond reasonable limits, a tacit understanding was come to amongst the private owners on the committee that the trade element ought to be excluded from the Competitions Sub-committee, and was put into practice for 1910 and 1911; is it only a coincidence that some of the "excluded" are the moving spirits starting the wrongly-named "progressives'" campaign? The intention is more clearly revealed by the two lists of names recommended as suitable men respectively to represent individual members and affiliated clubs.

You, sir, have directed attention to the fact that the list for individual members includes seven gentlemen actively engaged in the motor cycle trade and three indirectly interested. Perusal of the list for affiliated club delegates is also worth consideration, for of the eighteen names five are actively engaged in some section of the trade, five are indirectly interested, five are private owners, but the standing of the remaining three is not known to the writer. Therefore, I deduce that the thirty suggested names comprise twelve actively engaged in the trade, eight indirectly interested, seven private owners, and three whom I cannot place. Comment is needless.

It has been charged against myself and others of my way of thinking (who for years have spent much time with the sole object of making the A.C.U. a truly influential organisation) that we are not practical motor cyclists. If by practical is meant taking part in hill-climbs and speed contests, I must plead guilty and be placed in the same category with my friends on the committee who ride machines for pleasure, but we drove motor bicycles before some of our critics had left school.

Were the Manufacturers' Union not in existence I could not dissent from the view that help from many members of the trade would be a useful asset to an A.C.U. committee; but the amicable arrangements entered into between the manufacturers and the A.C.U., for joint conferences upon matters in which the trade is concerned, at once disposes of that contention. The recent meeting of men officially representing both bodies, who mutually drafted the rules for the one day and six days' trials, proves that the responsible leaders of the trade are quite satisfied. Through their own organisation members of the motor cycle industry possess adequate means for full expression of opinion, and, backed by that influence, such desires will, I hope, always carry the weight they deserve with the A.C.U. No private owner would dare suggest that he is entitled to be represented upon the trade body or to vote in committee whilst he has his own recognised association also to render assistance.

The only means of communicating with the individual members of the A.C.U. is through the medium of the Press. If their important interests are to be respected, it is essential they should attend the annual general meeting to be held this (Thursday) evening at eight o'clock at the R.A.C. Buildings, 89, Pall Mall, London, S.W.

H. P. E. HARDING, a Vice-chairman of the A.C.U.

Sir,—In the report of the Progressives' meetings, I notice that the chairman stated "it would take steps to suppress bad manners at public gatherings." Excellent in theory, but in practice not adopted, for this "body" must be hard pressed for good men, when it includes upon its recommended lists the names of the ringleaders who created disturbances at two public dinners in London a few weeks ago. *The Motor Cycle* commented strongly upon the conduct of these men a week afterwards.

INDIVIDUAL MEMBER.

[If this be the case, surely it is a good move to have the exuberant members on the committee with a view to persuading them to exhaust their superfluous energies in keeping general order.—Ed.]

SUMMARY OF CORRESPONDENCE.

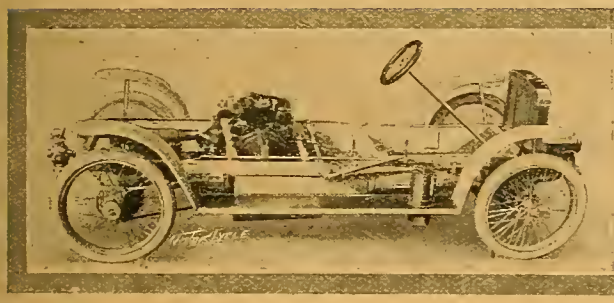
Mr. F. W. Finnemore writes: "I rode a Veloce with two-speed gear in the Sutton Coldfield Trials. Owing to the breakage of a ball race, I was unable to complete the course."

The Rom Tyre and Rubber Co. (1909), Ltd., write. "In your last issue we notice 'Ixion's' remarks in regard to tyres, 'Nothing gives quite as high a security factor as steel on the worst type of grease, but steel studs strain the fabric casing and cause undue sideslips on smooth stone or wooden surfaces.' We quite agree that steel studs alone, while they grip the worst grease, slip on smooth stone or wooden surfaces if dry. This, however, must not be confused with the combination non-skid, such as the Rom, as this incorporates rubber with steel, the steel gripping on the grease, but the rubber projections performing their function as a non-skid on all dry surfaces, stone setts, etc. As regards the studs injuring the casing, this is quite impossible by reason of the special construction of the casing and tread."

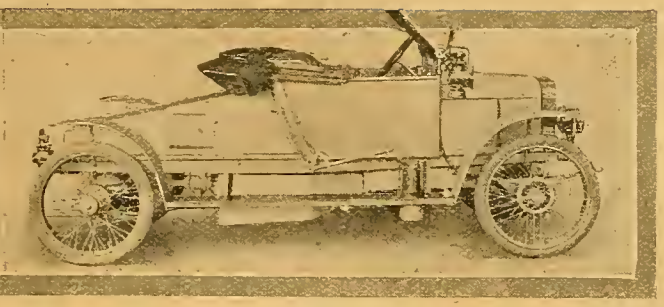
LOST AND FOUND.

We receive many letters regarding accessories, etc., both "Lost and Found," which we are unable to find space for. As these particular matters are of interest to two persons only, viz., the finder and the loser, we keep a list of such articles, and, should we receive a letter from the finder which corresponds to the article lost, the two persons are put into communication.

THE G.W.K. CYCLECAR.

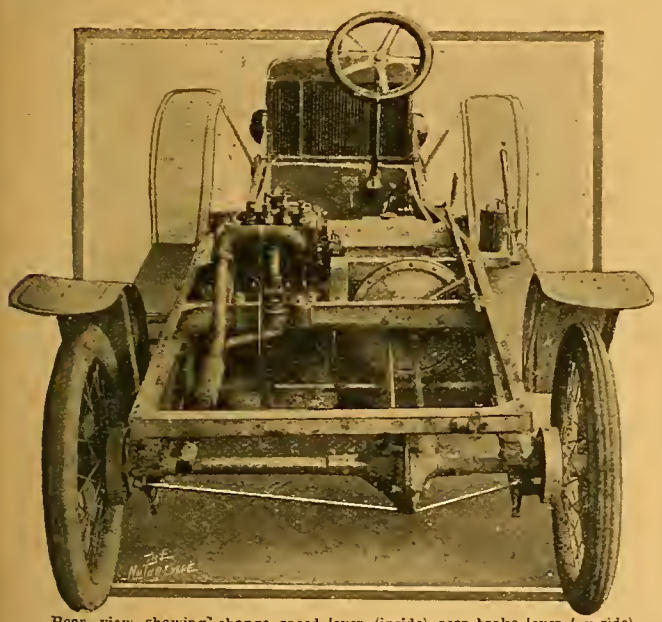


The G.W.K. chassis.



The complete cyclecar.

AN interesting little four-wheeled runabout is the two-cylinder G.W.K., which is soundly constructed throughout, and is a thoroughly practical little vehicle on motor cycle lines. Its motive power is a two-cylinder vertical, water-cooled Coventry Simplex engine, 86 × 90 mm., 1,046 c.c.; the magneto and water pump are driven off the camshaft.



Rear view showing change speed lever (inside), rear brake lever (outside), clutch, foot brake and accelerator pedals, rear axle, propeller-shaft, and torque rod.

The frame is of pressed steel, and the engine is carried transversely in it on two cross members. The engine is situated midway in the frame, and both it and the transmission may be easily reached by lifting a lid in the coachwork behind the driver's seat. The large flywheel acts as a friction disc, the friction wheel which engages with it being faced with a special fibre preparation. The system of drive and gearing will be familiar to our older readers when we tell them that it is somewhat similar to that used on the Armadale tricar. The square shaft carrying the fibre wheel is kept in contact with the disc of the flywheel by means of a strong adjustable spring. The forward end of the square shaft carries the foot brake drum, while its after end terminates in a universal joint, of which there are two on the propeller-shaft. The final drive is by bevel to a well-designed differential rear axle. The rear wheel brakes are of the internal expanding type. Declutching consists in moving the fibre wheel away from the driving disc, and naturally when driving, the further the fibre wheel is from the centre of the driving disc the higher is the gear. Any number of gears may be had between two points, and if the fibre wheel be pushed to the other side of the centre of the driving disc the reverse is obtained. The pedal which controls the friction disc, and may be called the clutch pedal, also applies a brake if depressed to its fullest extent. It is interesting to note that the adjusting collar, which increases the tension of the spring for the fibre faced wheel, is also used for the adjustment of the foot brake.

The steering is of the rack and pinion type. The steering rod is carried in an eccentric bush, so that wear can be easily taken up by turning the eccentric bush until the teeth of the pinion are further engaged with the rack teeth.

The chassis is sprung on semi-elliptical springs forward and on Lanchester type springs at the rear. The radiator is of the multi-tubular type. The front axle is tubular, and the wheels are 26 × 2½. The body has high side doors, and seats two people side by side. Ample foot room is provided under the bonnet, at the front of which the radiator is carried. The whole is low built and of racy appearance. Altogether the design impressed us most favourably, and though perhaps a little prejudice may at first be encountered against the friction drive, we do not see for a moment why this should not be satisfactory in the case of so light and so medium powered a vehicle. It will be noticed that the engine easily comes within the 1,100 c.c. limit recently imposed by the R.A.C. and A.C.U., and no difficulty will be experienced in bringing the chassis weight within the prescribed limit, as it already weighs within a few pounds of the 6 cwts. unladen.

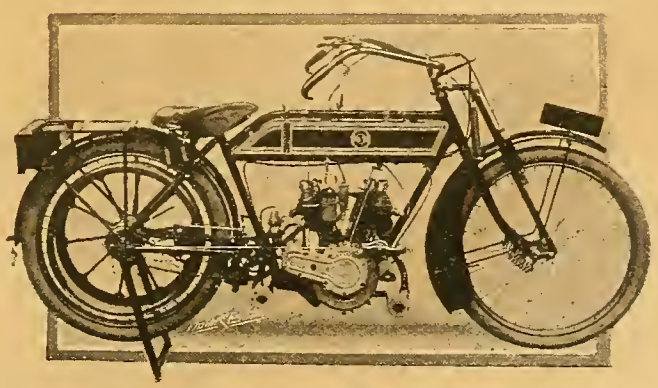
ENTRIES FOR T.T. RACES.

The following additional entries have been received by the Auto Cycle Union for the Junior and Senior T.T. races on June 28th and July 1st. The entrants do not mention what make of machine they intend to ride:

SENIOR RACE.—W. L. T. Rhys, Rex G. Mundy, P. Johnson, and E. B. Ware.

JUNIOR RACE.—Rex G. Mundy, P. Johnson, and E. B. Ware.

TWIN PREMIER WITH A NEW DESIGN FRAME.



The latest model 3¾ h.p. twin-cylinder Premier has a dropped top tube to give the lowest possible riding position, and it will be agreed that its appearance has been considerably enhanced thereby.



TIME TO LIGHT LAMPS.

Mar. 7th	... ...	6.48 p.m.
,, 9th	... ...	6.51 ,,
,, 11th	... ...	6.55 ,,
,, 13th	... ...	6.58 ,,

A Fortnight Hence.

The ninth special Spring Number of *The Motor Cycle* will contain special articles and illustrations. Price 1d.

Midland Open Reliability Trial.

H. C. Pickering writes us that what we mistook for a water tank on his A.J.S. machine in the Sutton Coldfield trial was in reality a quart spare petrol tank. From this we can only suppose that on Edge Hill the tap became turned on, as we have a distinct recollection of liquid dripping on to the cylinder.

Motor Cyclists and the Coal Strike.

In the event of the railway service becoming more seriously disorganised than it is at present, motor cyclists will be entirely independent of trains. This was brought forcibly to public notice last year during the railway strike. Hundreds of motor cyclists were enabled to keep their business and holiday appointments with the aid of their motor cycles.

Something Entirely New.

A three-speed counter-shaft gear was seen undergoing test on a 3½ h.p. Triumph on Edge Hills last week-end. We understand that it is the latest production of the Triumph Cycle Co., Ltd. We have known for some time—in fact we said as much—that the company in question is not altogether favourably impressed with the two-speed gear, deeming the change from low to high gear too big a jump. We would urge readers not to approach the Triumph Co. for further details of the new gear at present; as soon as anything definite is decided an official statement will appear in these columns.

Sidecars and their Excellence.

As a really luxurious sidecar turnout, we have examined few to equal W. H. Wells's new 7 h.p. Indian with Canoelet body on a specially strong frame. The other day the owner invited us to go a short spin with him, and we were indeed most impressed with the luxury and general suitability of the combination. Naturally, one expects something good of Mr Wells, and his particular Indian engine undoubtedly is the most silent motor cycle engine it has been our pleasure to sample to date, and the even manner in which it would turn over at slow speeds without the slightest fuss was indeed an eye opener. It can truly be said that one has not experienced to the full the joys of sidecaring until an opportunity of a ride in such a luxurious turnout comes one's way

Large Funds but No Organisation.

The Auto Cycle Union received £104 9s. 6d. to organise its one-day spring trial on Saturday last, viz., forty-three entries at £2 2s. = £90 6s., and twenty-seven entries at 10s. 6d. = £14 3s. 6d. Surely this is sufficient to have arrows erected every half-mile if need be, and all the officials travel on luxurious cars throughout. Ever since Saturday our telephone bell has been ringing, the motor cycle manufacturers asking quite seriously what is being done in view of the hash. We can only retort "Wait and see." The A.C.U. committee are not likely to let such a muddle slip past without a proper enquiry.

English-Dutch Trial.

The latest amateur entrant is E. Lester (3½ h.p. P. and M.) We have to acknowledge entrance fees for the trial from F. Dover, G. Smith, Vernon Taylor, C. W. Wilson, Horatio Wallis, R. Cussons, J. C. Bennett-Mitchell, Seymour Smith, H. M. Carter, and A. E. Uffleman.

The Dutch M.C.C. have written strongly recommending that the trip be extended another day, or otherwise it will be impossible to see Volendam. Their suggestion is:

Saturday, August 3rd.—By boat to Holland.

Sunday, August 4th.—The Hague, Scheveningen, and Amsterdam.

Monday, August 5th.—Trial.

Tuesday, August 6th.—To Volendam and back to Amsterdam.

Wednesday, August 7th.—*Via* Haarlem to the Hague and Hook.

Thursday, August 8th.—Arrival at Harwich, 6 a.m.

SPECIAL FEATURES.

The Evolution of Engine Timing.

A.C.U. One-day Trial and its Shortcomings.

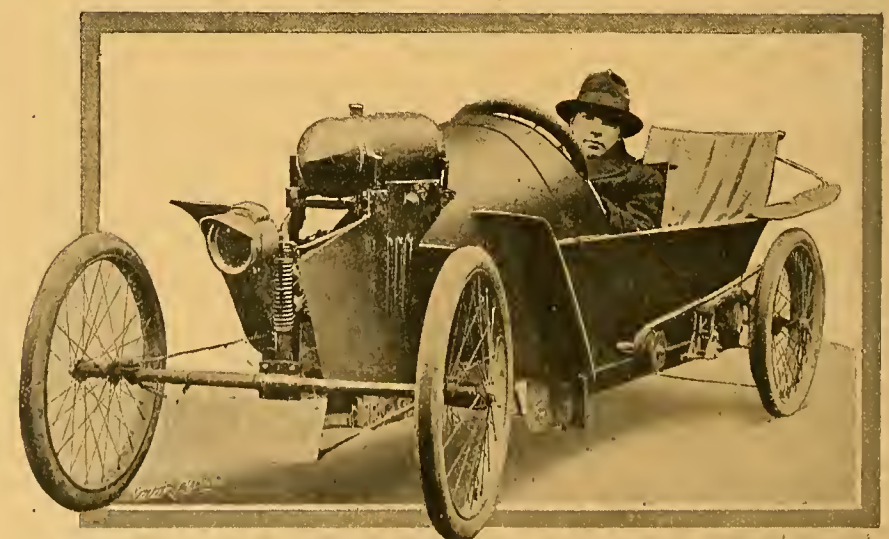
The Future of Engine Design.

Coventry Club's Reliability Trial.

The open reliability trial which is being organised by the Coventry and Warwickshire Club for Saturday, May 4th, will be over a secret course, which will not be divulged until a few hours before the start of the competition. It is, however, an open secret that the course will be a severe one, including the counties of Warwickshire, Worcestershire, and Gloucestershire.

Honister Pass.

The outcome of recent correspondence in *The Motor Cycle* with regard to the possibility or otherwise of climbing Honister Pass will be an attempt by Frank Smith to climb the hill on Saturday next on his Clyno, the sidecar seat of which will be occupied by G. Smith *(The Motor Cycle)*. The party will leave Keswick (Quick's Garage) for Buttermere *via* Newlands Vale in sufficient time to reach the Fish Inn, Buttermere, at 2 p.m., the climb to commence from Gatesgarth to the top of the Hause at 2.30 p.m. Afterwards another ascent to the top of the pass will be made by way of the Old Coach Road. In view of the correspondence which followed Mr. H. Newman's challenge in this journal, there is sure to be a crowd of motor cyclists to witness the attempt.



The cyclecar to which Mr. Low's forced induction engine, described last week, is fitted. The driver's seat is in the middle, which allows a more comfortable position for the driver when the machine is used solo.

ANOTHER SUCCESS

of the

Douglas

VIBRATIONLESS LIGHTWEIGHT

The Great

International French Hill-climb.

ONE DOUGLAS ENTERED



ONE DOUGLAS WIN

HILL-CLIMB AT MONTANGLAUST, FRANCE.
W. W. Douglas (2¾ h.p. Douglas), winner of his class in remarkably fast time.

Class 2, for Machines 350 c.c.—W. W. Douglas won this climb, averaging the remarkable speed of over 45 miles per hour. Most of the leading French, German, and English machines competed.

"The sensation of this class was the splendid climb made by the Douglas." —Vide *Motor Cycling.*

WRITE FOR ILLUSTRATED CATALOGUE TO

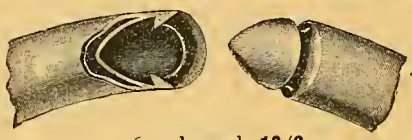
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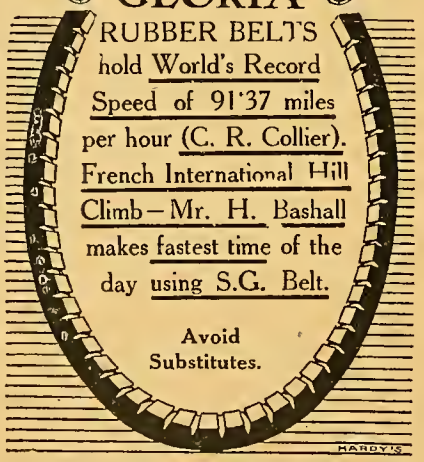
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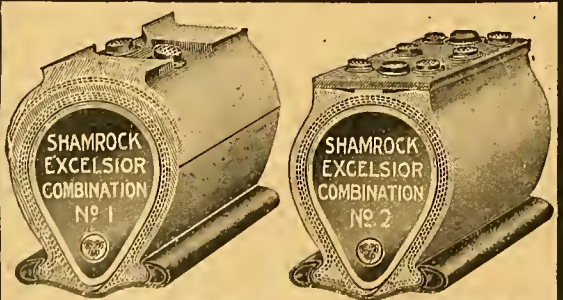
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French Club Run.

The Motor Cycle Club de France had a run from Paris to Evreux on Sunday last.

Cyclecars in the Tour de France Automobile.

Two Bedelias and one each Ronteix, Violette, Ponette, Sphinx, Phänomobile, Dumond, and C.L.C. are competing in the Tour de France which started on Friday last, and will finish on the 20th inst. All the machines mentioned above are in the voiturette class and built on the lines of the cyclecar.

The Motor Cycle on the Stage.

It is a novelty for a stage play to be written round the production of cycles and motor cycles. "Captain Billy" is the name of a play produced at the Royalty Theatre, Redditch, on Thursday last. Thrilling incidents of the play are when the heroine is thrust by the villain into an electrically heated enamelling stove at the Enfield Works, and the capture of spies, who have broken into the works to obtain possession of secret specifications, by the hero, Captain Billy, who arrives at an opportune moment, of course on an Enfield motor bicycle.

The Trade and the T.T.

The secretary of the Manufacturers' Union, Mr. Alfred Bednell, has addressed a letter to the press in which he points out the views of the manufacturers' section regarding the T.T. Races. An extract from the letter reads as follows: "I submit with all respect that the attitude of the trade on the T.T. Race question has been misconstrued. An impression has been created that the trade is inclined to discourage the sport. Exactly the contrary is the case. The trade takes the view that the private owner is altogether at a disadvantage if he is called upon to compete with trade riders, and that the sport and pastime will accordingly suffer unless events in which the trade rider is to compete with the private owner on even terms are restricted."

The L.C.C. Again in the Wrong.

An important case came before Mr. Denham at the Marlborough Street Police Court on the 13th ult. The L.C.C. sought to impose the tax in respect of two cars which had been tested on the highway bearing the ordinary dealers' identification marks. The case was taken up by the A.A. and M.U., as it was one of great importance to the makers of motor cars and motor cycles, for it would be a great hardship to hold a maker liable for the tax on every car or cycle that he had for sale, all of which undergo a road test. Mr. W. T. Parkes appeared for the defendant. Mr. Denham dismissed the case with two guineas costs against the L.C.C. Fortunately for motorists, the London magistrates not only understand the law, but administer it without fear or favour. We wish we could say the same for all benches. It will be remembered that quite recently the L.C.C. tried to compel Lord Russell to fill in particulars of taxes for which he was not liable and made a paltry attempt to make it appear that he had kept a car without a licence. Mr. Curtis Bennett dismissed the case with three guineas costs against them.

FUTURE EVENTS

Mar. 16.—Essex M.C. Open Hill-climb.
" 23.—B.M.C.R.C. Race Meeting.
" 23.—Herts. County A.C. Open Quarterly Trial.
" 30.—Derby and District M.C.C. Open Hill-climb.
April 5-8.—N.W. London M.C.C. & Herts. County A.C. Joint Trial and Open Hill-climb (Yorks.) and Ladies' Competition.
" 8.—Westmorland M.C.C. Open Hill-climb at Brigsteer Brow.
" 13.—Oxford M.C.C. Hill-climb.
" 13.—Liverpool A.C.C. Open Reliability Trial.

War Office Orders for Motor Cycles.

The recent War Office Tests at Brooklands have resulted in several firms having received instructions from the War Office to supply motor cycles which are to be subjected to severer tests than those they recently went through at Brooklands. The firms who have notified us as having received orders are Douglas Bros., Phelon and Moore, Ltd., Rudge-Whitworth, Ltd., Triumph Cycle Co., Ltd., Premier Cycle Co., Ltd., and Zenith Motors, Ltd.

L.G.B. and the Noise of Motor Cycles.

Last week a question was asked in Parliament relating to the noise of motor cycles. Mr. Burns (President of the Local Government Board), replying to Mr. Guinness (U., Bury St. Edmunds), said: I did not find it practicable to apply the recent regulation as to the use of a cut-out to motor cycles. What is required in the case of a motor cycle is not merely that the use of a cut-out should be prohibited, but that the cycle should be provided with an effective silencer, and I have under consideration the question of issuing an order on the subject.

One Day Trial Incident.

Mr. A. H. Priestly, who was doing excellent work as a marshal during Saturday's trial, had a curious incident happen to him at Horsham, where he placed his sidecar machine close to a fountain opposite the King's Head Hotel. An old inhabitant objected to the machine being there, and on being gently reminded it was no business of his, assumed an aggressive attitude, and had eventually to be removed by a policeman.

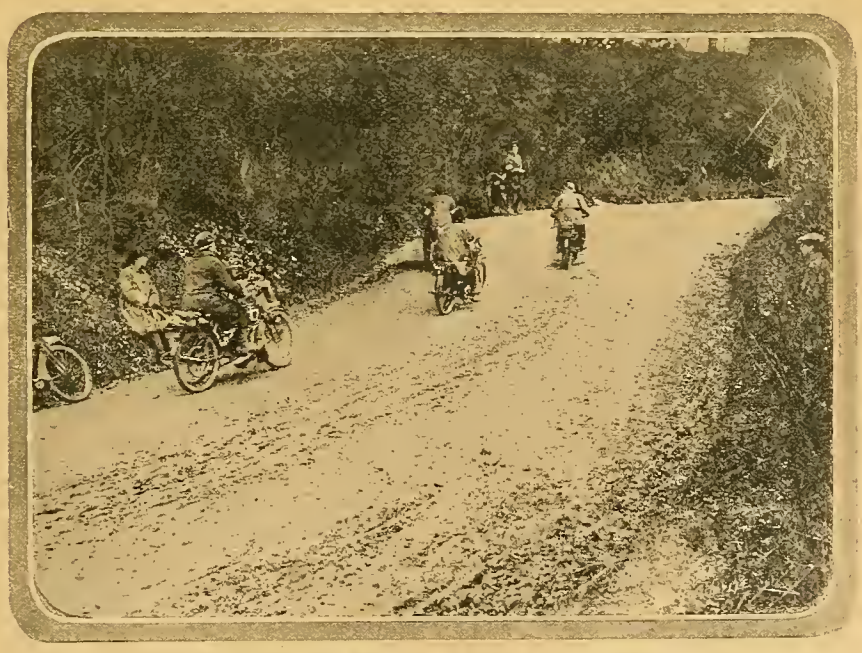
New Speed Limits.

The Local Government Board has sanctioned a ten miles an hour speed limit in the parish of Petworth, Sussex, upon many of the roads in and adjoining the town. Motor cyclists are advised to observe these limits with care.

A ten mile an hour speed limit is also in force at Richmond, Middlesex, on Bridge Street, and on so much of the road running over the river bridge as extends from the junction of the bridge with Bridge Street to its junction with Willoughby Road, Twickenham.

R.I.A. Activities.

The National Vehicle Owners' Association, an influential organisation of horse-owners, with headquarters at Birmingham, and one of the constituent bodies of the Midland Centre of the R.I.A., has agreed to circulate to its members cards, to be hung in stables, etc., conveying specific instructions to drivers to keep, at all times, as near as possible to the left kerb. This action by the horse-owners themselves is extremely valuable and demonstrates very forcibly the useful service rendered by the R.I.A. in combining all forms of road traffic in road matters. Special action is being taken by the Midland Centre of the R.I.A. to obtain an improvement in the road from Packington to Coleshill. The road, which has long been in bad condition, is reparable by Lord Aylesford.



A.C.U. ONE DAY TRIAL, WHICH PROVED A FAILURE.
A string of competitors climbing Cudham, the first of the two test hills.

A French View of the Motor Cycle.

THE current number of the *Touring Club de France Gazette* contains an interesting article on the motor cycle from a French point of view. This article deals with the 1912 French models, and compares them with English machines.

The writer claims that the sidecar, although practically unknown in France, was invented many years ago by a Frenchman named Bertoux. This will cause considerable surprise to some of the British sidecar makers. However, he does not say when M. Bertoux invented the sidecar, but says it was at first applied by him to a pedal bicycle. The same writer also claims that the free wheel as fitted to the pedalling gear was first patented in France.

He outlines the history of the sidecar, and points out why British machines differ so much from those used by French riders, and implies that the greatest difference is due to the fact that the British rider in the majority of cases desires to use a sidecar, whereas the French up to the present time have made very little use of this handy passenger attachment. Clutches, change-speed gears, chain transmission, and other items found on English machines, he says, have all been introduced on account of the sidecar, whereas in France it has always been held that a motor bicycle should be light in weight and as free as possible from mechanical complications. British motor cycles, he says, are usually over 150 lbs. in weight, and English riders do not look upon £80 as an exorbitant price for a powerful twin-cylinder sidecar machine with change-speed gear and free engine. The French ideal he instances by the following specification:

Very light single or twin-cylinder engine of about 2½ h.p., simple belt transmission, variable gear by means of an expanding pulley, and of a total weight unladen not exceeding 100 lbs. Quoting further from the article he points out that French motor bicycles have usually been looked upon as too heavy and too powerful, and now there is a growing dread that another enemy to the advancement of the pastime threatens French manufacturers, viz., mechanical complications. Finally, it is somewhat startling to read that in the opinion of the T.C.F. contributor the French roads, which we have always regarded as superior to British ones, are too rough for the comfortable use of a sidecar combination, and that the voiturette is the type of vehicle he recommends for passenger-carrying. Surely the low cost of running a sidecar in comparison with a small car has its advantages, and in our opinion the scarcity of sidecars in France would be better excused by reference to the lack of knowledge regarding these attachments and want of enterprise among most French makers.

Putting the sidecar question on one side, the French ideal specification is not a bad one, but in this country we have been educated not to look upon complication as an undesirable feature, provided the mechanism be reliable.

The R.A.C. Road Guide Scheme.

CONSIDERABLE adverse criticism has been published in the public press about the scheme of road guides now under consideration by the Royal Automobile Club. The R.A.C. therefore invited members of the motoring and motor cycling press on Thursday night last to listen to a full explanation of the idea from Mr. J. R. Nisbet, who is one of the vice-chairmen of the Auto Cycle Union. The scheme intimately concerns the motor cyclist, as no fewer than 5,000 members of the A.C.U. and affiliated clubs will benefit thereby. The idea, Mr. Nisbet pointed out, is no infringement; it is merely an extension of the R.A.C. guide scheme. The R.A.C. had since its inception offered all the advantages put forward by other bodies, save free legal defence, which was not inaugurated till 1910, and had gladly helped the A.A. and M.U. in every way, especially as regards the foundation of its touring department. The R.A.C. had fought the motorists' battles since 1895, and had spent altogether £60,000 in so doing. Below we give an outline of the scheme:

That the present system of appointing R.A.C. local guides should be enlarged by placing men in uniform:

1. At great junctions where there is a choice of routes.
2. At cross roads at times of abnormal traffic.
3. In the neighbourhood of towns on market days.
4. In the touring centres during the touring season, and at the R.A.C. hotels in much frequented towns.
5. At places where members and associates may require special information.
6. In places where inconsiderate driving has been reported, to prevent the imposition of a speed limit.
7. At certain ports, to assist motor tourists.

That the duties of the guides should include:

To report any exceptional damage to road surfaces.

That the guides stationed outside certain large towns should have at their call a corps of assistant guides, who would pilot motorists through the town for a small fee.

That the guides should carry maps and plans of the towns and districts in which they are employed.

That the guides should wear R.A.C. uniform, and should be described as "R.A.C. Touring Guides."

That the men selected should be recommended time-expired service men as far as possible.

That a number of the guides should be permanently employed, others should be temporarily employed.

The press dinner was held in the Great Gallery, and was followed by an excellent musical entertainment.

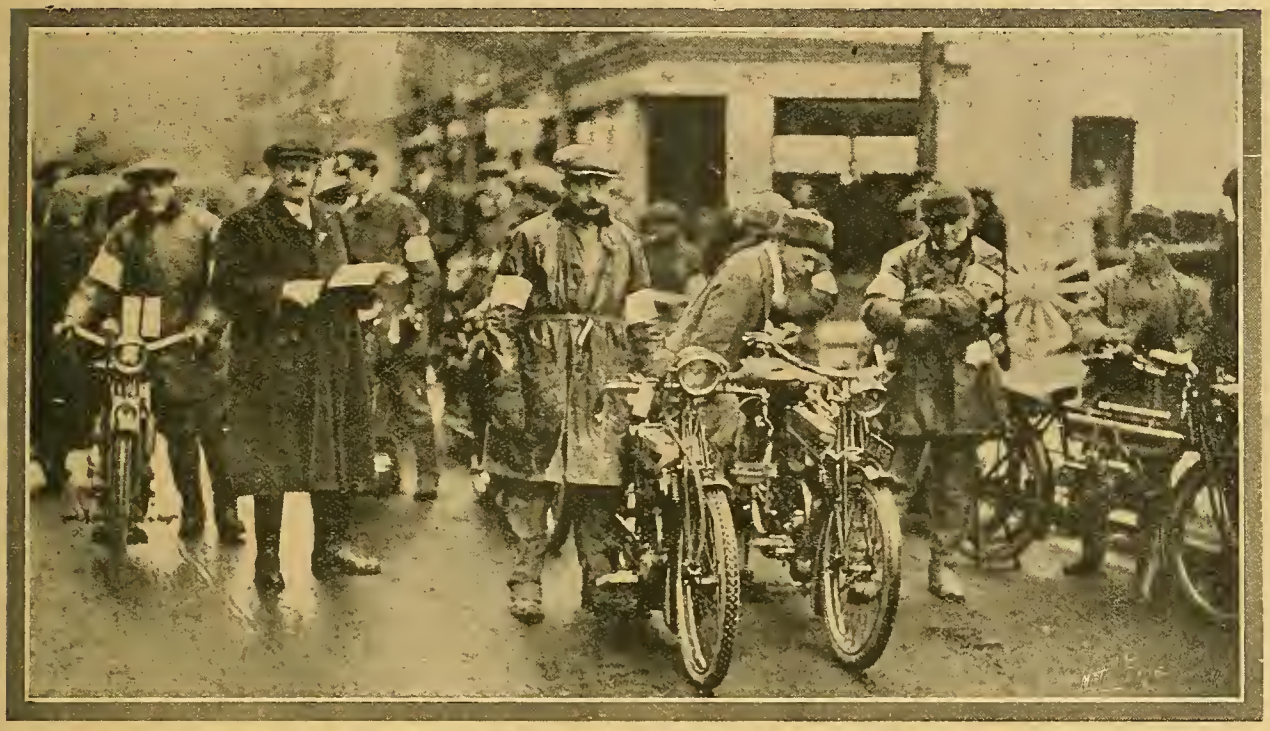
M.C.C. LAND'S END AND BACK RUN.

The entries for the above run which will commence on April 6th are already coming in apace. Readers will doubtless remember that the above M.C.C. event consists of a twenty-four hours' run from London to Land's End on Friday, April 6th, returning on Easter Monday, April 8th. The principal trophy put up for competition is the Jarrott cup presented by the president, Mr. Charles Jarrott. The trials hon. sec. is Mr. E. Gwynne, White Lodge, Crediton Road, West Hampstead. Entries to date:

S. May (8 Portland-Jap).
S. G. Frost (4½ V.S.-Jap).
C. Patteson (2¾ Enfield).
H. Patteson (2¾ Douglas).
G. E. Purchase (3½ Triumph).
F. J. Watson (3½ Swift).
L. A. Baddeley (7 Indian).
D. S. Baddeley (3½ P. & M.).
H. Karslake (3½ Rover).
S. C. Perryman (3½ Ariel).
F. C. North (3½ Ariel).
S. J. Saunders (3½ Rudge).
E. Pond (3½ Rudge).
J. R. Haswell (3½ Triumph sc.).
G. G. C. Pigott (5 6 Zenith-Gradua).
A. P. Dickinson (3½ Triumph).
W. Pratt (3½ P. & M.).
L. A. Mather (5-6 F.N.).
H. R. Deighton-Simpson (3½ Triumph).
H. Greaves (2¾ Enfield).
B. Alan Hill (7 Indian sc.).
E. Gwynne (3½ Triumph).
A. G. Peppercorn (3½ Bradbury).
W. B. Gibb (2¾ Douglas).
V. Olsson (3½ Trump-Jap).

THE A.C.U. ONE-DAY TRIAL.

A Chapter of Accidents. A Direful Finish. Trial Annulled.



The start from Croydon at 9 a.m.

SATURDAY, March 2nd, will be remembered as an unfortunate day in the annals of the Auto Cycle Union. March, following ancient tradition, came in like a lion with boisterous winds. The previous day's rain rendered the roads in an execrable condition; grease of the worst type, deep soft ruts, and a cold, almost sunless day made the riding conditions of the worst. The course was a highly sporting one, but it necessitated the negotiation of many byelanes, was most intricate, and needed scrupulous care in marking. Hardly an arrow was in its place. The official car promised for this work failed to materialise. Mr. J. W. G. Brooker was sent on at the last moment on a sidecar which promptly broke down, with the result that almost every section was unmarked. The course had been kept secret only too well. No one had any idea of his position when he lost himself, as he had had no opportunity of studying the country he had to traverse. Then the day finished up with a perfect deluge of rain, and the trial was declared null and void, but more of this later. As regards the weather overhead, the trial did not start so very badly. The scene outside the Swan and Sugarloaf Hotel was a busy one. The new judges, Captains Davidson and Nicholl, were hard put to it examining the machines, and were ably helped by the more experienced members of the competitions committee. Mr. Feeney, the other judge, worked like a Trojan at the scales, helped by Mr. Hart, and the weights of the competing machines, fully laden and ready for the road, given below make interesting reading:

Rider.	Machine.	Gear.	Weight in lbs.
B. Haddock	(2½ A.J.S.)	A.J.S. 2-sp.	176
R. G. Mundy	(3½ Singer)	Armstrong 3-sp.	232
S. A. Rowlandson	(3½ Rudge)	Rudge variable	258
W. E. Cook	(3½ A.S.L.)	N.S.U. 2-sp.	214
F. G. Edmond	(3½ Humber)	Humber 2-sp.	248
C. Pressland	(3½ Rudge)	Rudge variable	240
G. Drew	(6 Zenith)	Gradua variable	256
T. R. Trotter	(3½ B.S.A.)	B.S.A. 2-sp.	237
T. Pollock	(3½ James)	Heron 2-sp.	261
R. Hare	(2¾ Enfield)	Enfield 2-sp.	172
F. Dover	(3½ Premier)	Armstrong 3-sp.	238
V. Taylor	(3½ Rudge)	Rudge variable	242
W. Pratt	(3½ P. and M.)	P. and M. 2-sp.	230
V. Tomkins	(3½ Rover)	Armstrong 3-sp.	235
P. Phillips	(2¾ Douglas)	Douglas 2-sp.	173
F. Ball	(2¾ Douglas)	Douglas 2-sp.	170
F. C. North	(3½ Ariel)	Armstrong 3-sp.	253
L. Newey	(3½ Ariel)	Armstrong 3-sp.	237
R. Lord	(6 Rex)	Rex 2-sp.	284
F. W. Applebee	(2¾ Centaur)	Armstrong 3-sp.	172
J. Kerr	(3½ N.S.U.)	N.S.U. 2-sp.	231
R. M. Brice	(3½ Brown)	Bowden 2-sp.	216
C. Tinline	(3½ Rudge)	N.S.U. 2-sp.	233
W. F. Newsome	(3½ Triumph)	Free engine	218
E. W. Cheshire	(3½ Triumph)	Free engine	218
G. T. Gray	(3½ Rudge)	Rudge variable	239
C. O. Roberts	(3½ Rover)	Armstrong 3-sp.	234
A. J. Sproston	(3½ Rudge)	Rudge variable	240
F. E. Pither	(2¾ Enfield)	Enfield 2-sp.	163
R. Rothwell	(3½ Rudge)	Rudge variable	246
H. G. Ayers	(3½ A.S.L.)	N.S.U. 2-sp.	206
J. W. Ayers	(2½ A.J.S.)	A.J.S. 2-sp.	165
Mrs. M. Hardee	(3½ P. and M.)	P. and M. 2-sp.	233
V. Busby	(2¾ Humber)	Armstrong 3-sp.	170
H. Berwick	(3½ New Hudson)	Armstrong 3-sp.	242
H. G. Dixon	(3½ New Hudson)	Armstrong 3-sp.	242
W. L. Overend	(3½ P.V.)	N.S.U. 2-sp.	214
N. O. Soresby	(3½ Rudge)	Rudge variable	239
J. Cocker	(2½ Singer)	Armstrong 3-sp.	178
N. A. Ayers	(3½ Singer)	Armstrong 3-sp.	235
H. Mills	(3½ Premier)	Armstrong 3-sp.	225
Rev. E. P. Greenhill	(2¾ Douglas)	Douglas 2-sp.	171
L. E. Cass	(4½ Quadrant)	Armstrong 3-sp.	229
J. Oliphant	(3½ Premier)	Armstrong 3-sp.	238
A. H. Wright	(5 A.J.S.)	A.J.S. 2-sp.	238
A. V. Deacock	(3½ Alldays)	Roc gear	229
H. Johnson	(3½ Triumph)	Single gear	208
H. A. Shaw	(3½ Scott)	Scott 2-sp.	245

The A.C.U. One-day Trial.—



An A.C. sociable coming over the top of Polsteeple.

The passenger machines were not weighed. N. Ayers (3½ h.p. Singer) created quite a sensation by the extraordinary slow running of his engine. He walked away and left his machine jacked up on the stand, with the engine giving a quiet puff once every second, and all the world wondered. Ware was driving his famous Chater-Lea sc. machine with the latest Stewart-Precision carburetter. He seemed far from well, and little fit to drive in a reliability trial. F. G. Edmond's Humber had a very neat belt guard, and the method of enclosing the valves on Deacock's Alldays was worthy of comment. Frasetti was driving a new Indian and sidecar. The dropped frame and springing of the latter were worthy of note.

A Start at 9 a.m.

A late start was made, as weighing operations took a good deal more time than was anticipated. Incidentally, some of the figures revealed by the balance needle, caused some astonishment in more than one instance, and it is interesting to compare the actual weights with makers' catalogue estimates, remembering, of course, that the trials machines were equipped for touring, and in all cases had lamp and generator and complete kit of tools, and ninety-five per cent. had change-speed gears. Nearly all got away cleanly and well, the A.C.U. clause demanding a free engine having one good effect, at least, viz., the entire absence of the panting rider galloping alongside his machine to start a cold engine. Instead, a dig at the pedal or foot-starter, and the engine readily responded with a crisp bark. In some cases the low gear lever was engaged, and the rider calmly walked alongside, hopped into the saddle, and away the machine would go.

Warlingham was the first point on the route, and, overtaking a Rudge rider who had forgotten to fasten his tool-bag, we were able to perform a useful service by halting to collect the bits and scurrying after him again.

Hardly had Warlingham been left behind than the usual tale of woe commenced. Two competitors—F. Ball (Douglas) and F. W. Applebee (Centaur)—were side by side cleaning out jets, and barely a quarter of a mile further we overtook G. L. Fletcher performing the evolution of attempting to clean his jet without dismounting. In free-wheeling down a hill he had actually removed the throttle slides, and would soon have completed the operation but it was time for the engine to fire and he had perforce to stop. Polsteeple Hill took many competitors by surprise. The road was greasy, and is extremely narrow. Over half the competitors failed owing to being baulked, as a fallen passenger machine occupied nearly the whole of the road, and could not be moved for some time.





C. T. Gray (Rudge), H. G. Dixon (New Hudson), and H. Berwick (New Hudson) ascending Polsteeple Hill. Observe the narrow track.

At Tatsfield nearly all the competitors went wrong. Up to this point a solitary A.C.U. arrow had been noticed, though many times there had been need for one, and along with Haddock (A.J.S.) and Edmond (Humber) we continued by the signposts, eventually arriving at the top of Cudham Hill. In a moment or two another bunch of competitors arrived by the same route. Messrs. Straight and Hart, who were at the hill summit, directed them all to descend the hill to Downe and come up again by the orthodox way, but, of course, the value of the test with engines comparatively cool was considerably negatived.

Cudham and its Victims.

The approach to Cudham was unpleasantly greasy. The Knap, Trough, Devil's Elbow, or whatever the steepest part of Cudham calls itself, was soft and slithery, and as bad as could be. It is a really steep hill, and the best of its kind near London. We may begin reporting this climb by saying that every man who made a clean ascent deserves congratulation. The successful ones were: V. Taylor (3½ Rudge), W. Pratt (3½ P. and M.), Mrs. Hardee (3½ P. and M.), P. Phillips (2¾ Douglas), L. Newey (3½ Ariel), F. C. North (3½ Ariel), F. Dover (3½ Premier), A. J. Sproston (3½ Rudge), V. Busby (2¾ Humber), T. Pollock (3½ James), R. Lord (6 Rex), C. Tinline (3½ Rudge), H. Berwick (3½ New Hudson), H. G. Dixon (3½ New Hudson), W. F. Newsome (3½ Triumph), E. W. Cheshire (3½ Triumph), G. T. Gray (3½ Rudge), W. L. Overend (3½ P.V.), B. Haddock (2½ A.J.S.), G. Drew (6 Zenith), L. E. Cass (4½ Quadrant), H. Hills (3½ Premier), J. W. Ayers (2½ A.J.S.), J. Cocker (2½ Singer), J. Oliphant (3½ Premier), who surmounted the hill with difficulty, N. A. Ayers (3½

The A.C.U. One-day Trial.—



R. Lord (6 h.p. two-speed Rex) on Polsteeple Hill, twelve miles from the start.

Singer), R. G. Mundy (3½ Singer), who just managed to reach the top, C. Pressland (3½ Rudge), and A. H. Wright (5 A.J.S.)

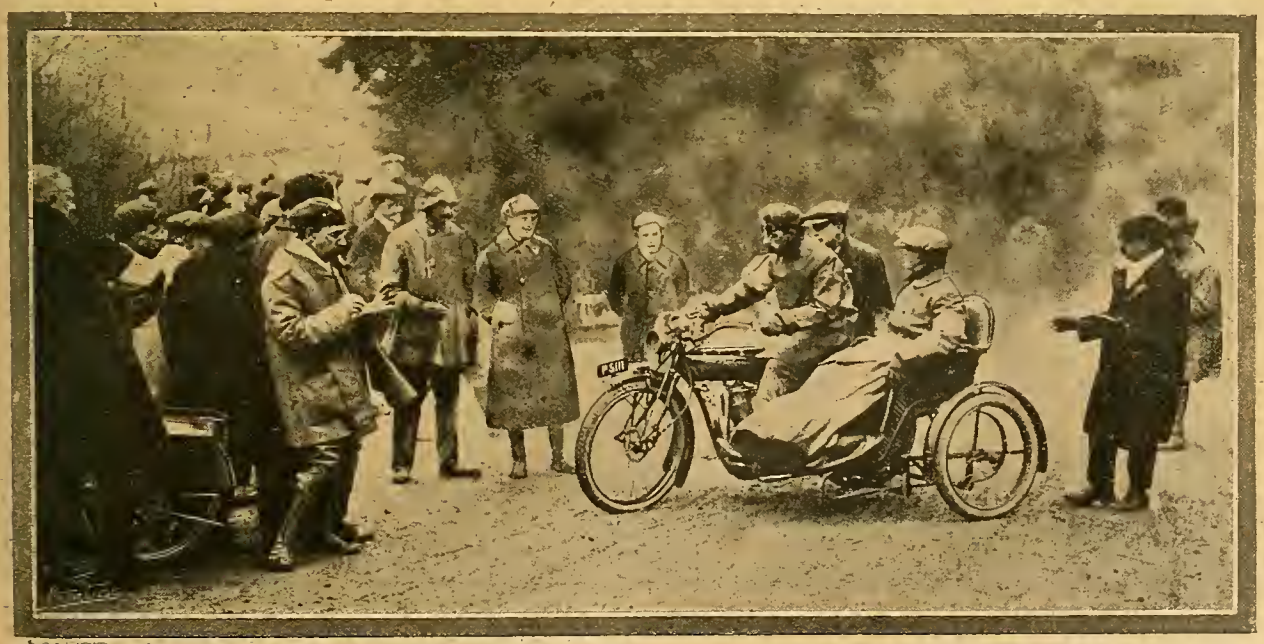
The following passengers performed remarkably well: E. B. Ware (8 Chater-Lea and sc.), H. F. S. Morgan (8 Morgan runabout, with A. G. Reynolds as passenger) particularly good, F. Smith (5-6 Clyno and sc.), S. T. Tessier (8 Bat and sc.), C. R. Collier (8 Matchless and sc.), and A. J. Stevens (5 A.J.S. and sc.), who managed well, despite the excessive slipping of the driving wheel.

The spectators, of whom there were goodly numbers on non-competing machines, were none too careful about keeping the course clear, and several failures were due to the competitors being obstructed.

We have now the unpleasant duty of recording the unsuccessful performances: S. A. Rowlandson (3½ Rudge), V. Tomkins (3½ Rover), Rev. E. P. Greenhill (2¾ Douglas), H. Mills (3½ Premier), who was baulked by J. Kear (3½ N.S.U.), N. O. Soresby (3½ Rudge), R. Hare (2¾ Enfield), H. Johnson (3½ Triumph), who assisted with his feet, O. C. Godfrey (7 Indian and sc.), B. A. Hill (7 Indian and sc.) assisted with his feet, but completed the ascent, H. G. Ayers (3½ A.S.L.), F. E. Pither (2¾ Enfield), F. Hill (5-6 A.C.), C. O. Roberts (3½ Rover), W. S. Stagg (5-6 A.C., the dash of which was broken), J. Chater-Lea (8 Chater-Lea), whose failure was solely due to back wheel slip, T. R. Trotter (3½ B.S.A.), E. Frasetti (7 Indian and sc.), E. Vallis (5-6 Clyno and sc.), baulked by a private owner, W. O. Oldman (8 Bat and sc.), who later had the whole combination turned over by a cart, R. E. Guest (8 Matchless and sc.), and A. J. Luce (6 Zenith and sc.), who then retired.

But after Cudham the marking of the route was a little better. Before reaching Seal we passed V. Tompkins (3½ h.p. Rover) repairing a puncture. After leaving that place there was a long winding hill to climb, which, however, caused no failure. Next followed a four miles stretch of the greasiest road surface it is possible to imagine. It was soddened with the continuous rain of the last few days, and even the motor cycles caused deep ruts as they passed over it. A sigh of relief was breathed when this section was left behind. Imagine then the feelings of the competitors when a P. and M. rider, failing to find arrows at any of the cross roads, decided that the men had taken the wrong turn, and commenced to retrace his wheel marks! The majority, however, preferred to keep on, and after many conjectures as to the right road and failure to find any names referred to on the route card, a party of twenty or thirty came to a standstill utterly flabbergasted. F. C. North went to a cottage to ask the way to Moreworth, according to the route card. The mystery was deepened when the reply came that no such place was known in that district. The real name, it appears, is Mereworth—pronounced Merryworth—which accounted for the misunderstanding. On the route was a certain Roughway Hill, and here an observer waited for two hours, and not a soul came by. *All* the competitors left the course at this point.

The denunciations of the A.C.U. and its methods were now thick and fast, and pronounced in no uncertain manner. Thus early the trial had developed into a farce, and thereafter no



E. Frasetti (7 h.p. Indian and sidecar) stops on Cudham; due to over gearing.

The A.C.U. One-day Trial.—



T. R. Trotter (3½ h.p. B.S.A.) and H. A. Shaw (3¾ h.p. Scott) at the second corner on Cudham.

one regarded it seriously. Competitors continued their own way, and by pure guesswork eventually did find a direction arrow to Plaxtol, and away we all went for Paddock Wood, near which place we actually found an A.C.U. official at a convenient stop.

At the next village we stopped to notice, as the competitors filed past, the most silent machines. We particularly made notes of the quietness of the P.V.-Jap, Scott, twin A.J.S., Hill's Indian, and Smith's Clyno sidecar. S. A. Rowlandson (Rudge) had a sideslip at Goudhurst. Nearing Tunbridge Wells, Spray Hill had to be climbed, but caused no failures.

The crowd which watched the riders arrival and departure from Tunbridge Wells might not have evinced the interest they did in the A.C.U. trial if they had been aware of the many weaknesses of its organisation.

The machines were stored at Rawson's Garage, and lunch was served at the Castle Hotel.

The Afternoon Run.

Leaving Tunbridge Wells, a southerly course was struck *viâ* Forest Row to East Grinstead. Still the all-important arrows on such an intricate route were missing, and it would be a surprise to us to hear that any single competitor kept on the right track. Near Forest Row a competitor took a wrong turning, realised his mistake and suddenly pulled up, which caused our photographer to crash into him, the latter escaping with slight injuries. Turner's Hill, outside East Grinstead, is a winding ascent two miles in length, which brought low gears into requisition. We allowed twenty or thirty competitors to get ahead, and then continued our way. In three miles we came to a fork, and A.C.U. officials on board a Humber car told us that at least a dozen riders had taken the road to the right, whereas the left-hand road was the correct one. Leith Hill, we imagined, would cause some failures, though we personally saw no one stop. An official was posted here. It now came on to rain, and it simply poured, so everyone scurried to Horsham, where, at the King's Head Hotel, tea provided by *The Motor Cycle* was in waiting for the rain-soaked competitors.

Here we got into conversation with two private owners of 6 h.p. Enfield sidecars who had followed the competitors round the course, though not competing. We remarked upon the splendid way we had noticed them negotiate the hills, and learned that one of the drivers was a complete novice, and had never driven a motor vehicle of any description except the Enfield of which he had that week taken delivery.

The tea interval was lengthened from fifteen to thirty-five minutes, which announcement still further displeased the disgusted competitors, as it meant a finish in darkness. Presumably the idea was to enable A.C.U. arrows to be put up on the last section.

The roads were simply atrocious, surface water causing competitors many an anxious moment as the engine raced round due to a slipping belt. Quite a number had, however, guarded against this trouble by fitting guards such as we have illustrated on numerous occasions.

The driving rain somehow or other drenched the best of mackintoshes. White Down Hill was the next incident in the trial, and its surface was in a very greasy state. The condition of the road and the awkward corner were the sole difficulties the hill presented. The first arrivals turned up in a blinding rainstorm, and having successfully negotiated the bend were obstructed by an official car. The plucky Mrs. Hardee on a P. and M., closely followed by the gallant W. Pratt, cleverly dodged the obstruction; Edmond (3½ Humber) managed to get by; Lord's Rex, though misfiring, got up, also Rowlandson (Rudge), Gray (Rudge), Newey (Ariel), Tinline (Rudge), Kerr (N.S.U.), Oliphant (Premier), V. Taylor (Rudge), Phillips (Douglas), Drew (Zenith), Soresby (Rudge), Haddock (2½ A.J.S.), Trotter (B.S.A.), O. C. Godfrey (Indian and sc.), Newsome (Triumph), Dixon (New Hudson), H. Berwick (New Hudson), Mundy (Singer), Cheshire (Triumph), Busby (2¾ Humber), Pollock (James), Pither (Enfield), Tomkins (Rover), very quiet, Mills (Premier), who nearly fell, Greenhill (Douglas), Cocker (Singer), Overend (P.V.), N. Ayers (Singer), Brice (Brown), Ball (Douglas), Cook (A.S.L.), J. Ayers (2½ A.J.S.), and North (Ariel), who all made good ascents. Roberts (Rover) and Johnson (Triumph) heeled on the ground, Deacock (Alldays) failed through slipping belt, and Frasetti (Indian and sc.) was unsuccessful.

White Down Hill.

The rain increased in violence as the journey was continued *via* Effingham, and we passed four in quick succession effecting adjustments, viz., G. Cocker, whose 2½ h.p. three-speed Singer had been running splendidly, and climbed all hills *en route*, Frasetti and his Indian, and Fletcher (Douglas). Frank Smith (Clyno) who had been off the route, commenced hurrying to catch up time, and his back tyre burst. How it rained, and what a day to be remembered!

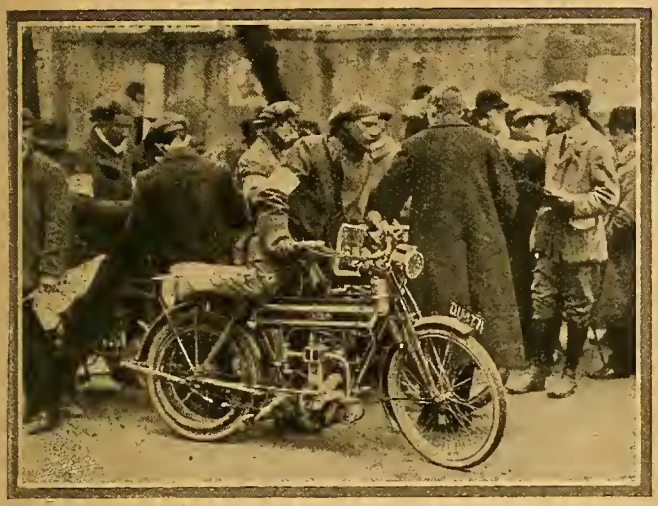
Pebblecombe Hill, the Second Timed Test.

"Pebble" Hill, the last timed ascent (White Down was only an observed hill, on which Captain Davidson officiated), was reached in the dark and pouring rain. Here Captain Nicholl was on duty. He is a keen motor cyclist, but his Clyno had broken down early in the trial. It poured in



At Cudham. F.C. North (3½ h.p. Ariel), who successfully climbed all hills.

The A.C.U. One-day Trial.—



G. Cocker (2½ h.p. three-speed Singer) checking in at Tunbridge Wells, the luncheon stop.

torrents, and was now so dark the men's numbers were indistinguishable, and the timekeepers' watches could not be read. Taylor came up very slowly with his exhaust pipe glowing in the gloom, with men running beside him warming their hands against the pipe. Belts were slipping on many machines, the competitors were tired, soaked through, and miserable, and after a short interval the timing was abandoned. Mrs. Hardee, who had done splendidly up to Pebble Hill, failed at this point, but practically all the remainder who were successful on Cudham again succeeded.

We tore through the grease on our little twin Humber—a more stable machine one could not imagine—and marvelled how it was possible for the engine to keep up its putter-putter under such conditions. But our rejoicing was timed too early; the searching rain at last told its tale by first cutting out one cylinder, and soon No. 2 followed suit. Diagnosing a mysterious trouble under a tree which gave no shelter at all, what time the water trickled down our neck in most discomforting fashion, is all very well to read about, but is not our most favoured occupation. Water in the carburetter or petrol tank we at first conjectured, but ultimately we found that the magneto had ceased work, nor would cleaning or contact breaker adjustments restore the errant spark. Water on the armature was the final diagnosis. We must therefore ask our readers' forbearance for lack of road incidents during the last few miles of the run.

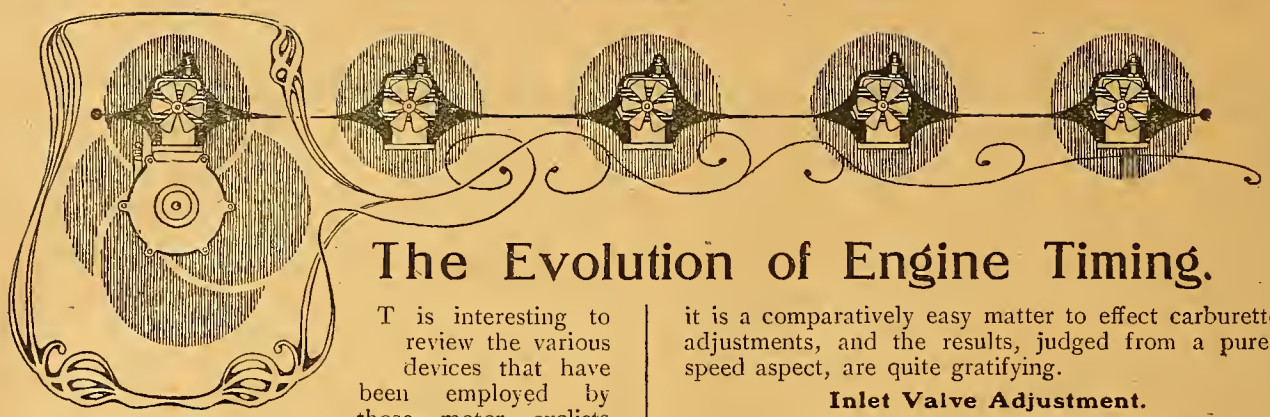
Observations.

Thus ended a fateful day. Men knew not how they got home. Wet and blinded by the rain they came in one by one to Croydon, many having lost their way and wandered miles off the route. Grumbles were heard on all sides, and, to make matters worse, those who were successful learned later in the evening that all their trials, all their troubles, and all the discomfort they had endured had been of no avail. The judges and those of the Competition Committee who were present met together and decided that, as the route had been so badly marked, and there was no means of either observing the men, or of knowing who left the course and who did not, the trial would be annulled. Those who asked for their entry fees back would have them returned, or if they did not ask for them to be returned they could be credited with them on a future occasion. It was decided to run the trial again, preferably near the Midlands, and April 20th was suggested as the date; there was some talk, however, of holding the trial on a Wednesday.

All this trouble could have been avoided by a little enterprise and initiative on the part of the A.C.U. staff. Too much is left to honorary officials, and we must say we cannot refrain from censuring those responsible for the blunder. As the car which was to take the officials to arrow the route did not appear, why could not an official, mounted on a motor cycle, have laid a confetti trail at the last moment? Something must be done and that quickly to prevent a *fiasco* of this kind occurring again.



C. Pressland (3½ h.p. Rudge) and R. G. Mundy (3½ h.p. Singer) climbing Cudham. The gradient at the steepest point is 1 in 4½. Observe the road to Downe winding away in the distance.



The Evolution of Engine Timing.

IT is interesting to review the various devices that have been employed by those motor cyclists whose business or pleasure it is to enter into competition with their fellows, and verily the more one reflects the more one marvels at the assiduity with which the problem of obtaining more speed and power has been attacked. No part of the engine seems to have been left untouched to secure this end, and I propose to make a short article out of the various "fakes" that have come to my knowledge during my motor cycling career, in the hope that it may prove interesting to some, at least, of those who read it.

Ever since hill-climbs became popular about six years ago (I always consider that it was the A.C.U. Hill-climb at Birdlip in September, 1906, which really set the ball rolling), a continual struggle has been waged by, on the one hand, the expert to get the last ounce out of his machine, and the ordinary rider, on the other hand, to find out how he does it. The former of course always tries to keep his dodges as dark as possible, but rumour is very busy in matters of this sort, and as soon as anything leaks out, others are not slow to experiment on similar lines.

Crank Case Release.

The first fake I remember was practised at the aforementioned Birdlip hill-climb, I believe by that redoubtable veteran, Mr. F. W. Applebee, who argued that by removing the crank case drain plug, there would be less resistance to the piston and other reciprocating parts, consequently an increase of power. I should have thought that the consequent lack of "cushioning" action (so well known in steam engine practice) would have militated against the success of this scheme, but anyhow it was stated that a certain engine which would not climb Birdlip with the drain plug in made a creditable ascent as soon as it was removed. No doubt the oil pump had to be kept going! I recollect hearing of this dodge on only one subsequent occasion, and that was when a certain rider, who performed wonders in hill-climbs in 1906-7 on a 3½ h.p. single-cylinder, was discovered one day with a frightfully dirty engine, which vomited oil from the bolts holding the cylinder to the crank case. These had been drilled to act as auxiliary air release holes!

Carburetters did not receive much attention until a well-known *Motor Cycle* noter stated that by using a cork carburetter float he had been able to obtain a remarkable increase in speed—so much so, in fact, that he succeeded in beating even the trade rider of his particular make of machine in hill-climbs. This started a wave of experiment, which has continued to the present day, among amateur speed merchants, as it is a comparatively easy matter to effect carburetter adjustments, and the results, judged from a purely speed aspect, are quite gratifying.

Inlet Valve Adjustment.

So far I have only dealt with single-cylinder machines, and it is a remarkable thing that until this year the motor cycle tuner seems to have confined his attentions to the single-cylinder engine almost exclusively, consequently the twin has not been developed with anything like the same rapidity as the single. Yet there was one rider of the twin engine—need I say that it was Mr. W. H. Wells?—who obtained some phenomenal results in hill-climbs some years back, and I personally ascribe his success in a large degree to the fact that he thoroughly understood the adjustment of the automatic inlet valves. A strong spring and a small opening was the rule with these valves, but after seeing engines with valves that had through wear got a terrific opening and flabby springs to boot, their owners being evidently quite unaware of this primary rule in engine efficiency, I do not wonder that the average twin-cylinder machine of three or four years ago did not do its five horse-power's worth, or anything like it; even when adjusted correctly the automatic valve did not retain that adjustment for long, and it is a laborious business to check lifts and spring strengths every few hundred miles. While considering the subject of twins, we must not forget Mr. Arnott's 5 h.p. V.S. "Humming Bird," with its two inlet valves per cylinder, adjustable sparking plug gaps, and special carburetter with a jet to each cylinder, which machine I consider represents the high water mark of engine faking, beating even his converted Triumph with two additional valves in the valve caps! The "Humming Bird" is credited with a speed of about seventy-five miles an hour, I believe, and was not fitted with an inordinately high gear.

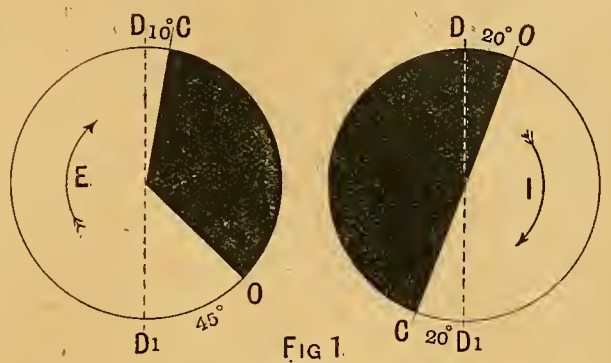
Forced Induction.

This article is not written with the idea of assisting riders to obtain seventy miles an hour from their 500 c.c. engines, but merely to chronicle a few engine fakes of the last few years. As I write I have memories of the picric acid that was at one time mixed with the petrol with the idea of increasing power (*en passant*, it has since been stated that picric acid crystals are not soluble in petrol) of systems of forced induction, for which purpose a pipe is led from the crank case to the inlet pipe or carburetter, of the oil mixed with the petrol, in which a well-known rider at Brooklands has great faith, and the now fashionable rose jet. I think the strangest tuning wrinkle I ever heard of was from a chauffeur, who assured me that if I lubricated the valve stems of my engine copiously with paraffin (!) a marvellous improvement in speed would result!

The Evolution of Engine Timing.—

There is, however, yet another factor in obtaining engine speed—perhaps the greatest of all—which I have not yet touched upon and which has only recently become a matter of common knowledge outside the ranks of the experts. I refer to valve timing. It is, of course, now well-known that a certain very successful rider at Brooklands has a very special valve timing, the secret of which he says he would not sell for £100, and, further than that, I will go so far as to say that, if we except one or two engines, no track records of recent date have been made with the standard valve timing as fitted to road machines. Those riders who have done any scorching at Brooklands and have taken any pains to ascertain their speed either by watch or speedometer will bear me out when I say that (again excepting one or two engines) the road machines do not approach the speed of the track "specials" by a considerable margin—in one case that came to my knowledge by eighteen miles an hour. We advance our ignition a little, we put in a big jet, and we increase the air supply, and do all the other little things that are so dear to the heart of the motor cyclist, and yet apparently similar machines in the hands of the trade rider do infinitely better. We ask ourselves, "What else is there to do?" and our question has long gone unanswered, but I believe "the cat is out of the bag" at last. It is the amount of overlap that is given to the valves. The inlet valve does not wait until the exhaust valve closes before it opens; the closing of the exhaust valve is retarded or the opening of the inlet valve is accelerated, perhaps both, so that both valves are open together for a short space of time, called overlap. The diagrams will, perhaps, make it more easily understood. That overlap timing gives wonderful results may be judged from the fact that Mr. H. Martin's 1¾ h.p. machine has travelled at over sixty miles an hour. I understand, too, that the speed of Mr. C. R. Collier's record Matchless may be ascribed to valve timing. I do not propose to deal with the mechanical side of engine tuning, as that would deserve a special article. Enough if I say that some of the racing pistons are triumphs of fretwork skill!

E. M. OLIVER.



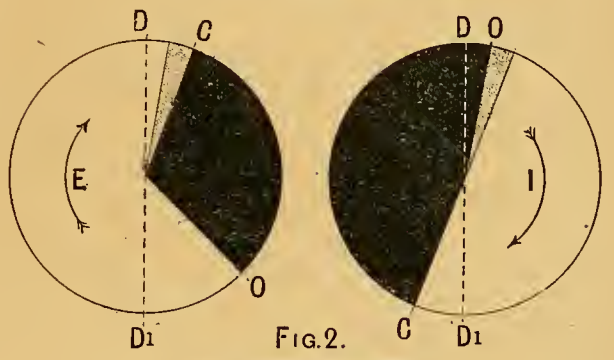


Fig. 1.—Ordinary valve timing.

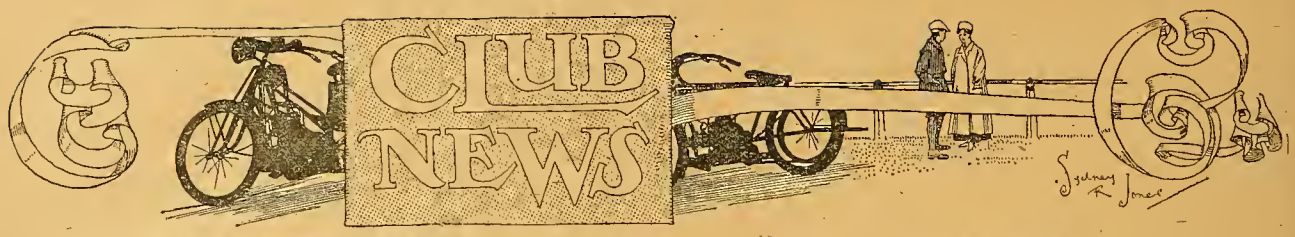
D. Dead centre at top of stroke. D1. Dead centre at bottom of stroke.
E. Exhaust. I. Inlet. C. Closes. O. Opens.

Fig. 2.—Valve timing, showing the overlap of the inlet and exhaust. Each circle represents one revolution of engine. The black parts show when the valves are closed. The overlap is shown shaded.



A BUSY WEEK-END IN CHESHIRE.

The dry roads and sunshine in the North last week-end brought thousands of motor cyclists out from the Manchester district on the famous Chester highway.



Sheffield and Hallamshire M.C.C.

The above club held a whist drive on Thursday, the 29th ult., at Hudson's Restaurant. One hundred members and friends were present.

Southsea M.C.C.

A meeting, to which all motor cyclists are invited, will be held at the King's Hotel, on the 11th inst., at 9 p.m., to discuss the formation of a motor cycle club.

Scarborough M.C.

The annual general meeting took place on the 28th ult., at headquarters, and the following officers were elected: Chairman, Mr. R. W. Ringrose; captain, Mr H. Frain; hon. treasurer, Mr. G. H. Storey; hon. sec., Mr. J. W. F. Tranmer. The first important event of the season will be the hill-climb on Staxton Hill on Easter Monday.

Crossgates and District M.C.C.

The formation of a motor cycling club in this suburban district of Leeds has met with considerable favour. Over forty members have enlisted since its origin (a fortnight ago) and everything points to it being a successful organisation. The first official club run is to take place on Saturday, the 30th inst., at 2 p.m. from the headquarters, Brown Cow Inn, Whitkirk.

Coventry and Warwickshire M.C.

The annual general meeting will be held on Friday, March 15th, at the King's Head Hotel, at 7.30 p.m. A series of lantern slides will be shown during the evening by Mr. T. Blyth Clayton, of Birmingham. Next day (Saturday) the opening run and speed-judging competition will take place, meeting at the residence of the president, Mr. M. J. Schulte, Hill Crest, Kenilworth, at 2.30 p.m. It has been decided to award *The Motor Cycle* 50 guinea cup for the best aggregate performance in competitions during 1912.

Otago M.C.C. (New Zealand).

A slow hill-climbing competition was held on the road leading up to Vauxhall on a recent Saturday, when, despite the showers which fell, an interesting afternoon's sport was provided. The competitors were divided into pairs, and the last man up of the two was declared the winner of that trial. The machines were not allowed to be geared below 6 to 1. The winner, A. McDougall, had his machine beautifully tuned up, and well deserved his victory

Bristol B. and M.C.

The open hill-climb will take place on April 27th.

Blackburn M.C.C.

The second annual hill-climb will take place at Waddington Fells on April 5th. There are two open classes, and ten classes for members, one being for old machines, which should afford an interesting means of comparison.

Mersey M.C.

A breakdown competition was held on Thursday, the 29th ult., at headquarters. On Friday, the 8th inst., at 7 p.m., at headquarters. Mr. Chas. F. Larkin, F.R.C.S., will give a description, illustrated by lime-light views, of a "Motor Tour in the North."

Doncaster and District M.C.C.

A most successful gymkhana was held on Thursday evening last, the 29th ult., at the Doncaster Roller Rink. There were fourteen entries for each event, but owing to the limited time, and the number of entries, the last event (Victoria cross race) had to be postponed to a future date. The winners of the gold medals for the two events were: Balloon breaking, Mr. C. Barnsdale (3½ h.p. Rex); musical chairs, Mr. F. H. Dunstan (3½ h.p. Rudge).

Bristol M.C.C.

The recent dinner was a great success, about fifty members being present.

A lecture was given by Mr. A. E. Bennett, of the Bosch Magneto Co., on Wednesday, the 21st ult., at which over 160 were present. Forthcoming events are: Opening run dinner and speed-judging competition on March 9th. Lecture on "Speed and Power," by Mr. MacMinnies on 14th. Inter-club trial with Exeter and District M.C.C. on 23rd. Members' competition on 30th. The open hill-climb is on April 20th.

Belfast and District M.C.

At a meeting held on the 29th ult., the final arrangements were made regarding the open hill-climbing competition on April 8th on Knocksaughey Hill, which is near the famous Giant's Causeway in the North of Ireland. The gradient of this hill, which is on a principal county road, is 1 in 3½. A very hearty invitation is extended to all cross-Channel riders, many of whom have already signified their intention of being present. Full particulars from Mr. William Kearney, 53, Donegal Place, Belfast.



Cambridge University M.C.C. half-mile speed test at Pampisford last Saturday, which was abandoned owing to the pouring rain
1. Reid (Triumph) in the class for standard touring singles. 2. General view of the starting point.

Club News.—

Hampshire M.C.U.

At a committee meeting held at Winchester on February 28th a provisional programme was arranged. Early events are as follows:

April 5th.—Meet at Salisbury.
,, 28th.—Meet at Brooklands.
May 15th.—Social meet and hill-climb at The Grange, Alresford.

North Staffordshire M.C.C.

The first annual meeting will be held this evening at the club headquarters, the Saracen's Head Hotel, Hanley, at 7.30 prompt. Any local motor cyclists who wish to join the club will be heartily welcomed. A very attractive sports programme has been proposed for 1912, including several invitation events.

North Middlesex M.C.C.

The opening run will take place on March 16th, starting from headquarters, Ye Olde Gate House, Highgate, at 2.30 p.m. All keen motor cyclists are cordially invited. Those members who intend to take part in the Easter tour and reliability trial should notify the hon. secretary at an early date.

Cornwall M.C.C.

The annual dinner and meeting was held at Clywas Hotel, Truro, on Friday, February 9th. The following officers were duly elected for the ensuing year: President, Dr. Meace; captain, Mr. Tressider; hon. sec., Mr. A. C. Sims. All Cornish motor cyclists are invited to join, and any particulars may be obtained from the hon. sec., Mr. A. C. Sims, "Tedworth," Enys Road, Camborne. Several cups have been presented to the club for competition.

Liverpool A.C.C.

The first of a series of short-distance non-stop trials was held on the 25th ult. Nine members made non-stop runs.

The other trials of the series will take place weekly till Easter, as follows, starting at 10.30 a.m. March 10th, Sefton Arms, Aintree, to Southport; March 17th, Sefton Arms, Aintree, to Parbold; March 24th, Broad Green to Runcorn and Chester; March 31st, Broad Green to Hale (circular route).

Other early events are the breakdown competition and penalty run to Kendal.



James Hodgson (3½ h.p. T.T. Bradbury), winner of the Transvaal single-cylinder motor cycle championship for 1912. He covered 3½ miles on the road in 8 min. 39⅘ secs.

Llanelly and District M.C.C.

A meeting will be held at the Thomas Arms Hotel on Tuesday next, the 12th inst., at 7.30 p.m., for the purpose of forming a motor cycle club. All motor cyclists in the district are cordially invited to be present.

Derby and District M.C.C.

The result of the re-run winter trials for the Russell Cup was: W. H. Orme (Rudge), first; A. L. Spriggs (Bradbury), second. G. Brough (6 h.p. Brough) secured equal points with the winner on time, but was disqualified for pumping up tyre during the interval after first circuit, this not being allowed by the rules. Next event, invitation run to Abbots Bromley and Lichfield, March 16th.

Oxford M.C.C.

A special general meeting was held on Monday, the 19th ult., when a proposal was put forward to inaugurate a club room for the use of members, and it was resolved that a room should be taken at the Hotel Restaurant Buol, which should be fitted up entirely for the convenience of members. It was decided that a special subscription of 5s. should be charged to members desirous of using the room, over and above the club subscription.

Leicester and District M.C.C.

At an extraordinary general meeting, the position of the trade members was discussed and the following definition proposed: "That a trade member is any member who is directly interested in the sale of motor-driven vehicles as a source of income." It was moved that no trade member hold office or take executive part in competitions. Both motions were defeated, so that the position remains as before.

Manchester Amateur M.C.C.

A hot-pot supper will be held in the Mosley Hotel, Piccadilly, on Monday, March 11th, at 7 p.m. After supper a Triumph engine will be dismantled and put together again by a mechanic, through the courtesy of the Triumph Cycle Co. Tickets 2s. 6d. from the secretary. All amateurs cordially invited. The Easter tour will start on April 5th from the George and Dragon Hotel, Cheadle, at 9 a.m. The route to be followed includes Hereford, Ross, the Wye Valley, Aberystwyth, Dolgelly, Beddgelert, and Bettws-y-Coed.

Durham and District M.C.C.

A fault-finding competition was held at headquarters, Neville's Cross Hotel, on Saturday, February 24th, there being a record attendance. The late chairman, Mr. W. P. Robinson, who set the "fault," presented the prize, which took the form of an excellent pair of overalls. As no competitor succeeded in locating the fault at the first attempt of six minutes' duration, a second "round" was arranged, and in this only two competitors succeeded. Result: First, Mr. C. F. Christon; second, Mr. R. W. Holmes. Immediately after the competition, the chairman, Mr. G. Harrison, presented the late chairman (who is leaving for the South of England) with an inscribed silver cigarette case from the members of the club as a token of respect and gratitude for his past services as chairman and honorary treasurer of the club.

CONSUMPTION TEST IN AUSTRALIA.

The Motor Cycle Club of South Australia held a petrol consumption test on a hilly course of thirty miles, at Northfield, on January 20th, with the following results:

	Rider and machine.	Weight.	m.p.g.	Ton-miles per gall.
1.	H. Ragless (Triumph) ...	345	137.4	21.1
2.	A. J. Hinton (Norton)...	382	120.4	20.5
3.	J. Maggs (Triumph) ...	350	130	20.3
4.	T. Ragless (Norton) ...	346	131.3	20.2
5.	H. C. Pobjoy (Triumph)	387	116.8	20.1
6.	V. K. Towde (Triumph)	380	112	19
7.	G. G. Wadey (P. and M.) ...	323	126.2	18.2
8.	C. Lindsay (J.A.P.) ...	331	113.4	16.7
9.	C. Churchward (W.C. Lewis)	389	93.4	16.2
10.	E. Lewis (Triumph) ...	329	102.5	15
11.	F. C. Walters (Twin J.A.P.)...	443	63.2	12.5

W. Courtney (Lewis), H. J. Gilbert (B.S.A.), F. C. Gogler (Rex), and E. Lienert (Norton) were disqualified for dismounting.



A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Radiators on Exhaust Pipe.

I was much interested to see in your issue of February 1st a letter suggesting brazing on fins to the exhaust pipes. As I am experimenting with silencing devices on a noisy 8 h.p. twin, which I intend taking to a hot and hilly part of India, this idea seems to me to be of double assistance. I shall, therefore, be extremely obliged if you will tell me what objections there are, if any, to carrying out this idea, at any rate for a short distance along the exhaust pipe.—H.W.S.

We see no objection whatsoever to your making experiment of this idea. It can do no harm, and, on the other hand, may do a great deal of good.

Easy Starting.

I own a 3½ h.p. Minerva a.o.i.v. which when going is a thing of joy; it is, however, very difficult to start. I think this is due to the flywheels being rather small. The compression is perfect. It will not start slowly. I have tried all the usual tips, but in vain. I shall, therefore, be extremely obliged if you will advise me? I wondered if you knew of a decompressor.—T.F.S.

The firm in question never made a 3½ h.p. engine with a.o.i.v. With regard to your trouble, you might obtain easier starting if you fitted an A.M.A.C. decompressor, sold by the Aston Motor Acessories Company, Aston Road, Birmingham, or the variable compression device made by Messrs. Packer and Prentis, Roden Street, Ilford.

Bath to Margate.

Please give me the best route from Bath to Margate, with a Triumph sidecar. I want, if possible, to call at Woking. Perhaps you could give me a route to call at Woking and another way back?—R.A.

Your best route would be as follows: Bath, Chippenham, Calne, Malmesbury, Hungerford, Reading, Wokingham, Sandhurst, Bagshot, Brookwood, *Woking*, Ripley, West Horsley, East Horsley, Dorking, Reigate, Redhill, Godstone, Westerham, Riverhead, Seal, Maidstone, Charing, Canterbury, and Margate. You could not do better than follow the same route back as far as Dorking; after that go through Guildford, Farnham, Odiham, Basingstoke, Whitchurch, Andover, Ludgershall, Upavon to Devizes, Melksham, and Bath.

The Need of Rebushing.

There is clearance in the big and little ends of my 1911 twin to the extent of nearly 3-32in., also a perpetual knock if the engine is working hard—fast or slow. I think it needs rebushing, and that the cause was that the flywheels went out of truth a little while ago. I should be glad of your opinion on this. I have only run 3,600 miles, and feel sure rebushing should not be required so soon. If rebushing be the remedy, could you give me the names of firms who would do this thoroughly well?—W.A.E.

We should strongly advise you to put the machine in the hands of a repairer at once. It should not be run a moment longer than you can help with so much play in the big end. Probably it would be more satisfactory to take the machine to the makers than to employ a repairer, as no one can tune the machine up better than the makers themselves after fitting the new bushes.

Oil in Magneto.

I have a two-speed 4 h.p. 1909 Roc about which I would like some advice. (1.) How often should the magneto be oiled, and what effect would over-oiling have, and what spares should be carried for the magneto? (2.) How often should the engine have oil, the pump being a fair size? (3.) How far could one run on low gear without doing damage to the engine? (4.) I do not understand the mechanism of the two-speed gear. If anything goes wrong, what is it likely to be, and could a roadside repair be effected, and in case of breakdown could the spokes of the belt rim be wired up to the back wheel and thus make a temporary fixed gear?—TEMPUS.

(1.) You should oil the magneto about every 200 miles. Over-oiling will interfere with the efficiency of the magneto by spoiling the contact of the carbon brushes; it is easily wiped off. Very excessive oiling might damage the insulation of the winding on the armature. It is really best to carry a set of Bosch spares, or, if you do not care to carry all these, a spare high tension carbon brush and platinum points. (2.) Give the engine half a pumpful every five or seven miles. (3.) Do not run on the low gear longer than you can help, as it tends to overheat the engine. This is the only advice we can give you in this respect. It is possible, under exceptional circumstances, that you might have to use it for one mile if you are touring in a hilly district, but usually you would only have to use it just on the stiffest part of the hill, if your machine is developing its full power. (4.) The gear is lucidly explained in "Motor Cycles and How to Manage Them" (which can be obtained from these offices, price 1s. 2d. post free). The difficulty is more likely to occur in the low gear, and, in the case of a breakdown, the high speed clutch would lock the whole gear solid.

Too Thick an Oil.

I own a 2¼ h.p. Royal Enfield, and have great difficulty in freeing the pistons during cold weather. I inject paraffin usually, but when it is freezing I am obliged to warm the cylinders with a blow-lamp. I used to use Price's B lubricating oil, but lately have used Vacuum Mobiloil. Once the cylinders become warm they work freely.—C.T.R.B.

We can only think that you are using rather too thick a brand of oil for the cold weather. You may safely use water-cooled Vacuum oil or Huile de Luxe. You certainly should not have to warm the cylinders with a blow-lamp.

Numbers on Cardboard.

A friend of mine was out for a spin a few days ago and unfortunately lost his back number plate, and as he could not secure a proper plate, he got a piece of cardboard and printed the number in full on it and fixed it where the original plate was. While riding through the town of Eastbourne he was stopped by a police constable for not having a proper plate on his machine. Are there any regulations that the numbers must be printed on a standard plate? Can anyone be prosecuted for riding a motor cycle with the letters and numbers in standard size on cardboard?—A.C.

The law says that the letters must be of certain dimensions, and white letters on a black ground. Under the circumstances, a reasonable bench of magistrates would dismiss the case, but, strictly speaking, to print them in black on cardboard is against the letter of the law. If you are a member of any motoring organisation we should recommend you to take it up with their Legal Department. If the letters had been of the correct size and were white letters on a black card, the police would have had nothing to say.

Throttle and Valve Opening.

Kindly inform me on the following. I have a 2¼ h.p. Rex 1903 motor cycle, and recently had it fitted with B. and B. carburetter, h.b. control, but it does not answer to the throttle. For instance, after I have it half open a further movement does not make any difference to the engine speed.—J.M.

Possibly you have the wrong combination of jet and adapter. The former should be about .028 and the latter .42. Or if you have the universal pattern, try the lever in the middle and five holes open. It is, however, more likely that the inlet valve does not open far enough, or that the ports are too small, in which case no further opening of the throttle can have any effect. You can obtain sets of jets from Messrs. Brown and Barlow, Westwood Road, Witton, Birmingham. Tell them the bore of your engine and they will send you suitable sizes.

Dry Cells and Trembler Coils.

My machine is a 3½ h.p., and quite modern in every way except ignition, which is accumulator. I ran it nearly all last year, and never had any trouble with ignition, only the bother of having my accumulators re-charged. I have been advised to try dry batteries. Do you think it possible to run with them and a trembler coil and wipe contact breaker? About how many miles would an ordinary size battery run?—J.C.D.

We should advise you to communicate with Mr. A. H. Hunt, 115, Cannon Street, E.C., or Messrs. Siemens Bros., Woolwich, and tell them you require one of their dry batteries. Also send up your coil at the same time and get it tested. If they report that it is too extravagant in current you would have to purchase probably a specially economical trembler coil, otherwise the battery will very quickly run down. On the average, however, they should last about 1,600 miles each. It is advisable to carry two batteries connected by a switch, and use them alternately.

A.O.I.V. on Small Twin.

I am being offered a 1909 pattern 2¼ h.p. Moto-Rêve for £14. From the present owner's description it appears to be in good order and sound. I have been looking up some back numbers of *The Motor Cycle*, of which I have been a reader many years, and I am under the impression from an illustration of a 1909 Moto-Rêve that same has a.o.i.v's. Am I right in thinking so? For a lightweight of this type have m.o.i.v's. any advantage over a.o.i.v's? Also can you tell me what type of magneto was fitted to these machines? I shall be obliged if you will favour me with your opinion of the 1909 Moto-Rêve, and shall be pleased to know if you consider it a reliable machine.—W.M.

Yes, the machine in question had automatic inlet valves. Mechanical inlet valves have an advantage on a twin, though we may say in this particular case automatic valves work well. The magneto fitted to this machine is one specially made for the Moto-Rêve Company by a French firm. Both machine and magneto are quite satisfactory.

Macclesfield to Benfleet, Essex.

Please tell me the best way from Macclesfield to Benfleet (Essex). I have a 3½ h.p. two-speed N.S.U. and sidecar, so should like to avoid very bad hills and also much traffic.—H.S.J.

Your best route would be as follows: Macclesfield, Leek, Ashbourne, Derby, Loughborough, Melton Mowbray, Oakham, Stamford, down the Great North Road through Wansford, Stilton, as far as Huntingdon (in the neighbourhood of which drive with great care), then strike from Huntingdon to Cambridge, and on through Bishop Stortford, Harlow, Chipping Ongar, Brentwood, Billericay, to Benfleet. We do not think you will find any serious hills on this route.

One Cylinder won't take Air.

I have a small twin which has lately had new big end bearings and gudgeon pins fitted. When the engine was reassembled, the back cylinder refused to fire, except when the extra air was completely closed. Under normal conditions, the extra air is half open. The front cylinder takes the same amount of air as usual. There is a good spark at the plug. The valves do not stick and have the correct amount of clearance. There is no air leak that can be discovered, and the throttle slide opens correctly. Is there anything else that should be seen to, and is this at all a usual complaint with twin engines?—F.W.C.G.

The trouble might be due to the piston rings of the back cylinder being in line. You do not say what machine you are using, but if your carburetter is of the type that has a jet for each cylinder, you will find, in all probability, that the back cylinder jet is stopped up, in which case the front cylinder will be covered with soot owing to running on too rich a mixture. We have not experienced this trouble when the same jet has supplied both cylinders.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"T.H.O." (Oxford).—5-6 h.p. 1912 Clyno.

"P.W." (Crowland).—Mabon gear on 3½ h.p. motor cycle.

"G.C." (Yardley).—2¼ h.p., 3 h.p., and 3½ h.p. Lincoln-Elks.

"J.N." (Southport).—Bowden extra air inlet on engine fitted with ordinary carburetter.

"M.A.A.C." (Parkstone).—3½ h.p. 1912 chain-driven Bradbury, two speeds, and 1911 Scott with sidecar.

"C.M.W." (Blackburn).—3½ h.p. two-speed Lincoln-Elk with sidecar.

"E.A.O." (Sydenham). — Armstrong three-speed gear for sidecar.

"P.S." (Wigan).—2 h.p. Motosacoche free engine model.

"F.R.C.S." (Dublin).—2¼ h.p. shaft-driven F.N.

"E.R." (Harleston).—Mabon gear with Triumph and sidecar.

"J.S." (Totton).—Atlas puncture-proof inner case.

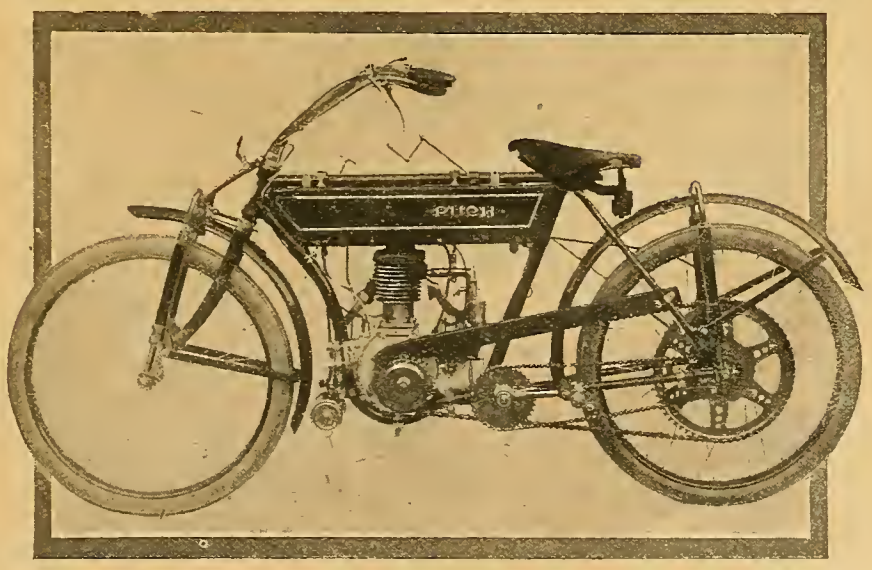
"Rex" (Chichester).—Armstrong three-speed gear for sidecar.

"W.H.G." (Bristol).—3½ h.p. two-speed Humber and sidecar, combined weight 18 stones.

"F.W.D." (Doncaster).—N.S.U. two-speed gear and Mabon variable gear on 3½ h.p. motor cycle with sidecar.

EDITORIAL NOTE.

The Editor disclaims all legal responsibility in any way for loss of copy in the form of manuscript, drawings, or photographs submitted to him. Rejected manuscript, drawings, and photographs will only be returned provided a stamped addressed envelope is enclosed for the purpose.



2½ h.p. Puch spring frame machine with single chain drive and two-speed hub gear. This Austrian make of motor cycle has an excellent reputation and should soon gain a hold in this country. All Puch machines have footrests, Zenith carburetters, and Dunlop tyres.

British Tyres in Paris.

The makers of the Wood-Milne steel-rubber tyres and belts are building up an extensive Continental business, with a depot at 212 ter. Boulevard Pereire, Paris, as a base

War Office Tests.

As a result of the success of the P. and M. in the recent War Office test at Brooklands, the firm has received an order from the War Office for machines to be supplied with a view to more prolonged trials under severer conditions.

Open all the Week End.

Many garages are not open all day on Sundays, but Mr. D. R. Clarke, of the Century Motor Works, St. Albans, informs us that his garage is open during the whole week-end, usually from 8 a.m. to 8 p.m., but later if necessary.

Rand M.C.C Competition.

On the 17th December last H. L. Weddell, riding a 3½ h.p. T. T. James, was successful in winning the Excelsior Trophy put up by the Rand M.C.C., South Africa. In this competition reliability, petrol consumption, and speed on the level and up-hill were taken into consideration. The petrol consumption worked out at 162 miles to the gallon, which is an excellent performance for an engine of 557 c.c.

1912 Improvements.

The oil tanks and forks of the Wilkinson T.M.C. have been recently re-designed, and the machine in its final form presents a very neat appearance. The front forks used will be the Saxon.

The neat little Grandex lightweight with its graceful frame dropped at the rear, which was favourably reviewed in *The Motor Cycle* Olympia Show report, will in future, be supplied with a light form of two-speed engine shaft gear specially made by the N.S.U. Company.

New Friction Driven Cyclecar.

Messrs. Robertson's Motor Agency, 157, Great Portland Street, inform us that they have secured the sole London and Southern Counties agency for the Lurquin and Coudert four-wheeled cyclecar. This vehicle is friction-driven and fitted with a 9 h.p. twin-cylinder water-cooled engine. The gear provides five speeds forward and a reverse. The same firm specialises in part exchanging second-hand machines for new Nortons, the balance being paid in cash or spread over monthly payments.

A Useful Handbook.

"All About Dunlop Tyres," 1912 edition, runs to nearly sixty pages. In addition to other items of interest to motor cyclists, it contains information about tyres and their treatment. Statistics in this booklet show that 371 Dunlop motor cycle tyres were fitted to machines at the last Show, or 32.77% of the total number exhibited on machines. Of belts fitted to motor cycles, Dunlops were on 25% of the machines shown, an advance of 17% on the previous year. Motor cyclists can obtain a copy of the booklet from any of the Dunlop Tyre Co.'s depots, or the head office, Aston Cross, Birmingham.

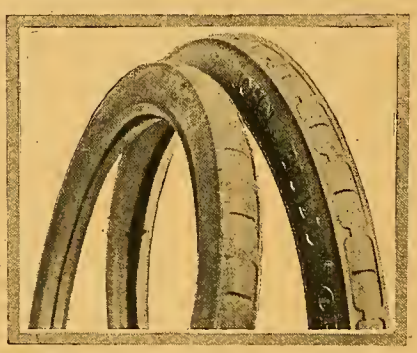


Interchangeable Wheels.

Mr. J. McGhie Lamb, whose interchangeable and quickly detachable wheel was described and illustrated on the 15th ult., page 190, informs us that several important motor cycle manufacturers have written asking for information regarding terms of licence.

Tyre Reliability.

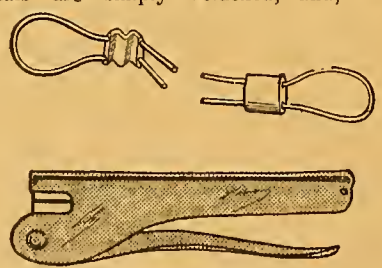
The accompanying illustration depicts two John Bull Cross Groove covers made by the Leicester Rubber Co., Granby Works, Leicester. We are informed that the cover which shows the most signs of wear has done 12,000 miles, and the



newer one, shown on the right, has done 8,000 miles. These covers are vulcanised while subjected to great pressure, which causes the tread to be exceedingly tough, and also has the effect of forcing the rubber into the foundation.

A New Sealer.

Herewith we illustrate a handy tool for sealing motor cycle parts, for trials, etc. The sealer is only 5in. overall and weighs 6 ozs., so can be easily carried in the pocket. The stamp can be engraved with twenty letters. The seals are simply attached, and, once



affixed, cannot possibly be tampered with without detection. They are already in use with many gas, water, and electrical companies, and can be obtained from the British Porter Safety Seal Co., Ltd., Norfolk House, Laurence Pountney Hill, E.C.

Motor Cycling in New Zealand.

We are informed that at the Boxing Day meeting of the Hawke's Bay M.C.C. held at Hastings, New Zealand, J. Johnson (2½ h.p. Brown) was first.

Three-speed Counter-shaft Gears.

The Albion Engineering Co., Ltd., Tower Works, Upper Highgate Street, Birmingham, are shortly placing on the market a three-speed epicyclic counter-shaft gear, the middle and low gear ratios of which will be 27% and 50% reduction from the high gear. The gear will provide a free engine on all speeds, and will only have one internally cut gear wheel.

Trade Announcements.

The Rom Tyre and Rubber Co., owing to increase of business, have removed to larger and more commodious premises at 36, Brook Street, Holborn, E.C., a few doors from their old address.

Messrs. P. J. Budge and A. G. Daw have taken premises at 69, Leather Lane, Holborn, E.C., and deal in new and second-hand motor cycles and accessories.

Catalogues Received.

The frontispiece of the Bat catalogue shows two contrasts, the famous 2¾ h.p. spring frame Bat, which created such a sensation in 1902, and the 1912 two-speed chain-driven sidecar machine. A short history of this machine is given in the introduction. Each model is lucidly illustrated and described. The spring frame is shown in detail. The spring forks, stand, two-speed gear and other parts are illustrated, and the booklet can be obtained from the Bat Motor Mfg. Co., Penge, S.E.

We are in receipt of the two latest Bradbury publications. The motor cycle catalogue is one in which the various models are described. The other interesting publication is the book of the Bradbury 1912 3½ h.p. machine, which gives useful information regarding the various component parts, and hints on the use and maintenance of this well-known machine. Both booklets can be obtained from Bradbury and Co., Ltd., Oldham.

The latest Palmer Tyre catalogue deals with the three-ribbed, rubber-studded cord tyres and butt-ended tubes; also the ribbed and rubber-studded Palmer Privateer tyres, which are made of fabric, and are much cheaper in price. The booklet of Palmer tyres contains some very interesting information regarding tyre construction, some notes on motor cycle rims and on tyre repairs, and can be obtained from Palmer Tyre, Ltd., 119-123, Shaftesbury Avenue, W.C.

The Lloyd Motor Engineering Co., Ltd., 132, Monument Road, Birmingham, send us their complete catalogue for 1912. L.M.C.'s have been very successful in our colonies, in addition to their many wins in home events, and incidents in connection with these competitions, also tours, are illustrated by means of photographs, many of which are reproductions from *The Motor Cycle*.

The illustrated catalogue of the Coventry Eagle sidecars contains specifications and illustrations of seven separate patterns, all of which can be supplied with numerous alternative chair designs. These sidecars are sold under Millford patents by the Coventry Eagle Cycle and Motor Co., Coventry.

Another British Success!

This is the machine the connoisseurs are talking about so favourably.

The

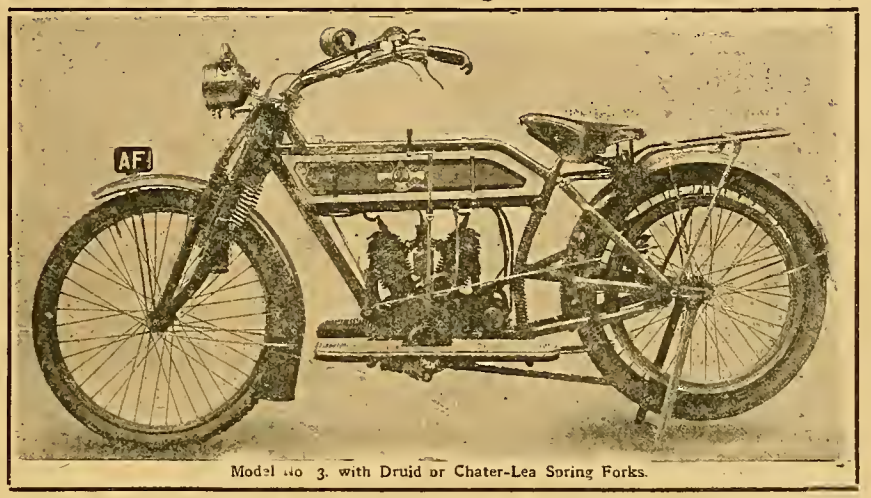
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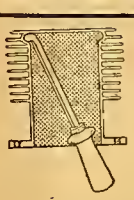
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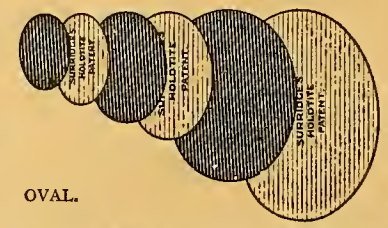
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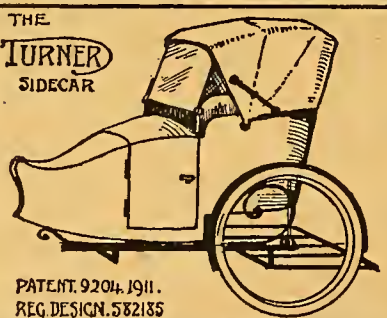
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will soon find a customer for your second-hand machine.

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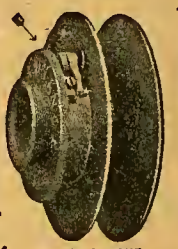
"SEE THAT LEVER?"

Raise it and Pulley is adjusted immediately.

No tools required.
No belt removed.
Fits any machine.
Simplicity itself.

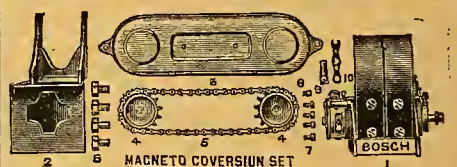
Write at once to

The Advance Motor Manufacturing Co., Ld.
NORTHAMPTON.



Pat. No. 21442/07

"ADVANCE" PULLEY



Snitable for Peugeot and other Engines.
J. TAYLOR, Motor Works, Warwick Rd., BIRMINGHAM.

Oxy-Acetylene Welding

IN ALL METALS.
Sound work, quick delivery, reasonable prices. We are practical engineers and welders of 30 years' experience—not novices. Once tried, custom assured. Also manufacturers of welding plants, and welding and blowpipes. All work guaranteed.
OXY-ACETYLENE WELDING,
349, Lillie Road, Fulham Cross, LONDON.



Repair Outfit Pouch

To carry on Handle-bar.

Pouch only..... 1/-
„ and G.B. outfit 2/3
„ and Patchqnick 3/6

REG. SAMSON,
Ladywood Road, BIRMINGHAM.

THE QUIDOS PATENT CORK FOOT MUFF FOR SIDECARS.



IN WATERPROOF CANVAS.
KEEP THE FEET
WARM
WITH THE NATURAL HEAT OF THE BODY.
Price 8/6.
LEOLINE EDWARDS, 81, ST. MARGARET'S RD., TWICKENHAM.

DON'T LEAVE IT LONGER.
ORDER NOW AT
WAUCHOPE'S
9, SHOE LANE, FLEET ST., LONDON.

TRADE PRICES.

For Cylinders, Pistons, Rings, Connecting Rods, Shafts, Flywheels Crank Cases, Bnshes, Gear Wheels, Cams, Nickel Steel Valves and Pulleys. *Price list on application.*

CYLINDERS REBORED Up to 76 mm. with new piston and rings, Latest two-ring type pistons, 3/- extra. **14/-**

NOBLE & CO., General and Automobile Engineers, 9 and 11, Surrey Row, Blackfriars Road, LONDON, S.E.

ADVANTAGES.

Hitchen's, of Morecambe, are not so conceited as to imagine that you will trade with them for any reasons other than because it pays you; and immediately it interests you to deal with someone else, they naturally conclude that you will do so; but AT PRESENT all the advantages are with you dealing with HITCHEN'S, of Morecambe, as follows:

NO OTHER FIRM in the world can give you such quick delivery of new models. At the time of writing we have ON THE PREMISES—

P. & M.'s, Scotts, Jap-Bats (chain drive and belt drive, with P. & M. two-speed gears), Clynos, Bradburys (two speeds, chain drive models due this next month), F.E. Rudges and single speeds (two-speeds coming through this month), Premiers (lightweights, single speeds, and two-speeds, also lightweight three-speed), Zeniths (3½ h.p., 6 h.p., and 8 h.p.), Lincoln Elks, A.C. Tricars, Triumphs (F.E. models), Matchless (5-6 h.p. and 8 h.p., two-speed gear models), New Hudsons (three-speed gear), Indians (7 h.p., two-speed gear), Indians (clutch models), Motosacoches (two-speed), Humbers (two-speed), and Humbers (lightweights, three-speed).

Besides these, we have other models of the same makes, also Morgan Runabouts and Model K Douglas, coming through; and we would like you to ask yourselves the question: Is there any other firm in the world who has as many as these? Is there any firm in the world who have MORE than these? And we think the answer will be, NO! Hitchen's have the largest stocks in the kingdom, and this they always intend to have.

They CONSIDER THEMSELVES in a position to treat you well, and, if you are WANTING a machine, get on the jump and **telephone, wire,** or **write at once,** stating what machine you want to buy, and your commands shall have prompt attention. You will clearly see the GREAT ADVANTAGES of dealing with Hitchen's, of Morecambe, and of having such a large stock to choose from.

Morecambe MAY BE a LITTLE town, out of the world in many things; but it is in MORECAMBE where Hitchen's, of Morecambe, are located. It is in MORECAMBE where the LARGEST stocks of Motor Cycles in the whole world are stored, and it is to MORECAMBE you ought to come, or write, when you want to buy a Motor Cycle. Just in the same way as Port Sunlight is noted for soap, so Morecambe is noted for Motor Cycles; and, as Port Sunlight has risen by the sale of soap, so Hitchen's, of Morecambe, are RISING by the sale of Motor Cycles!

Another of the SEVERAL ADVANTAGES that we wish to drive home to you is that you NEED NOT BE FAST as to HOW you are going to buy a Motor Cycle. Our system of business is as flexible as indiarubber: You are simply asked how you want to buy, and what you want to pay for it. If you cannot answer these two questions, then you don't want a Motor Cycle.

Get on the jump and write to Hitchen's at once and say what you want to buy and how you want to pay for it, and whether you have anything to swap or not. If you have anything to swap, say what it is. Don't write for cash terms, and at the finish say there is SOMETHING THAT YOU WANT TO SWAP, and pay the BALANCE on the DEFERRED. If you are asking for a cash price, we want the money, and no PROMISES to PAY so much per month. We can CUT THE THING FINE for cash down.

We consider that if a man is paying for a machine in twelve months that he is having the advantage of our money, and therefore he should not expect us to cut all the profit away for his benefit. IN ANY CASE you will find OUR TERMS, whether Cash, Exchange, or Deferred, better than other dealers. You must know that no man has anything to GIVE AWAY; and if you are out to buy a machine, you will find Hitchen's, of Morecambe, will be able to do as well for you as anyone else, and BETTER THAN MOST.

DON'T place your order with the little trader who has machine ON ORDER for delivery so-and-so: **he may have,** but **he may not**—and most likely will not get it at the time mentioned, and you are then "up the pole." The proper way is to buy from Hitchen's now, when it is HERE in the garage, and then you are sure of getting it.

The advantages to the trade in dealing with Hitchen's, of Morecambe, are VERY GREAT. Hitchen's have purchased £45,000 worth of Motor Cycles, and can always accommodate the trade by exchanging what Hitchen's have for what the trade has; or, on the other hand, let them have machines (where the makers have no objection) at a trade discount. There is no branch of the business that Hitchen's do not take up, unless you call the fact of giving a machine away a branch of the business; if so, this is a line that we are not interested in at the moment. We can nearly give something away, however, as we have a few accumulator machines at the very modest and interesting price of £4 19s. 11½d. If the bhoys have a £5 note in their pocket, and will blow over to Morecambe, they can have one; but don't ask for one of these on the DEFERRED payment terms, as it is in this case "dibs" down, or we keep the machines.

We want everybody to ride a motor cycle, but we want the bhoys who expect to get a 1912 machine for £3 down please note we cannot accommodate them in this direction. If they are prepared to pay down from one-fifth to one-third down, we can then do business, and look forward to hearing from them.

Don't imagine that, because we have this week spoken of nothing but new machines, that we have no second-hand ones, because we HAVE. There are close upon 200 here stored at Morecambe, and lists of these are printed every week. If you have not got one, you **should have one.** Get on the move and GET ONE: a postcard will DO THE TRICK. At the same time, we will send you a long list of accessories that we want to get rid of, as we wish them out of the place, and we don't intend to replace them, so NOW IS THE OPPORTUNITY for the bhoys to get something cheap. Our room is too limited for storing and selling accessories. We intend, however, to keep on a few of the leading lines, such as Lucas and F.R.S. lamps, Cowey and Jones speedometers, and things of that kind. So now YOU HAVE IT STRAIGHT! If you want anything, NOW is the time to get it. Look handy.

Remember the old address:

HITCHEN'S,
Morecambe, LANCASHIRE.

Telephone: "112 Morecambe." Telegrams: "Motor, Morecambe."

LUKIN SINGLE CONTROL CARBURETTER.

EXTREMELY SIMPLE. ABSOLUTELY AUTOMATIC. VERY FLEXIBLE.



"The Motor Cycle" says:—

"... We have had the opportunity of giving it (the Lukin) a thorough road test on one of our machines. The Lukin has given great satisfaction under all conditions; it enables the engine to run extremely slow (slower in fact than any standard carburetter we have tried) and at the same time the engine will pick up at once on suddenly opening the throttle, without any of the hesitation which is a feature on only too many present-day carburetters...."

A rider who uses a Triumph machine fitted with the Lukin says:—

"... I need hardly add that the engine keeps much cooler when using the Lukin, as the mixture is always correct...."

A rider who uses a Rudge machine fitted with the Lukin says:—

"... I am getting over 100 miles per gallon. I fully endorse all you say with regard to the merits of the carburetter, which is so much pleasanter to drive with, especially in traffic, than the old-fashioned two-lever type...."

Write for particulars to

LUKIN, LTD., The Ride, Newcomen St., Borough, London, S.E.

SPECIAL AGENTS—

THE SERVICE CO., LTD., 292-3, High Holborn, London, W.C.
H. TAYLOR & CO., 21a, Store Street, Tottenham Court Road, London, W.C.

MOTOR CYCLES BY EASY PAYMENTS

Whiteleys are prepared to supply ANY MAKE OF MOTOR CYCLE on the EASIEST OF EASY TERMS

Interest Charge from 2 per cent.

A TEN POUND NOTE secures delivery, and you can pay the balance afterwards by twelve monthly instalments.

Early Deliveries of

Premiers	New Hudsons	Zeniths
Scotts	Matchless	Swifts
Bradburys	Calthorpes	Clynos
Triumphs	James	P. & M.'s.
Indians	Singers	A.C. Tricars
Douglas	Rudges	Bedelia Cars
Rex-Japs	Bats	Premier Motorettes

Carriage Paid to any Station in the United Kingdom.

WHITELEYS
QUEEN'S ROAD, LONDON, W.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex

SECTION IX
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

Wauchope's STAND ALONE

OVER 50 1912 MODELS.

200 1911 NEW and SECOND-HAND MODELS.

For their great number and variety of stock motor cycles ready for instant delivery and for the early dates at which their contracts enable them to give delivery of the most sought after machines of the year. All who contemplate buying a motor cycle should see Wauchope's great show.

TO-DAY'S BARGAIN LIST INCLUDES:

5011.	3½ h.p. 1911 standard **BAT**	£38	0
5018.	3½ h.p. 1908 2-speed **P. & M.**	£27	10
5030.	3½ h.p. 1911 2 speed **HUMBER** ..	£38	0
5036.	2½ h.p. 1911 **MOTOSACOCHE**	£28	0
5049.	3½ h.p. 1910 free-engine **TRIUMPH**	£38	0
5052.	2¾ h.p. 1911 2-speed **DOUGLAS,** Model E	£42	10
4982.	8 h.p. 1911 **BAT-J.A.P.**	£40	0
4989.	3½ h.p. 1911 2-speed **HUMBER** ..	£36	10
4990.	3½ h.p. 1910 **TRIUMPH,** free engine	£39	0
4993.	2 h.p. 1910 **WOLF**	£18	10
5001.	3½ h.p. 1911 free eng. **BRADBURY**	£40	0
5003.	7 h.p. 1911 free engine **INDIAN..**	£45	0
5005.	2 h.p. 1911 lightweight **HUMBER**	£28	0
5006.	3½ h.p. 1910 T.T **TRIUMPH**	£34	0
5007.	5 h.p. 1910 2-speed **V.S.**	£35	0
5009.	3½ h.p. 1911 T.T. **BRADBURY** ..	£35	0
4944.	2¾ h.p. 1911 **DOUGLAS**	£30	0
4945.	2¾ h.p. 1911 2-speed **DOUGLAS,** Model E	£38	10
4956.	3½ h.p. 1911 2-speed **HUMBER** ..	£37	10
4957.	8 h.p. 1910 **BAT** and sidecar	£40	0
4964.	3½ h.p. 4-cylinder **F.N.**	£12	0
4913.	3½ h.p. 1911 free engine **TRIUMPH**	£42	10
4921.	2¾ h.p. 1911 2-speed **DOUGLAS,** Model E	£38	10
4926.	3½ h.p. 1910 **PREMIER**	£27	0
4933.	3½ h.p. 1909 **TRIUMPH**	£30	0
4939.	3½ h.p. 1909 **TRIUMPH**	£28	0
4941.	3½ h.p. 1911 2-speed **HUMBER** ..	£38	10
4893.	3½ h.p. **PEUGEOT**	£20	0
4903.	3½ h.p. 1911 tourist **REX**	£30	0
4854.	3½ h.p. 1911 free engine **TRIUMPH**	£45	0
4597.	3½ h.p. 1911 **ZENITH-GRADUA** ..	£42	10
4607.	3½ h.p. 1911 **KERRY-ABINGDON**	£32	10
4760.	5 h.p. 1911 free engine **INDIAN..**	£42	0
4863.	3½ h.p. 1911 **CHATER-LEA-J.A.P.**	£35	0
4828.	3½ h.p. 1911 **JAMES**	£35	0
4733.	6 h.p. 1909 **CHATER-LEA,** 2-sp., chain drive, and sidecar	£40	0
4727.	3½ h.p. 1911 **KERRY-ABINGDON**	£32	10
4533.	2 h.p. 1911 3-speed **HUMBER** ..	£35	0
4758.	3½ h.p. 1911 single-speed **HUMBER**	£30	0
4420.	3½ h.p. 1911 free engine **PREMIER**	£42	10
4768.	2¾ h.p. 1911 standard **DOUGLAS..**	£30	0
4575.	3½ h.p. 1911 standard **BRADBURY**	£35	0
4638.	3½ h.p. 1911 free engine **TRIUMPH**	£46	0
4628.	3½ h.p. 1910 **TRIUMPH,** Mabon, variable gear	38 Gns	
5052.	2¾ h.p. 1911 2-speed **DOUGLAS,** Model E	£42	10
5052.	2½ h.p. 1910 2-speed **F.N.**	£28	0
5053.	3½ h.p. 1911 **L.M.C.,** variable gear	£35	0
5056.	2¾ h.p. 1911 Standard **DOUGLAS**	£30	0
5058.	3½ h.p. 1911 **ZENITH-GRADUA** ..	£45	0
5064.	3½ h.p. 1911 2-speed **HUMBER** ..	£38	0
5065.	3½ h.p. 1911 2-speed **HUMBER** ..	£40	0
5066.	3½ h.p. 1911 Standard **BRADBURY,** Mabon clutch	£37	10
5082.	2½ h.p. 1910 **ROYAL ENFIELD** ..	£22	10
5084.	5 h.p. 1910 Twin **REX** Sidette ..	£38	0

ASK FOR TO-DAY'S LIST.

Send details of your used motor cycle, and receive our handsome offer of its utmost value in part payment of a new model.

WAUCHOPE'S,
9, SHOE LANE,
FLEET ST., LONDON, E.C.

'Phone: 5777 Holborn. Wires: "Opificer, London."

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or it "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

1½h.p. Wolf, magneto, tyres new, perfect running order; £14.—Park, 1, High St., Berwick.

1912 Scott and Douglas; order now for early delivery. —Archdale, Bishopton Lane, Stockton-on-Tees.

1911 Scott, in perfect condition, and mechanically sound; owner buying 1912 Scott; price 50 guineas.—Archdale, Bishopton Lane, Stockton.

ZENITH, 1911. 3½h.p. little used, perfect condition throughout, expert examination invited; bargain, £39.—L. S. Parker, Longpool, Kendal.

BRADBURY, 1909, perfect condition throughout, just overhauled, tyres as new, satisfactory reason for sale; £22.—Moon, Westbourne Villa, Darlington.

PREMIER Lightweight, 1912, 2½h.p., brand new, in crate, climbs any hill, fast and powerful; cash only, £32/10.—9,855, *The Motor Cycle* Offices, Coventry.

T.T. Roadster Triumph (done 800 miles), condition like new, tyres unpunctured, many spares, including belt; £41.—9,850. *The Motor Cycle* Offices, Coventry.

MOTO-REVE 2½h.p. Twin late 1910 pattern, been very little run, new carburetter on, in first-class running order; price £19/10.—Apply, W. Wharton, Fourstones.

1912 2½h.p. A.J.S., 2-speed, chain drive, Lycett special pan saddle, delivery from makers 26th February; £43/10.—Blackshaw, 27, Ironside St., Houghton-le-Spring.

REX, 1909¾, 5h.p. twin, fitted with 1910 Roc 2-speed, Whittle, Bosch, new retread combination on back, many spares; approval, deposit; £32.—Apedale, Stockton St., West Hartlepool.

TRIUMPHS, Humbers, B.S.A., Royal Enfield motor cycles, lightweights, 2 speeds, free engines; write, wire, or 'phone for immediate deliveries.—Turvey and Co., The Motor House, Sunderland. Tel.: No. 626.

1911 Humber, 3½h.p., 2-speed, Whittle, and new rubber belt, spare valve, butt-ended tubes, also rigid side entrance sidecar; the combination new in Sept.; £43.—3, Ripon Gardens, Newcastle-on-Tyne.

N.S.U. 5-6h.p. Motor Cycle and conch-built sidecar, 2-speed, free engine, magneto, perfect condition; £27; 3½h.p. Lincoln Elk, 1911 model, as new, cheap; bargains.—Apply, C. H. Mason and Co., West St., Gateshead-on-Tyne.

TWO 1911 Standard B.S.A.'s, £38; two 1911 3½h.p. T.T. roadster Triumphs, £40 each; 1911 brand new 3½h.p. Singer, £40; 3½h.p. Triumph, standard, £28; 2½h.p. Hobart lightweight, £23; 6h.p. N.S.U., 2-speed, complete with Montgomery sidecar, £35; all above perfect, and subject approval; any examination.—Stouts' Garage, Egremont, Cumberland. 'Phone: 1X2.

3½h.p. New 1911 Free Engine Triumph, with 1912 pattern spring fork, complete, lamp, and horn, £52; 1911 Douglas, new, 2-speed, clutch model, £42. —Stout's Garage, Egremont, Cumberland. 'Phone: 1X2.

The Halifax Motor Exchange

Largest Rex Dealers,

16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams, "Perfection."

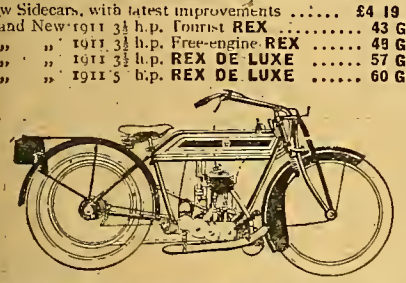
£3 to £5 DOWN and 5/- weekly secures prompt despatch of

Twin **REX**, sprung forks £15 10
Lightweight **MOTOSACOCHE**, spray, runs well .. £14 10
3 h.p. **QUADRANT** £10 10
2¾ h.p. **KERRY**, spring forks £10 10
Twin Magneto **MOTO-REVE**, Druids £15 0
3½ h.p. **WOLF**, spray smart, h.b. control £12 10
3 h.p. **HUMBER**, chain drive £9 10
3½ h.p. **REX**, spring forks, reliable £15 10
3½ h.p. **BRADBURY** £15 0
3 h.p. **ANTOINE**, h.b. control, spring forks £12 10
2¾ h.p. **DE DION** £10 10
N.S.U. Magneto Lightweight £15 10

£7 deposit and 10 - weekly secures—

Magneto **TRIUMPH** £25 10
5½ h.p. Twin **REX DE LUXE**, mag. £22 10
Four-cylinder **F.N.**, magneto £19 19
3½ h.p. Magneto **REX** £19 19
Twin **MOTO-REVE** £19 19
F.N. Magneto Lightweight £19 19
3½ h.p. Magneto **MINERVA** £19 10
Magneto Twin **REX** £19 19

New Sidecars, with latest improvements £4 19 6
Brand New 1911 3½ h.p. Tourist **REX** ..... 43 Gns
„ „ 1911 3½ h.p. Free-engine **REX** ..... 48 Gns
„ „ 1911 3½ h.p. **REX DE LUXE** ..... 57 Gns
„ „ 1911 5 h.p. **REX DE LUXE** ..... 60 Gns



"PRECISION" ENGINES FITTED TO ORDER.
Liberal Exchanges in addition to Cash Discount.

GUARANTEED IN RUNNING ORDER.

1912 3½ h.p. Standard **BRADBURY**, NEW £48 0
1912 2¾ h.p. Two-speed **REX** Junior, NEW £45 0
1912 Twin **REX** Sidette, In stock NEW £75 0
1912 4 h.p. W.C. **REX** Sidette, NEW £74 0
1912 Two-speed **REX** Junior £45 0
1911 3½ h.p. Tourist **REX**, done 750 miles £32 10
1911 2¾ h.p. Two-speed **REX** Junior, as new £39 10
1911 3½ h.p. **REX**, clutch model £37 10
1911 5 h.p. Two-speed **REX DE LUXE** £47 10
1911 2¾ h.p. Twin **DOUGLAS**, 150 miles £32 10
1910 7 h.p. **REX DE LUXE**, two speeds £43 0
1910 7 h.p. Twin **REX**, HOT STUFF £37 10
1910 5 h.p. Twin **REX**, very fast £29 10
1910 3½ h.p **REX**, very fast, special machine £27 10
Magneto Twin **KEX**, 1911 Mibon clutch £21 10
1909 3½ h.p Two-speed **REX DE LUXE** £32 10
5½ h.p. Two-speed Twin **ROC** magneto, Druids .. £32 10
1908 3½ h.p. Magneto **REX**, very fast £22 10
1907 3½ h.p. Magneto **REX**, spring forks £19 19
5½ h.p Twin **REX DE LUXE**, Roc clutch, sp forks £22 10
Brand New 3½ h.p. **REX**, sprung forks, and pedals £31 0
Brand New Twin Magneto **REX** £37 15
3½ h.p Two-speed **N.S.U.**, smart £21 0
1908 **TRIUMPH**, very powerful £28 10
Magneto **TRIUMPH**, spring forks, specially low .. £25 0
3½ h.p. **REX**, very fine condition £15 10
Four-cylinder **F.N.**, magneto, spring forks £18 18
F.N. Magneto Lightweight £16 10
3½ h.p. Magneto **FAFNIR**, M.O.V. £19 0
3½ h.p. **WOLF**, Stevens engine, h.b. control £12 10
Twin Magneto **MOTO-REVE** £17 10
3 h.p. **QUADRANT**, low frame £10 10
3 h.p. **ANTOINE**, very smart machine £12 10
2¾ h.p. **F.N.**, in very good order, recommended .. £12 10
3 h.p **HUMBER**, chain drive £9 10
MOTOSACOCHE, Druid forks £14 10
2¾ h.p. **KERRY**, spring forks £10 10
3½ h.p. Magneto **MINERVA**, h.b. control £19 10
3½ h.p. Magneto **EXCELSIOR** £16 10

Easy Payments at Special Rates.

SUNDRIES.

New Sidecars, tip-top quality ..... £4 19 6 and £6 6
Backrest, to fit XL'All saddle 7/6
New Cane Sidecar Body 17/6
Brooks's B100 Saddle 9 6
New Large Lycett's Saddle 9 6
New Sidecar Aprons with studs 7/6
Plated Rex Pattern Handle-bars 6 6
New 20-amp. Fuller Accumulator 11/-
New Harrison's Back Rest 9/6

MOTOR BICYCLES FOR SALE.

LIGHTWEIGHT F.N., running order, £5/10; twin plain coil, 5/-; 3-speed gear and free engine, off Chater trigar, 15/-.—Armitage, Clarendon St., Hyde.

LIVERPOOL Official Agents for Bradbury, Zenith, Singer, Rex, Alcyon, Moto-Reve; delivery from stock.—F. C. Jones and Co., 3, Redcross St., Liverpool.

BRADBURY, 1912, free engine model, new 2 weeks ago, not done 20 miles, cost £54/10, for cash £49/10; no offers.—Hanulton, Haverthwaite, Ulverston.

ST. HELENS.—1911 (August) 2¾h.p. Motosacoche, F.E., mileage 600, all accessories, perfect condition, as new; 26 guineas.—153, North Rd., St. Helens.

LADY'S 1910 Magneto Motosacoche, all accessories, new tyre, excellent condition; 20 guineas.—153, North Rd., St. Helens.

2¾h.p. Minerva, 1911 Brown and Barlow, new tyre, accumulator, low, fast, thoroughly overhauled, spare valve, belt; £10.—Smith, ironmonger, Northallerton.

P. and M., 3½h.p., 1911, splendid condition, just overhauled by makers, heaps of spares, mud shield; £46/10.—Norman Senior, Low House, Denby, Huddersfield.

TRIUMPH, 1911, free engine, £45; 1910 free engine and sidecar £43; 1910 free engine, £38; 1909 Triumph, £27/10.—Thompsons', Triumph agents, Moor, Sheffield.

ROYAL Enfield 2¾h.p., 2-speed, free engine, quite new; cost £52/10 take £38; this is genuine bargain.—Thompson, 83, Moor, Sheffield.

F.N., 1911 model, 5-6h.p., 4-cyl., good as new; £37; only reason for selling, too powerful; owner going in for lightweight F.N.—9,799, *The Motor Cycle* Offices, Coventry.

1910 Moto-Reve, run 300 miles, spare valve, belt, tube, plugs, electric lamp, horn, complete; £27 take lady's bike and cash.—W. Beaumont, Bird's Road Brighouse.

1911 Premier, £34; 1911 Bradbury, £35; 1910 Triumph £35; 1910 P and M., £38; 1912 Triumphs, P and M's, Bradburys, Ivy motor cycles.—T. Reed, Nettleworth.

PREMIER, 3½h.p., 2-speed, and Montgomery sidecar, lamps, horn, all tools, excellent condition, new July last, good puller; 40 guineas.—Wiltshire, 52, Barnsley St., Wigan.

1910 (late) Phelon and Moore, recently overhauled, new tyre and chains, had little running, headlight, and all accessories; cash £40, quick sale.—50, Beverley Rd., Hull.

1911 Free Engine Triumph, unscratched, good as new, ridden 700 miles, Palmer back Whittle, exhaust whistle, tools, £42/10.—Apply, Horne, Rome Terrace, Middlesbrough.

PHELON MOORE, 1910, 2 speeds, Millford radial castor sidecar, Cowey speedometer, good condition, head lamp and generator, many spares; £50.—Bagshaw, photographer, Doncaster.

TRIUMPH, 3½h.p., £55, free engine, Sept., 1911, lamp, horn mirror, take £47, in splendid condition; good reason for selling.—Apply after 7 o'clock, 8, Rood End Rd., Oldbury.

TRIUMPH, 1909, 1910 improvements, very good tyres, new belt, exhaust whistle, several extras, condition like new; £30, or near offer, bought free engine Triumph.—Rudge, Shrewsbury Rd., Bolton.

CLEMENT-GARRARD, 2¼h.p., 2-speed counter-shaft, chain and Whittle, 1911 Simms and B and B, spring forks, Palmers, French grey, up-to-date, £15; also sidecar, cheap, £2.—Richard Warnes, Hemsley.

IMMEDIATE Delivery 1912 Matchless Twins, Zenith single and twin, Bradburys (£48, Douglas £41), several Millford, Wolfrunn sidecars, accessories; repairs.—W. F. and Co., 5, Cheltenham Parade, Harrogate.

1911 Premier 3½h.p. new September, special cut-down frame, touring and T.T. handle-bars, 2 belts, tyres as new, all spares, etc., only run 600, unscratched and faultless; £34/15, lowest.—Sproulle, Mirfield.

1910 7h.p. Matchless, 2-speed, free engine J.A.P., speedometer, lamp, horn, etc., £30, also several second-hand Triumphs, 3½h.p. Humber 2-speed, 3½h.p. N.S.U., 1912 6h.p. Dot.—Dobson, Bury Bridge, Bury. Nat. Tel.: 294.

LIVERPOOL Agency for Triumph and Matchless Motors Hitchings, Ltd., 74, Bold St., Liverpool, the pioneers of motor cycling in the North. It will pay you to deal with Hitchings, Ltd., an old-established firm of highest repute.

SCOTT, late 1910, 3½h.p., 2-speed, all 1911 improvements, automatic lubrication, guaranteed absolutely as new in every respect, enamelled and plated; give 50 miles sidecar trial; a genuine bargain, £39.—105, Milnrow Rd., Rochdale.

HITCHINGS, Ltd., for Triumph and Matchless Motors, any make supplied on most favourable terms; exchanges arranged; absolute satisfaction and courteous service assured by dealing with Hitchings, Ltd., 74, Bold St., Liverpool. Established over 30 years.

1909 Triumph, good condition, new back tyre, all accessories, spare belt in case, bargain, £28; 1909 T.T. Rex, 5h.p., grey finish, C.A.P. carburetter, do 65 m.p.h., new tyre, Cowey, all accessories, £28; appointment.—Fern Bank, 167, Plymouth Grove, Manchester.

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Second-hand Machines at Bargain Prices to clear.

BAT, 8 h.p., 1910, with Millford sidecar £40 0
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RUDGE, 3½ h.p., 1911, standard £29 0
ELK, 5 h.p., magneto £15 0
BRADBURY, T.T., 1911 ..... £29 0
BAT, 8 h.p., 2-speed gear £42 0
TRIUMPH, 1910, F.E. £33 0
REX, 5 h.p., 1909, two-speed £25 0
LINCOLN ELK, 3½ h.p., 1911 clutch, and sidecar ; £33 0
PRECISION, 2¾ h.p., 1911 almost new £25 0
TRIUMPH, 1910, free engine £37 0
TRIUMPH, 1910 free engine, splendid order £38 0
TRIUMPH, 1909, splendid order £28 0
BRADBURY, 1911 ..... £30 0
BAT, 8 h.p., T.T., condition like new, bargain.... £45 0
ZENITH, 1911 3½ h.p. £39 0
ZENITH, 1911, 3½ h.p. £40 0
ZENITH, 1911, 3½ h.p. £42 0
TRIUMPH, 1910, F.E. £33 0
ZENITH, 4½ h.p., 1911, good order £38 0
TRIUMPH Standard, 1910, with clutch £29 0
LINCOLN ELK, 3½ h.p., and clutch £26 0

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3. **Special Sidecar Lamp** (plated), and fitted to show white light at front and red light to rear.
4. **Extra Rapid** Quick Detachable Joints.
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Model de Luxe.—£6 5s.



Model C.—£7.



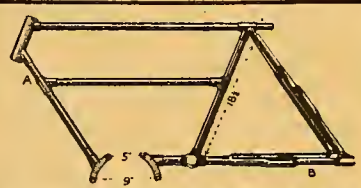
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Model D.—£8.

All complete with Michelin or Continental tyres. Customers have option of car or round pattern mudguards. Discount to the trade.

Any model can be supplied with tip-up basket without extra charge.



MOTOR CYCLE FRAMES

We have a quantity of frames by well-known maker,
Price 32/6 each.
Rigid forks, **7/6** extra. Druid forks, **45/-** extra.
Enamelled and plated in first-class style.

TYRES. TYRES. TYRES.	
26 × 2¼ Hutchinson Heavy T.T. Covers, B.E.	25/-
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26 × 2 and 26 × 2¼ Wired-edge Covers	12/6
Continental Rubber Non-skids, 26 × 2¼ or 2½	30/-
Continental, beaded, 26 × 2	18/3
Tubes, all sizes, guaranteed	9/6
New Butted Tube, 25 × 2¼	6/6
New Butted Tube, 26 × 2¼	8/3
Special Heavy 26 × 2¼ Tubes, guaranteed ..	7/6

MISCELLANEOUS BARGAINS.

4½ h.p. Water-cooled Engine, vertical	£5 10
2 h.p. Simms Engine	26/-
New 4 h.p. N.S.U. Engine, perfect	£7 0
3½ h.p. Rex Engine, M.O.V.	£5 10
Mabon Clutch, fits twin Rex	65/-
Brooks B100 Saddle	9/6
Brooks B120 Saddle	9/6
Lycett's L109 Saddle (new)	11/6
Lycett's ditto, padded top (new)	14/6
Cocoa Fibre Sidecar Footmats	3/-
Ruthardt V Twin Magneto, 45° angle	£3 15
New Bosch D A V Twin Magneto, 48°	£4 4
Rex Pattern Belt Rim Brake (new)	8/6
Lycett's Carrier Toolbags (new)	7/6
½ h.p. Electric Motor, 230 volts	£7 0
Sidecar Lamps, show red light behind	7/6
Trailer, 26in. wheels	25/-
New Toolbags, 9 × 6 × 3½in.	4/6
Sidecar Aprons, green or red, with studs ..	7/6
New Lycett's Tubular Carriers	4/11
Longuemare Carburetters	5/-

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MOTOR BICYCLES FOR SALE.

1911 Bargains.—Bradbury, shop-soiled, £39; 2¼h.p. 2-speed F.N., in splendid order, £32; 3½h.p. Premier, ran 150 miles, £33; 14-guinea Millford castor cane sidecar, hardly used, £11/5.—The Brighouse Motor Agency, Bailiffe Bridge, Brighouse.

BARGAIN.—8h.p Bat, new June, 1911, J.A.P. automatic carburetter, J.A.P. adjustable pulley, heavy tyres, Garner whistle, all spares; owner buying similar machine, 1912 model; cost £65, sell £48; condition as new.—Marshall, Cannon Hill, Lancaster.

S. GRANGE'S 1911 T.T. Triumph for sale, winner of Bradford Club speed trials, 72¾ miles per hour, also winner of open hill-climb, fastest amateur in England, guaranteed in splendid condition, spares, tools, etc.; price £40.—Brocklehurst, Park View, Cleckheaton.

B.S.A., Chater-Lea, Triumphs, J.A.P.'s, 1912 models; sidecars from 5 guineas; large stock of Michelin and Palmer tyres, accessories, accumulators, magnetos; accumulators recharged; petrol, Vacuum and Price's oils; sole agent for Lincoln Elks.—Pickles, Church St. Garage, Bradford.

NORTHERN Depot, Ltd., Everything Motorish, Leece St., Liverpool.—Auto-Carriers, commercial, delivery fortnight; Sociable, stock; 3-seater, 3 weeks; Kerry-Abingdons, clutch model, stock, other models week; Matchless, fortnight; Zebra 2-seater car, fortnight; special stockists F.R.S. lamps, Avon tyres, XPall saddles, Lyso belts, speedometers; all advertised goods in stock; sole agents celebrated Deluge motor suits; 14 oils stocked.

CHATER-LEA 3½h.p. J.A.P. Motor Cycle, complete with Chater-Lea spring forks, Cowey speed indicator, Lucas King of the Road lamp, 3-note horn, new Kempshall 26in. × 2¼in. tyre on back wheel, Rom tyre on front, pump and automatic drip feed lubrication, ignition by Bosch magneto, Matchless silencer, with cut-out, pedals, and footrests, toolbag in carrier, with side bag for spare belt and tube, machine in excellent condition, almost as new, winner of several important competitions; price £35.—Durant, Chapeltown, Sheffield.

GREAT Sale of motor cycles.—3½h.p. Rex, £7/10; 4h.p. Chater-Lea, magneto, spring forks, B. and B., £12; 3h.p. Triumph, £9; 1909 Douglas, £18/10; 1911 Kerry-Abingdon, £28; 5-6h.p. Rex, 1909, twin-cyl., free engine, and sidecar, £25, worth £40; 1908 Triumph, new condition, £25; P. and M., nearly new, 2-speed, free engine, £37/10; we have about 60 second hand motor bikes in stock, consisting of 1907, 1908, 1909, 1910 Triumphs, prices from £15; several Bradburys, Singers, Moto-Reves; all machines sold are warranted in good order; sidecars from 50/-.—The Motor Cycle Exchange, 160, Young St., Sheffield.

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby Stafford, Shropshire, Montgomery, and Merioneth.

5h.p. A.J.S. Twin, in stock; 60 guineas.—Taylor Oakeswell, Wednesbury.

2½h.p. A.J.S., 2-speed delivered July, run about 400 miles, complete, lamp, horn, spares; £37.—Taylor Oakeswell, Wednesbury.

1911 2½h.p. A.J.S., belt drive, lamp, horn, spares, perfect order; £25.—Taylor, Oakeswell, Wednesbury.

A. J. STEVENS, 2¼h.p., 2-speed gear, free engine; immediate delivery, new; £42.—Below.

AIR Springs, Ltd., 3½h.p., in splendid condition, 1911 model, as new; any trial; £36.—W. G. Osborne, 35, Bridge Rd., Wellington, Salop.

1912 New Hudson; immediate delivery given. — M. Davies, Market St., Wellington, Salop.

TRIUMPH, 1908, good condition; seen by appointment.—Kendall, 11, Chichester St., Chester.

TRIUMPH, 1912, free engine model, just arrived unpacked; immediate delivery; £55.—Moss, Wem.

PHELON and Moore, 3½h.p. model, 2-speed gear and free engine, perfect condition; £38.—Moss, Wem.

1912 3½h.p. Zenith, variable gear, only ridden 20 miles; £50.—Motor House, Low Town, Bridgnorth.

1912 3½h.p. Zenith, new, in crate; cash offers wanted.—Box No. 9,854, *The Motor Cycle* Offices, Coventry.

1911 Humber 2-speed, machine, tyres, etc., as new; £36/10.—Andrews, Heage Rd., Ripley, Derbys.

TRIUMPH, 1911, standard, carefully kept and ridden, splendid condition; £37. — Brandon, 151, Welsh Row, Nantwich.

3½h.p. Rudge, free engine, new in November, with all spares; best offer.—Lloyd, Holmleigh, Craven Arms, Salop.

ROC 5h.p. Twin, 2-speed, free engine, enamelling and plating like new; £33.—9,859, *The Motor Cycle* Offices, Coventry.

RUDGE, T.T., July, 1911, very fast, winning mount, spares; £38; reason for sale, buying 1912 Rudge.—George Hill, Willenhall.

MOTOSACOCHE, 1911, 2½h.p., very little used, perfect order, lamp, horn, spare tyre, Palmer tyres; offers.—Dunphy, Welshpool.

NEW HUDSONS!!

These beautiful three-speed machines are making the twin-cylinder brigade "sit up."

COME AND HAVE A TRIAL SPIN.

We are Sole Agents for Halifax and Huddersfield and districts.

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3½ h.p. **RUDGE**, fixed ge...	£48 0
3½ h.p. **HUMBER**, 2-speed model	£52 10
1912 3½ h.p. **BRADBURY**, single-speed....	£48 0
1912 3½ h.p. **BRADBURY**, two speeds	£55 0
1912 3½ h.p. **NEW HUDSON**, three speeds	57 Gns
1912 2¾ h.p. **NEW HUDSON**, three speeds	47 Gns
1912 2½ h.p. **A.J.S.**, two speeds, chain drive	47 Gns

LIGHTWEIGHTS.

1¾ h.p. **WOLF**, A.J.S. engine, magneto ..	£15 0
2¾ h.p. **CASWELL** vertical, Bosch, Amac, h.b. control	£12 0
1910 2¾ h.p. **MOTO-REVE**, magneto, Druids	£22 0
1910 2¾ h.p. **MOTO-REVE**, extra fine order	£23 0
1909 2½ h.p. Twin **MOTO-REVE**, 50 × 70mm.	£20 0
1908 Twin **MOTO-REVE**, magneto Druids	£15 0

SINGLE-CYLINDER REXES.

1910 3½ h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p. 1908 Featherweight Rex, Bosch mag	£17 0

TWIN-CYLINDER REXES.

1909 5-6 h.p. de Luxe, two speeds, fine ..	£34 0
1906 5-6 h.p. Twin Rex, Mabon clutch....	£16 10
5-6 h.p., Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, two speeds, M.O.V.....	£48 0
5-6 h.p. de Luxe, 1908, two-speed model..	£28 0
5-6 h.p. de Luxe, 1908, two speeds, special	£29 10
5-6 h.p. 1908 two-speed de Luxe, 1909 engine	£32 0

OTHER MAKES.

1911 Lady's **HOBART**, Armstrong 3-speed	£36 0
5-6 h.p. Four-cylinder **F.N.**, very good	£19 0
4½ h.p. **N.S.U.**, Bosch magneto, h.-b. control	£21 0
3½ h.p. **P. & M.**, late 1908, two speeds	£28 0
3¾ h.p. Twin **PREMIER**, fine machine	£25 0
3 h.p. **TRIUMPH**, M.O.V., h.-b. control ..	£17 0
5½ h.p. **N.S.U.**, 2 speeds and free engine....	£25 0
1911 2½ h.p. **MOTOSACOCHE**, magneto....	£27 0
1911 3½ h.p. **SINGER**, clutch model, done 200 miles	£43 0
3½ h.p. **L.M.C.**, 1910 model	£25 0
3 h.p. **SINGER**, Bosch, V belt drive, B.& B.	£16 0
3 h.p. **QUADRANT**, Bosch, B.& B., sp. forks	£16 0
3½ h.p. **MINERVA**, Bosch magneto, Amac	£22 0

SIDECAR COMBINATIONS.

5-6 h.p. Clutch Model **REX** and new sidecar	£29 0
5-6 h.p. Two-speed 1908 **REX** and sidecar	£33 0
7-9 h.p Two-speed **REX** and sidecar	£53 0

All fitted with Magneto and Spring Forks.

£3 DOWN SECURES ANY OF THESE. BALANCE 6/- WEEKLY.

3 h.p. **REX**, vertical engine	£9 0
3½ h.p. **BROWN Bicar**, M.O.V., 26in. wheels	£12 0

£4 DOWN SECURES ANY OF THESE. BALANCE 6/- WEEKLY.

5-6 h.p. Twin **REX**, splendid goer	£19 10
3 h.p. **QUADRANT**, h.b. control, Bosch mag.	£16 0
3 h.p. **SINGER**, Bosch magneto, h.b. control	£16 0
3 h.p. **TRIUMPH**, M.O.V., h.-b. control ..	£17 0
1908 **MOTO-REVE**, magneto, Druids	£15 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

1¾ h.p. **WOLF**, A.J.S. engine, magneto	£15 0
1910 2¾ h.p. Twin **MOTO-REVE**.....	£22 0
1909 2¾ h.p. Twin **MOTO-REVE**.....	£20 0

CARS AND TRICARS.

4½ h.p. **HUMBER** Tricar, two speeds, wheel steering	£19 0
5 h.p. **HUMBER** car, two-seater, good goer	£22 0
5 h.p. **REACTE**, Oppermann, 3 speeds ..	£18 0
Duocar, Bosch magneto	£45 0

MISCELLANEOUS BARGAINS.

1912 B. and B. Carburetters, variable jets	25/6
1911 Portland 6 guinea Sidecar	£3 10
Fulford Castor Wheel Sidecar	£5 0
Fulford Rigid Sidecar, 26in wheel	£4 10
Montgomery Sidecar, 26in. wheel	£2 10
N.S.U. Sidecar, coach-built, 26in. wheel ..	£4 10

Farrar's Motor Exchange
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HALIFAX (Two minutes from G.P.O.)

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THE MOTOR CYCLE

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Consumption Comparisons.

ATTENTION is drawn in this issue to the increased cost of petrol, and although the price of fuel is not of so much consequence to motor cyclists as to autocarists, on account of the smaller quantities used by the former, it has an influence on the expense of the pastime.

While writing on this subject one is impelled to again refer to one of the unanswered questions relating to the running of motor cycle engines. It is general knowledge that, based on ton-miles per gallon, a motor cycle engine consumes approximately double the quantity of petrol for a given engine cubical capacity and weight that is burnt in a motor car engine. This abnormal difference in consumption has never been explained satisfactorily, and still remains a puzzle. If we take the average weight of a 3½ h.p. single-cylinder motor cycle of 85 × 88 mm. = 500 c.c. and its rider as 3 cwts., and that of a four-cylinder 15 h.p. car 80 × 120 mm. = 2,409 c.c. as 30 cwts. with passengers, we have a vehicle in the latter case of ten times the weight and nearly five times the cubical capacity of the motor cycle which will average twenty miles to the gallon. The consumption in the case of the motor cycle will be about one hundred miles to the gallon.

Various theories have been advanced to explain the difference, but none is satisfactory. In respect to carburation the motor cycle should be more economical, the design of its vaporiser is more settled, and on standard designs the twin lever control of throttle and air is admittedly superior to the single control on a car. It can hardly be due entirely to variation of gearing, because the average top gear ratio of motor cycle and car, allowing for the difference in wheel diameters, is not sufficiently great to account for the whole difference in consumption, though it may be responsible for a part. The absence of a change speed gear has been mentioned as the probable reason for the discrepancy, but motor cycles fitted with various multi-speed devices have been in use for years, yet greater economy in fuel consumption is not claimed by reason of their use.

Piston speeds in the case of the 3½ h.p. motor cycle and 15 h.p. car are about the same, and the piston speed of car engines is continually increasing. Can it be due to any difference in the ratio of weight and area to atmospheric resistance? For example, we will assume the total area of a motor bicycle and its rider travelling against the wind is nine square feet, and the area of the car and passengers which offers a resistance to the atmosphere as thirty square feet. Here we have a possible explanation because the power of the car, reckoned on engine cubical capacity, is nearly five times that of the bicycle, whilst the ratio of area to atmospheric resistance is only three and a third times more; against that there is the extra weight to consider, which is, in the case of the car, ten times greater. It might be argued that the greater volumetric efficiency of the car engine accounted for the difference, which would probably be correct if the increased volume were contained in one cylinder instead of being divided into four, in which case it can have no effect; the difference in size of the cylinder being quite insufficient to make much difference in fuel efficiency, *i.e.*, in consumption per brake horse-power hour. The subject is one of such interest that we invite readers' opinions on a problem which has baffled us from the earliest days of the pastime, and which has never been satisfactorily explained.

The Motor Cycle for Commercial Travellers.

DISCUSSION concerning motor cycles is now taking a prominent place amongst the *habitués* of the commercial hotels. After the day's work is finished, we gather round the smoking room fire, and the advantages and drawbacks of this modern method of locomotion form one of the chief topics of conversation. To-night we are in great force: there are four enthusiastic motor cyclists whose ardour has not been diminished even by the rawness of the winter air, the grease of the highway, nor the bumpy sets that form the roads of this "Never Never Land" they call Lancashire. It is absolutely the worst district I have to work, and I always send up a prayer of thankfulness when this week's journey is finished and I hie me away to the hills of North Wales. There the mountains take the place of huge chimneys, the birds' songs instead of the factory hooter, and a clear crisp atmosphere instead of the murky soot-laden air which our system of industrialism usually bestows upon the inhabitants of our manufacturing centres.

A Large Mileage.

The number of miles some of us cover in our week's work is surprising. One of the four here (Wigan) has just come up from Gloucester, and is contemplating a journey to Stockport, Glossop, and Sheffield to-morrow. I condole with him, as the experience of a rainstorm on the "Snake" is very fresh in my memory, and also those interminable tram lines that stretch practically all the way from Glossop to Wigan. I should like the pleasure of having the Chairman of the Roads Committee on my carrier through many important towns I wot of, and I am sure it would be to the good of the whole body of motor cyclists. A Rudge rider averages about 300 miles per week. I have covered 9,000 on my two-speed A.J.S. since April of last year, and my friend of the Triumph has a similar score. It will thus be seen that the Quarterly Trials, London to Edinburgh Run, and Six Days' Trials are great determiners as to choice of mount for the aspiring motor cycling traveller.

While we were discussing the merits and demerits of chain transmission an embryo Ananias joined in the conversation and told us that in the early days of the motor he had a trial run on a bicycle, and I cannot do better than use his words as near as I can remember. "I very well remember my first ride on a motor bicycle. I left Hanley on a prospective mount and I could not stop it until I reached Congleton, and then I fell off. After a rest I started back, and I tried to avoid running into a girl; she dodged and I dodged, but I at last ran into her. I was so exasperated that before I could think I had boxed her ears."

When we enquired as to make of machine and how it was controlled, he passed it off by saying he eventually bought the bicycle, and started once more to give us his further experiences, so we moved off in a body.

Last year's unrest among railway servants, and the fear of a further strike, caused many "Knights of the Road" to gather in catalogues, and considering that they number about 60,000 in these islands, it behoves manufacturers to consider their requirements. I have found a 2½ h.p. two-speed A.J.S., with its chain drive, an admirable mount for my use, but as I carry no luggage, beyond my bedroom kit, my experience would not benefit the other man with his hundredweight of samples. I should like to see makers a little more interested in mud and rain dodging fitments, as there is plenty of room for improvement in these things.

The utility of the motor bicycle for the business man is not the only point in its favour, the freedom



The "Cat and Fiddle" inn, between Buxton and Macclesfield, a favourite resort of motor cyclists during the summer months.

The "Cat and Fiddle" is generally supposed to be the highest public-house in England, but it is not so.

The Motor Cycle for Commercial Travellers.—

and delights of motor cyclists cannot be over-estimated. They have experiences and sensations unknown to the carist, inasmuch as the cycle becomes a part of oneself. The steering is not only conducted with hands and arms, but with the whole of your body. You feel the vibrating mechanism under you, a slave to your will. Mighty hills have no terrors, and the freedom of the bird is yours as you rush down into the valleys. The intimate feeling a man has for his bicycle was brought forcibly home to me when I left mine on a railway platform. I had just enjoyed a delicious skid which had prevented me from continuing by road. I felt quite sad at leaving my steed to follow me on the train. It perhaps was very sentimental, but most of our enjoyments have their basis in sentiment and not in reason. I have travelled thousands of miles in the train, by steamboat, and by motor car, but none of these have ever been so incorporated with myself as the motor cycle. It is no doubt this strange unifying process that makes the motor bicycle so very popular.

I have just finished a ride from Barnsley to Chester, and have enjoyed immensely the vagaries of a powerful wind. As I ascended and descended the long winding hills from Chesterfield through Buxton to Macclesfield, I had the wind first at my back, then directly in front on my right and on my left; in fact, these roads seem capable of causing a constant wind to blow in every conceivable direction. Climbing to the "Cat and Fiddle" it acted as an auxiliary to my engine, and I roared up the ascent; then its tactics changed, and it became my brake for the long descent into Macclesfield. It is on such roads as these that a motor bicycle emphasises the fact that it is a "gift of the gods." To the man who stores up his machine in the winter such pleasure is denied, for I aver that the exhilaration caused by a run in the face of a biting wind, or a fall of snow, when the natural forces seem to war against you, cannot be obtained when the summer sun is powerful and the mad winds of winter are changed into a caressing zephyr. Take out your bicycle, wrap up warmly, and taste the joys of winter motoring! R.F.P.

NEWSPAPER DISTRIBUTION.

THE motor cycle has, of course, been used for some time past for the collection of news, but it is only recently that it has been used for long distances, for the distribution of newspapers. The *Sportsman* having experienced difficulty in getting its papers through to Wales, there being no suitable train on the Sunday night to carry the Monday morning papers, the proprietors decided to experiment with a motor cycle and sidecar, and after several runs decided to establish a weekly service between their London office and Gloucester, where the papers are put on trains and sent to their various destinations, and it speaks well for the present day reliability of the motor cycle that the papers have always been up to time. The road to Gloucester is fairly difficult for a motor cycle with a sidecar loaded with about 300 lbs. dead weight, and I often feel the necessity for a change-speed gear, but at present have to be content with a fixed ratio. The roads during the past few months have been in a terrible condition, and on every run I have been expecting tyre trouble, but my Roms have not let me down, and I have found them a great safeguard against sideslip. My machine is a 6 h.p. J.A.P. with U.H. magneto. Whittle belt and Rom tyres, and a Dunkley sidecar is used.

Connecting up with the Train Service.

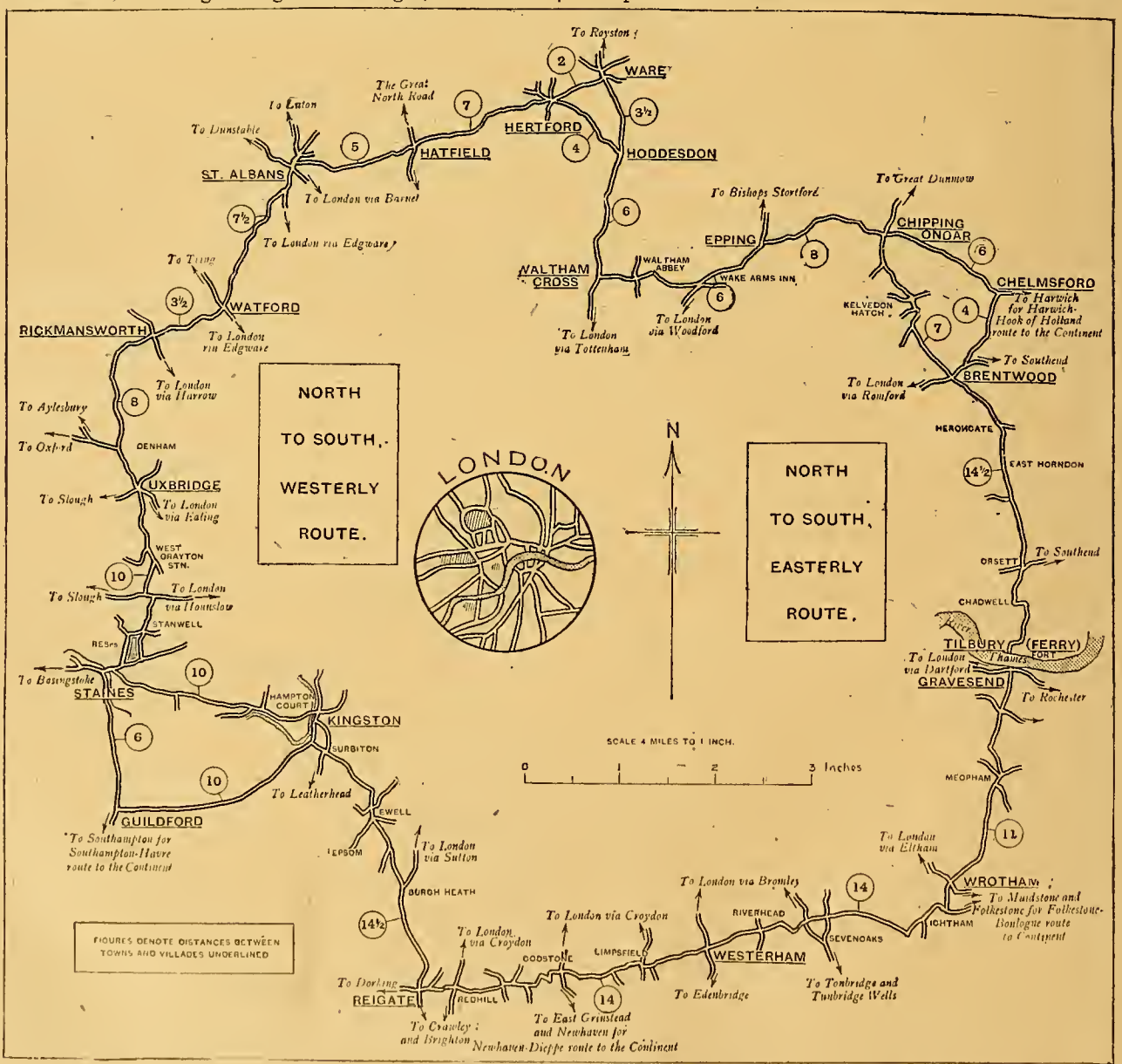
Every Sunday, about midnight, as soon as the *Sportsman* is off the press, it is rushed into the sidecar and away goes the machine. Every moment is of importance, for should the connection be lost the whole ride to Gloucester will be in vain. The route taken is through Piccadilly and Shepherd's Bush—where there is about a mile of what I should imagine must be the worst road in London. There is not much traffic about, except taxis and a few motor 'buses, and a fair speed can be indulged in, but a little farther on when well on the open road speed is the order of the day and the milestones slip by. Uxbridge is soon past, and nothing happens till I begin to look out for a rather stiff hill about a mile past West Wycombe. I am never confident of getting up here, for my engine is geared rather high to enable good speed to be made, but up to now I have managed to coax the engine up all right, although I usually sigh for a change-speed gear, without which no machine can really be called up-to-date. After this there is a long descent into Tetsworth, where a very fast run is made to Oxford and Cirencester, but the roads have been in a terrible state, two or three inches of mud being quite usual. From Cirencester to Gloucester is rather an anxious time until the papers are handed over to the railway authorities and another journey has been covered to the credit of the motor cycle. While the tanks are being refilled I have time for a wash and refreshment, then comes the return journey,



A motor cycle and sidecar regularly used for transporting newspapers from London to Gloucester.

Newspaper Distribution.—

which is quite a pleasant jaunt, for there is not the mental anxiety, and should anything go wrong I have time to put it right. In the intense cold, clothing is an important matter, and the hint published some time ago in *The Motor Cycle* I have found of service, viz., a pair of silk socks under a pair of football stockings to keep the feet warm, and a silk handkerchief between the neck and an ordinary linen collar to retain the heat of the body. For overalls I prefer the Burberry. I have found them waterproof after hours of rain, and their lined treble-breasted coat is also very warm. A short time ago I recollect a discussion in the columns of *The Motor Cycle re* the sooting of plugs, but this difficulty I have never experienced with the L.M. plug, although I give the engine liberal doses of oil. Riding throughout the night, it is hard to judge the rate of travelling, and one is apt to take corners at a dangerous speed, but since fitting a Jones speedometer this danger is overcome, and you can slow down to a safe speed when cornering. Riding in the fog is the only thing I object to; rain and snow are bad enough, but fog! I have not yet found a lamp that is any use in fog, and if any reader knows of one he will greatly oblige by letting me know. I do not think I have had any experiences worth relating, for beyond once seeing a tramp being searched by a constable I rarely meet anyone. I cannot conclude without a word of praise for the Whittle belt; at first I thought I should experience belt trouble, but it has gone through untouched in all weathers. It was only about a week before I started my weekly trip that I had ever driven a sidecar, and it is wonderful how simple it is to master. A.B.



HOW TO AVOID LONDON.

We are continually being asked how to avoid the traffic of the Metropolis by readers who wish to travel North, South, East, and West, and who do not wish to pass through the centre of London. The above map, which has been prepared from two sketch maps issued by the R.A.C. Touring Dept., shows how this can be done. Incidentally, the routes prove how the R.A.C. gives valuable road information to its members and associates, including members of the A.C.U.



Cyclecars.

The past history of the governing bodies as directors of the public vocabulary has not been at all encouraging and I doubt whether the latest effort is destined to enjoy a rosier future. New things demand new words, and the old brigade can well remember such attempts as "autocyclette," "autocyclist," "autocarist," and the like, many of which have passed into oblivion, while others survive as affectionate tokens to the age and standing of the long-established journals. The old company registers, bristling with such cacophonous designations as "The Great Horseless Carriage Company," show that the trade is as powerless and as poor a prophet in such respects as our governing body—even shrewd Hooydonk's "Trimo" is a dead word to-day. Is anybody seriously proposing to talk of "cyclecars" except on entry forms, and even then an intelligent nib will curl into a sneer? I prefer all the older words, such as "quadcar," "runabout," and "carette," for I notice that some users favour "tweeny car" at present.

The question is psychological, and I fancy the user of a quadcar will not greatly love any word which relegates his machine to the junior class, that is, to motor cycles. He will rather desire to present it as belonging to the motor car class, though he will be compelled to add a prefix or suffix which will distinguish it; and if a word can be found which implies that it is a car, and yet a great deal more sporting than the standard full-sized automobile, that is the word he will lick his tongue round most lovingly.

The Transmission Question.

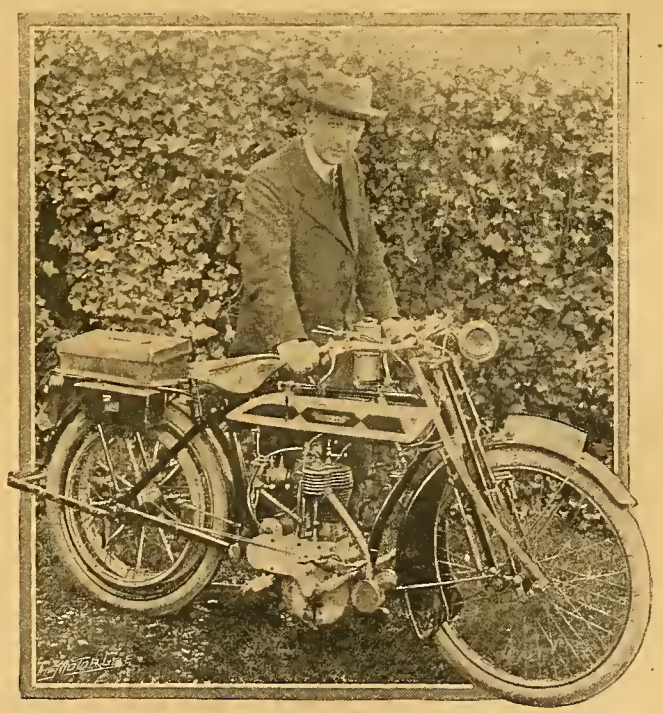
A weatherproof transmission still represents my chief ambition. I get on very nicely indeed with two belts and a 4½ gear in dry weather and easy country; but set me to ride in a genuinely hilly country with a small pulley, and the belt alone can inspire me with a vindictive loathing for motor cycling and all its works, as the result of spending hours in pouring rain on steep gradients, and spending the night sixty miles short of my destination, with my hands grimed right through to the meaty parts. What is the trade doing? The one bright feature is the growing popularity of the counter-shaft transmission, which affords a big belt pulley half way along the drive, and indubitably reduces belt slip such as one experiences in heavy rain or when riding through pools of water.

The shaft drive is still confined to two or three machines, although it possesses the unique advantage of being encasable without making the machine look ugly.

Chain drive is well enough, provided the intrinsic harshness of the drive is softened down by a proper clutch or spring device, and each chain is provided with a simple and substantial adjustment; but how many machines fill this bill? Last year I rode several chain drivers; one of them possessed two chains with two adjustments, and both adjustments were cumbrous and finicky—so much so that I soon resolved to take my chances with a belt. The other shared one adjustment between two chains, and though workable, was oftentimes worrying.

I am very strongly of opinion that, pending more revolutionary innovations, it would be a great blessing if all the single-geared belt-drivers were converted to chain-cum-belt drive; if a ball bearing counter-shaft, carrying a large belt pulley (preferably adjustable), were inserted at the bottom bracket, and the drive from the engine to the counter-shaft were performed by a chain hidden in a neat aluminium case, resembling those now applied to magneto covers. I have tested this system exhaustively, and am convinced that it prolongs the life of a belt incredibly, that it very largely obviates belt slip due to wet weather, and that it entails only a microscopic loss of efficiency.

If it raise the first cost of a machine by a trifling sum, the user is repaid by the economies effected in his belt bill and the reduction of his road stoppages. The single-geared belt-driven machine is not a pleasant mount for a heavy rider in hilly counties in bad weather, and the above simple alteration is capable of transforming it under these very common conditions.



James St. John, trials hon. sec. of the Sutton Coldfield Automobile Club, and his 1912 model 3½ h.p. three-speed Quadrant. To Mr. St. John's organising ability the success of the recent Sutton Coldfield Reliability Trial, which attracted a record entry, is attributable. A paid secretary of the club having been elected, Mr. St. John will shortly retire from his post.

With a Bat Sidecar in the One-day Trial.

IN the recent one-day A.C.U. trial we had the good fortune to be allocated as observer to a Bat sidecar. Quite one of the first people we met at the Swan and Sugar Loaf (what on earth have swans to do with sugar loaves?) was Mr. T. H. Tessier. The machine, he said, is all right, but the sidecar is not much to talk about, and led the way to where the machine was drawn up by the side of the road. We could see nothing wrong with the sidecar, and, as events proved afterwards, it was most comfortable. Here we found Mr. S. T. Tessier, who was destined to take the Bat combination through the trial. We started about half an hour late, and the first part of the course was so easy as (except for the comfort of the machine and the quiet easy way it ticked along) to call for no remark.

It was at Polsteeple Hill that we got the first taste of the Bat's quality. You come on the hill rather unexpectedly, but the lie of the road affords a good run at it, and down hill, too: the trouble is a corner just at the foot. This corner, however, was not very sharp, and Mr. Tessier, jun., took a good rush at the hill looming formidably in front. We got round the bend at quite a reasonable speed, and once more the engine instantly responded to throttle and spark, and began fairly to roar round, almost before we were aware that the narrow road up the hill was choked with machines, their riders waving their arms violently and warningly for us to stop. So strongly was the machine running, in fact, that it had to be brought pretty sharply to a stand at only about one-fifth of the way up the hill. As far as could be gathered, some non-competitors travelling in front had got hung up on the hill, which is really very steep, with a bad and slippery road surface. Here we stayed a good many minutes until the traffic at the top was a little clearer, when down came an A.C.U. official, saying that all the machines had better go down to the bottom and start again.

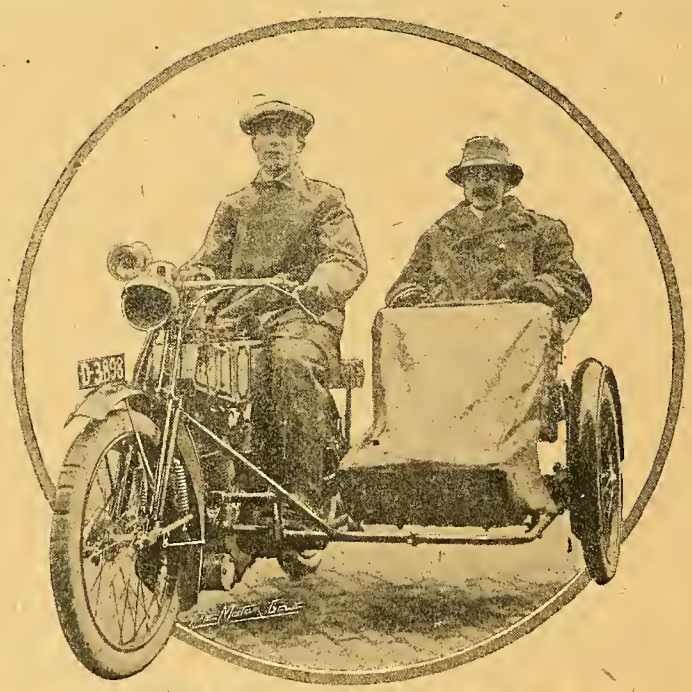
"I'm not going down to the bottom," said young Tessier. "I've got here and I'll start from here."

"You will never get a machine to do that," returned the official.

"Oh! can't I?" said Tessier. "Well, I'm going to try, anyway."

We got aboard, the engine roared free, then in went the low speed, and we started. The surface was bad enough at first, and as the machine picked up speed the riding was by no means improved by the fact that the other machines lying along the side of the narrow lane at times almost forced us into the gutter. Higher up, on the steepest part, the difficulties were increased by the slippery clayey soil, and several times the trusty Dunlop driving tyre began to slip; in fact, it was a wonder that it gripped the road at all, considering the steepness of the hill and the speed at which the machine was being driven; possibly the fact that it was a large one—voiturette size—helped matters. Though on low speed all the way up, we seemed to be fairly flying along, and we looked upon it as a great performance, although our job on this occasion only consisted of sitting still and holding tight.

Close to the very top of Polsteeple Hill there is a sharp bend, and here we found a pony cart on the one side, with a passenger machine carefully disposed on the other, necessitating an instantaneous declutch and brake application, such was our speed. The tricar machine was quickly shifted a foot or two, and we slipped by and passed on.



The 8 h.p. Twin Bat-Jap and sidecar driven by S. T. Tessier in the A.C.U. One-day Trial.

Through lovely country our route lay over hill and dale, until down a winding lane we saw Cudham Hill lying ahead. This was the first of the timed hill-climbs.

The road up to Cudham affords a very fair rush at the hill, owing to its straightness, but the quality of its surface is anything but conducive to speed. As soon as we got on to the straight, once more the engine was opened up, and we tore full tilt past the lower timekeeper, with all the engine's 8 h.p., and a good bit over, we should say, working for all it was worth. Over the rough, slimy surface of the clayey road we rocked and bounded faster and faster. It was quite exhilarating. Up and up we went, with never a falter or suggestion of changing down, while the way the speed kept up in face of the hill was quite remarkable.

Then came the corner, and the steepest part of all, and here the usual ubiquitous obstructionist in the shape of a motor cyclist who had not drawn into the side, brought the clutch out and an instant slowing down; otherwise we really believe the machine would have done it on top.

After that, in common with the official car that was indicating the route, we lost our way, and before we had done the seventy-two miles to Tunbridge Wells (where we had lunch), as indicated on the route card, we had done an extra six and a half miles goose-chasing on wrong roads.

With a Bat Sidecar in the One-day Trial.—

After lunch there was nothing in the way of hills that were worth mentioning with such a mount as ours until long after the rain had started to descend. After Leith Hill there was a narrow lane of villainous surface with ruts inches deep; and here we had another example of the Bat's capacities. Its previous performances had been more of the dashing and brilliant order, but on this hill the track was so narrow that it was impossible to get past the machines ahead of us, and so we had to force our way up at the speed of the slowest competitor by sheer engine power. Although this was nothing like as fine a performance as at Polsteeple and Cudham, it was good enough to do credit to any machine.

Then came the rain. How it poured! Night set in, and once more we lost our way, and pelted through unknown lanes with every drop of rain that struck one's face stinging as though it had been the outcome of the pea-shooter of our schoolboy days. Finally, we found ourselves at Dorking, in company with some fourteen other motor cyclists. After that any attempt to follow the route would have been ludicrous, so we made as straight as we knew how for Croydon.

By the by, from Dorking we took a third passenger sitting on the carrier, but his weight seemed to make no appreciable difference to the J.A.P. engine, which roared along just the same.

It is true that the qualities of the Bat chain-driven sidecar combination were drawn out to the fullest extent by Tessier's very fine handling, but even discounting this, the Bat is, to our mind, a quite remarkable machine.

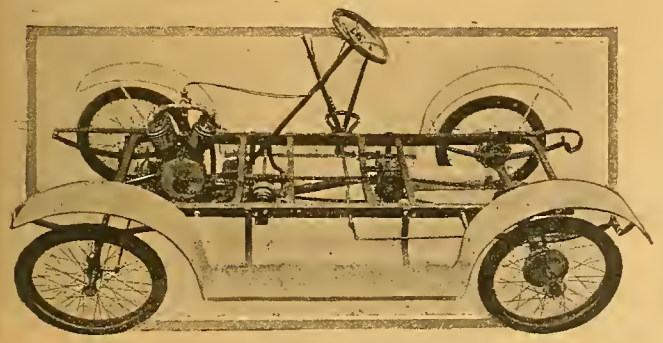


AN EXCITING MOMENT IN THE ONE-DAY TRIAL.

Climoing a 1 in 4 gradient. Success in climbing an exceptional hill with a sidecar frequently rests with the sporting propensities of the passengers. For instance, the lady passenger depicted above has seated herself on the top of the apron with the object of springing out should the machine come to a standstill; further, by leaning towards the bicycle, she is doing her utmost to prevent the back wheel slipping in the grease.

ANOTHER LIGHT RUNABOUT.

The Autocrat is another of the runabout machines of the cyclecar class which is being marketed by the Autocrat Light Car Co., Gough Road, Birmingham. The engine is a twin-cylinder air-cooled Peugeot, the transmission being by chains to a disc clutch on the counter-shaft, from the counter-shaft to the gear box, and thence to a differentially geared back axle. The frame is of pressed steel fitted with semi-elliptical springs fore and aft. The gear box has three speeds, and the brakes act on drums fitted to the back wheel hubs The wheels are 26in. × 2½in. shod with Clipper tyres. The chassis weight is about 6 cwts., the wheelbase 7ft., and the track 3ft. 8in.



Chassis of the 7-9 h.p. Autocrat cyclecar. The motive power is a V twin Peugeot engine, and the transmission is by chain.

FURTHER NOTES ON LUBRICATION.

My notes last week on existing lubricating systems and the possibilities of improved methods have brought me a letter from Messrs. Best and Lloyd. To supplant the old type of pump by the Best combination of pump and drip would certainly be a great advance, but even so we are a long way from the pressure fed system for which I pleaded.

My statement that with drip feed the feed is only by gravity is objected to, as in the case of the Best there is a mechanically forced drip. My point was that the pump maintained a clear oilway and ensured the oil reaching the crank case, while the drip dependent only upon gravity makes choking of the oil lead more likely. The Best system may be forced as far as the drip, but thereafter it is by gravity as in other cases. Certainly by opening the regulator we can pump right through, but in so doing must fill the sight-feed, thereafter leaving it in such state as makes it difficult to justify its name. Certainly I have no objection to the drip feed, but I do not regard any hand pump and drip combination as representing finality in motor cycle lubrication. CYCLOPS.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Driving Licences.

Sir,—Referring to the paragraph in "Current Chat," page 147, like "N.S.U.," I also possess a driving licence issued to me by a county authority other than the county I am living in. KING DICK.

A Simple Form of Quadcar.

Sir,—In my last communication I made reference to an offer I had had made to construct a light runabout for £50. I have had some correspondence on this matter, mostly dubious as to its possibilities as a commercial proposition. I may say that this offer was not made under the impression that the machines could be supplied to all and sundry at the price mentioned, but was merely applicable to myself. Thanking you for finding space for my last letter and hoping you will be able to insert this, P. TAYLOR.

Red Rear Lights in Hampshire.

Sir,—I see on page 173 of your issue of February 15th, you mention Hampshire as being one of the counties which has set the example of requiring red rear lights on all vehicles. Is there not some mistake here? for, with the exception of steam and petrol driven vehicles, I have seen very very few (if any) red rear lights on the road in Hampshire, and it makes very dangerous travelling for us motor cyclists, especially if our machines are fitted with good silencers. Horse drivers cannot then hear our engines, and we cannot see them, especially in some of the darkest parts of the New Forest and other wooded districts. C. PARKES.

[The byelaw to which reference was made on page 173 of the issue of the 15th ult. was adopted by the County Council of the administrative county of Southampton on November 13th, 1911.—ED.]

Two-stroke Engines and A.C.U. Formula.

Sir,—Referring to last year's results of open hill-climbing competitions, it will, I am sure, interest the riders of the Scott and other two-stroke engines to find not one hill competition has been won by a Scott. Why? The A.C.U. is the authority which is responsible for the formula, and which is supposed thoroughly to investigate before imposing a handicap of any description for the year. The experts are evidently satisfied. I find they have stuck to the unfair divisor of 1.32 for 1912

The makers of the Scott machine seem to delight in it, making an excellent epistle in their 1912 catalogue, proving by a well-aranged diagram that the A.C.U. assumes the two-stroke Scott engine to be double the power of the ordinary engine, and that the Scott riders are on equal terms in competitions with the 5 and 6 h.p. machines of other makes.

I would like to know through your paper from the A.C.U. secretary or any other secretary if they consider the above a fair and just handicap for 1912 after the results of 1911. I do think the A.C.U. might allow a little consideration to the riders (who are possibly its supporters), and give them a sporting chance by a reasonable handicap.

I have been informed that the Scott riders have given up all hopes in competitions, and are not likely to enter for the Westmorland M.C.C.'s hill contests at Brigsteer Brow on Easter Monday. The A.C.U. maintains it assists its members under difficulties. Perhaps it will commence here for a start, and place the Scott competitors on a reasonable sporting footing with other riders, so that they can again join the ranks of competitors, or bar the machine and be done with it. FAIR PLAY.

A Locally Made Foot Starter.

Sir,—I notice in your issue of February 29th, a query from a correspondent signing himself "V.C.," relating to the possibility of fitting a foot starter to a Zenith-Gradua machine.

With the aid of a local engineer I have had this done to an 8 h.p. 1912 model, with considerable success. A larger half-time shaft was procured from the J.A.P. Co. (who, apparently, stock these), and this was allowed to extend through the timing casing far enough to admit of a free-wheel clutch being fitted to it. Then the usual stand bracket was fitted with a pedal, sprocket, and chain wheel on the right-hand side, and a spring to keep the said pedal always in an almost vertical position when not in use. The addition of a standard Ukantes stand and the alteration of the brake pedal to the front footrest were the only other necessary alterations.

In practice the device works extraordinarily well, and as, I believe, most people usually make use of their free engine for starting and stopping whenever possible, it entails very little more wear on the belt. The gear from pedal to engine is 3 to 1, which renders it possible to kick the engine over compression even when quite cold.

C. GERALD BROCKLEBANK.

How to Exhibit a Badge.

Sir,—I enclose herewith a photograph showing the method which I employ for this purpose. It is a modification of the arrangement suggested by Thos. E. Hampton in your last issue. The top of the badge is attached to the front of the number plate, so that these mutually support one another.

H. R. S. WALFORD.



H. R. S. Walford's method of exhibiting a badge.

The Design of Cyclecars.

Sir,—I have noticed lately that the cyclecar is making itself known very surely. But I, as others, think it must be made as cheap and simple as possible. Now the transmission is a vital part in this question; that being so, why not do away with chains, shafts, gears, differentials, and the two outside belts, and necessary pulleys and counter-shaft?

I make the suggestion of having a straight through drive from the engine to the back axle by means of a *wide*, long, flat belt. This is a simple and efficient drive.

As regards the differential, let the back pulley be split in the centre, making two pulleys, so that when the car is rounding a corner the belt would slightly slip on one half. Here there would not be so much friction as with separate belts slipping in V grooves.

As regards gears, let there be a jockey pulley, which would be raised or lowered by means of a lever on the steering column, making a sort of clutch and gear combined, so that when starting up the belt would be slack and

when starting off the belt would gently draw tight, making a smooth send-off. This type of drive is as old as the hills, but nevertheless it would be an efficient one for a light car, bearing in mind to have a wide and long belt, a jockey pulley, and engine and back axle pulley flanged.

W. J. STEVENS.

Suggested Route for the Six Days' Trials.

Sir,—I am glad to see that the secretary of the Torbay M.C.C. has written in the name of himself and his fellow members, thoroughly endorsing the opinions already expressed on the Ashburton-Tavistock route. To appreciate fully this route, I think it is "essential" that it be traversed both ways, and I fancy that he would agree with me in this. With Taunton as a starting point, this could easily be arranged.

That Mr. Powell exactly locates the corner speaks well for "H.P.B.'s" map; the bridge mentioned is Holne Bridge. Mr. Powell's description is a very good one. Even if geared low, and knowing the corner well, it is very difficult to negotiate.

There is another corner on this route near the signpost marked Leusdon Cross, and about a quarter of a mile on the Ashburton side thereof; the corner is exceptional even for Devonshire, and is met very suddenly. Both corners if taken very "wide" indeed have a gradient of about 1 in 5 or 1 in 5½, and both are, I fancy, "banked" the wrong way.

Can anyone say how the hills on this route compare with, say, Arms Hill, or any of the well-known hills on which climbing competitions are held? T1111.

The Agency Question.

Sir,—I think the following is a state of affairs that ought to be done away with.

I am desirous of purchasing a certain motor cycle. My local agent, being only a small man, is unable to take my machine in part payment, and as I found the demand for my machine not at all good, I applied to one of the large advertising firms whose advertisements appear in *The Motor Cycle*. This firm say they will be pleased to supply me with the machine that I want, and take my old mount in part payment. My agent now says that if I buy the particular make of machine from anyone other than himself, he will call upon the firm to give him 5%. Now the firm I want to buy from say they will not pay this percentage, or any other, so that between the two of them I have to do without that particular machine. Surely this is carrying the agency question much too far. I consider that if a firm has given a monopoly to one man, it should see that he is financially able to conduct his business in a proper manner, or let someone else do it for him.

A friend of mine is also desirous of buying a machine of another make, and his trouble is this: The agent cannot deliver until June, and therefore he has to do without a machine until that month, and yet he sees the large firms advertising the same machine week by week.

The above are the examples of what the agency question has come to, and I shall be glad to know the views of other riders on the matter, as I contend that if I feel sufficiently interested to go to a town to buy a machine where a firm has it to sell, I should be allowed to buy it in the ordinary way, and that no restriction of any kind ought to placed on my actions or that of the firm which has the machine to sell which I am in want of.

The whole affair looks like assisting the small agent at the expense of the smart up-to-date advertising firms.

WILLIAM TOPPING.

Cycle Passenger Attachments.

Sir,—In your issue of the 15th ult., a correspondent, "C.D.," makes mention of a novel passenger attachment suitable for owners of lightweight motor cycles. Strange to say, his suggestions are almost exactly embodied in a type of sidecar which I have been using (often with a 28 lb. weight for passenger) during the past three winter months.

Briefly, it consists of a lady's strong cycle frame with front wheel and forks removed, a motor cycle wheel (size 26in. × 2 in.) behind, a Brooks motor saddle (with back rest) set well back on an extended saddle pillar, and the whole is attached to the motor cycle by two main stays, supported by three auxiliaries, all held fast by quickly detachable Chater-Lea joints.

Now let me shortly enumerate what I have proved to be points of real merit in a sidecar of this design.

1. It is light, weighing less than half the average ordinary sidecar.
2. Wind resistance with it is reduced to a minimum.
3. Starting is made exceedingly easy, and even very steep hills lose their terror because the passenger can pedal, which assists the engine wonderfully.
4. It is thoroughly safe and entirely free from side-slip.
5. The side strain is very slight, as each wheel supports its own rider.
6. It costs less than the ordinary sidecar, besides being an economy in belts and tyres.
7. The width is much narrower than in the case of the chair-car, and still the tendency to tilt is not so great.
8. Vibration with a 2¼in. tyre is scarcely felt, while the steering of the motor is not a bit affected. To prove this, I have covered long straight stretches without holding the handle-bar at all.

I am convinced that a future is in store for a passenger attachment of this type when once its many merits are made known A.L.

P.S.—The designer's name is Mr. Campbell. The makers intend to fit a V-shaped shield to the front of their next model, which will also, I am informed, be supplied with collapsable footboards and a bucket seat. A friend and I are planning a day's outing with the side-bicycle and a 1910 single-geared Triumph. We shall send you photographs of the unique combination, and perhaps a description of the run.—A.L.

Pillion Seats.

Sir,—Being an interested reader of your paper, the first thing I noticed in the issue of February 22nd was the photograph on page 209. I should like to tell you that my wife and I travelled about 3,000 miles last season in the way depicted by the photograph enclosed, which was taken in North Wilts while on tour last August. I must say we both much prefer it to the sidecar, which we only use when the roads are wet. We tried the sideways seat first, but I found the passenger interfere with the steering when going round



Photograph accompanying Mr. Bowditch's letter.

corners. You will see by the photograph how my wife sits, and will note the leather wheelguards which are strapped on. The footrests are on the stand, and my wife sits on a special air cushion. We are both longing for the time to come when the roads will be in a fit state for us to travel safely in the same old way. I was afraid it would pull about the back wheel, but the machine—a 1910 Kerry-Abingdon—never gave the slightest trouble throughout the whole distance, not even a choked jet E. J. BOWDITCH.

Clutches and Variable Gears.

Sir,—I was much amused by the photograph you published on page 254A in your issue of March 7th, representing a Mr Frasetti and his sidecar stuck on Cudham Church Hill because of "over-gearing." As the name is uncommon, I suppose this is the same Mr. Frasetti who a few months ago wrote frequently to your correspondence columns asserting that the free engine clutch on his machine was so efficient as to equal an infinitely variable gear. I notice he is still riding the same make of machine, and should be interested to know whether he still considers a free engine capable of serving as an infinitely variable gear, or whether the clutch of the 1912 models is not quite such a miracle as that fitted in 1911.

COMMONSENSE.

Cost of Motor Cycling.

Sir,—In his cycling notes in the *Sunday Chronicle* a contributor again refers to the cost of motor cycling, and reasserts that the sport demand an annual outlay of £50 and a continuous expenditure of 10s. a week. If this be so this writer must be correct in stating that the pastime is beyond the reach of the "working lad."

Most motor cyclists, I think, will agree that his assertion is misleading. If one buys a motor cycle for, say, £55, and after a year's running sells again, one would find oneself out of pocket equivalent to a sum certainly equal to 10s. per week. This would, however, include the capital outlay. On the other hand, if one were to buy a good second-hand machine, say for £25, and after running for a couple of years one were to sell the weekly cost would average something like 5s. per week, this, again, inclusive of capital outlay. I am not putting anything to credit for train fares saved, and I am presuming one has a reasonable amount of luck with tyres.

The above figures would, to my mind, cover a greater mileage than the average motor cycle travels. The *Sunday Chronicle* writer is undoubtedly happy in singing the praises of the ordinary bicycle. His reference to the "skilled mechanic" leads me to believe he is not a motor cyclist, as this myth has been exploded long ago.

With reference to "R.M.B.J.'s" letter in a recent issue, I echo his wish that you publish more accounts of tours. I find them most fascinating reading. J.L.

A.C.U. and M.C.P.A. Committees.

Sir,—Permit me to reply to Mr. E. P. Harding's letter in the issue of March 7th. Apparently, Mr. Harding belongs to that unhappy class which is incapable of crediting the opposition with the same honesty of purpose and singleness of aim which he claims for its own members. I am sorry to think so, but his references to masked intentions, etc., force one to that view.

Let me assure him that the M.C.P.A., whether its methods be right or wrong, at all events, has only one object in view, viz., to strengthen and improve the A.C.U. The formation of the M.C.P.A. is due to the efforts of a "private member"—Mr. Brown—and not to members of the trade. I have accepted the office of chairman (at least, for the present) because I am anxious to make the A.C.U. a really progressive, active body, in touch and sympathy with the motor cyclists of the kingdom, and for no other reason.

The sometimes maligned "trade" is capable of taking care of itself. It does not need the M.C.P.A. to further its interests, nor would I remain chairman if it did. On the other hand, it seems folly to refuse the services of active and keen motor cyclists merely for the reason that they are connected with the trade. We want all keen men to join us. There is no reason to fear that "the trade" will overwhelm us as a consequence. As a matter of fact, the leading members quite realise that the A.C.U. should be governed mainly by others than themselves. They want adequate representation no doubt. Surely the right policy is for the trade and the private members to work together for the good of the cause, with the balance of power, so far as A.C.U. matters are concerned, in the hands of the latter. If the M.C.P.A. members be elected to the committee I believe we shall attain that end.

Mr. Harding writes as a vice-chairman of the A.C.U., who has "served upon the committee for several years." He cannot be very proud of the results of his labour when he reflects upon the present position of the A.C.U. and its chaotic organisation as illustrated by the fiasco of the Spring Trial on March 2nd. We all know that it is easier to criticise than create—easier to pull down than to build up—but that knowledge must not prevent us taking any action at all in present circumstances. "He who criticises is my friend; he who flatters is my enemy." I do not intend to flatter Mr. Harding! I hope he will regard me as a friend! We all know he has given much time to the A.C.U., and it may be he is suffering for the sins of others.

The private members to whom he appealed appear to think that we are on the right lines, judging from the result of the election on Thursday. The affiliated clubs we hope will follow their example.

With regard to the other letter signed "Individual Member," your comment expresses our view exactly.

OTTO THOMAS, Chairman M.C.P.A.

Ball and Plain Bearings.

Sir,— The above subject is undoubtedly of great interest, and from twelve years' practical experience I draw the following conclusions: Take the case of the present fashionable main shaft ball bearings as against the plain bearing. The former is more easily replaced than the latter owing to that fact that no wear takes place on the main shafts. The ball bearing also retains oil better and facilitates neat crankcase casting, no outside bearing bosses being necessary. Also the main shaft may be stout and short, giving great strength where most necessary; on the other hand, the ball bearing soon develops a slackness, which cannot be adjusted. This slackness gives rise to the rumbling sound so often emitted from worn engines with this type of bearing, and no adjustment being provided the only remedy is to fit two new bearings—an expensive item in themselves—apart from taking engine down and fitting up again. The case for the plain bearing may be stated thus: Engines fitted with plain bearings run quieter, due to the better cushioning effect obtained on the firing stroke. Less wear takes place, provided the bearing be properly proportioned and lubricated, and the cost of the bearings (bushes) themselves is infinitesimal. Regarding the replacement of worn plain bearings, the cost may vary considerably, as wear also takes place on the shafts, no matter how carefully they be hardened. The latter remark also applies to crank and gudgeon pins on which wear in the best engines is very noticeable. This wear is not always true, and in fitting new bearings or bushes it may be necessary to grind or turn the shafts circular again to a slightly reduced diameter. To obtain perfect results from plain bearings they should be long and project as far as possible inside the crank case. The main shafts should be of as small a diameter as possible consistent with safety, and the system of conveying oil to the bearing should be improved. MAIN SHAFT.



A FAMILY SIDECAR.

Dr. J. A. R. Lee, of Mexborough sends us the above interesting photograph of a Rover and sidecar. Incidentally, he mentions that he uses his machine every day, and up to the present it has given entire satisfaction.

Necessity the Mother of Invention.

Sir,—Dr. Selby Clare assures us that the exhaust gases emitted from his silencer are nearly cold, and he does not think my suggested method of thawing the generator there, would have the desired effect. Should the doctor be able to hold his hand over the silencer holes for a couple of minutes with the engine firing it would be interesting to your readers to have particulars of his engine, exhaust pipe, and silencer.

We are all striving for a cool exhaust and would be pleased with anything under 100° Fahr. from a 3½ h.p. motor cycle run at the usual speed on the stand. The doctor's "patient" if subjected to that temperature (100°) would have a speedy recovery, I have no doubt. J. B. DALL.

Evolution of Engine Timing.

Sir,—Regarding the article "The Evolution of Engine Timing," your contributor mentions Mr. F. W. Applebee as being the person to remove the drain tap to get up Birdlip in 1906. He is mistaken. It was I that opened the drain tap on my 2¼ h.p. 70 × 80 mm. Kerry, and, moreover, I got up the hill, and my weight being over 12 stones, and the machine 198 lbs., it was not a bad performance. What would present day motor cyclists think if given a 70 × 80 engine, single gear, and told to weight it to 366 lbs., and get up Birdlip? Yet we constantly read of the great improvements and efficiency of present day engines. G. ALDINGTON.

A.C.U. One-day Trial.

Sir,—You have given notice in your paper of a lamentable muddle that was made of the A.C.U. one-day trial. We had ourselves kept out of these trials for some years, as we considered that there were too many of them held, but when the A.C.U. agreed to reduce the number to two per year we thought that we were justified in re-entering.

After going to the expense of this it is extremely annoying to find that, owing to the lack of proper management, the whole trial was abandoned, and the A.C.U. simply offer to return the entrance frees, or give another trial. Under these circumstances we have asked them to return our entrance fees, as we have no intention of competing in any further trials, unless they make some great difference in their management.

Our machine was doing remarkably well, and would have probably been one of the very few that would have made a non-stop run.

We trust you will insert this letter, as we should like the reason known why we do not enter these trials. We gave them our support for many years, but reluctantly have come to the conclusion that owing to their bad management they are now of no further use.

BROWN BROTHERS, LIMITED.
R. B. BANKS.

Inclined Engines.

Sir,—The cooling effectiveness of horizontal or inclined radiators is a subject of interest. Without any definite data upon the subject, I should imagine that horizontal radiators would be more effective than the inclined. The advocates of the latter base their arguments upon the fact that the faces of the radiators meet the air with greater force, and for that reason part with more heat, but they appear to overlook the fact that only one side of the radiator fin would be impinged upon, the other side being possibly in a partial vacuum. I am of the opinion that as a matter of fact there is a smaller amount of air circulating between the radiators of the inclined than the horizontal, and that effective cooling depends more largely upon the quantity of air brought into contact than upon the pressure. In any case the difference in heat transmission of an engine with radiators set at an angle or horizontal would be so small as to be almost negligible in its effects upon the efficiency or power of an engine, and not to be compared with the effects of other differences of design.

JAS. L. NORTON.

Sir,—May I trespass on your space to reply to Mr. Wells's letter of the 7th inst. Mr Wells has, I am afraid, made a mistake in surmising that I have any connection with the firms mentioned in my previous letter (15th ult.).

Unfortunately, I have none whatever, nor am I in any way connected with the trade.

The P. and M. and the Motosacoche were mentioned merely as examples of machines having, in my opinion, a better engine-position than that machine with which Mr. Wells is connected.

I am sure there are many others besides myself who would be pleased to read Mr. Wells's replies to my queries.

Since I am not in the trade, my name will be of no interest to that gentleman, and it will, therefore, be sufficient to sign myself VERTICAL.

Electric Lighting for Motor Cycles.

Sir,—I thought my opinion of the Voltalite dynamo might be of some use to your readers. I find that it does not give quite enough light for a motor cycle; the rubber ring on the pulley also wears out rather quickly. There is one mistake which Mr. Aston makes in his article. He says that "When the speed of the armature is increased the voltage remains the same and the current rises. It is the voltage which rises (since more lines of force are cut by the wire on the armature), and the current rises only a very little. KEITH CHARSLEY.

[The statement in the article in question was made in error, and our correspondent's correction is quite right. It is the voltage which rises, and a lamp is used which is able to take the increased pressure of current without damage.—ED.]

The Air Injection Principle.

Sir,—*Re* letter from "H.A.F." in your issue of February 29th on the subject of injecting air into exhaust gases, your correspondent is I think under a misapprehension as to the object aimed at in doing this. He assumes that the rush of air from the frame A (in his diagram p. 221) would help the gases out of the exhaust pipe. To do this, however, the incoming air would have to move faster than the exhaust gases—a thing hardly possible, considering the extremely high velocity of these gases.

On the contrary, such an appliance would cause considerable back pressure, especially when travelling slowly. For it is obvious that the gases rushing past the open end of the air tube E would exert a high air suction in the tube, thus diminishing their kinetic energy. For kinetic energy being imparted by the gases to the air, in order to make their velocities equal, it is clear this would leave less kinetic energy in the gases themselves—in other words, there would be back pressure.

I believe the common theory as to injecting cold air is that it cools the gases and so reduces their volume. This however is a fallacy. First it is extremely difficult to think of any method of injecting cold air without causing back pressure, but even if this could be done, that is to say, if the air could be injected at the same velocity as the exhaust gases are moving at, it would not diminish the total volume of gas in the exhaust pipe but increase it. We would then have an increased volume of gas, moving at the same velocity, and hence there would be additional back pressure.

I hope this will make it clear that the cold air injection principle is quite useless in any form. I must apologise for such a lengthy letter, but considering the number of people who are wasting time and money experimenting in this direction, you will, I hope, find room to publish.

H. R. MEREDITH.

SUMMARY OF CORRESPONDENCE.

H. C. Mills (3½ h.p. Premier), a competitor in the One Day Trial, writes: "I notice in your report you have me down as having failed on Cudham Hill. This is quite a mistake, as I took all the hills on the course without failing on one."

We are informed that Cyril C. Paterson is riding a 2¾ h.p. M.R. in the M.C.C. Land's End and back run and not a 2¾ h.p. Enfield as stated in the list of entries published last week.

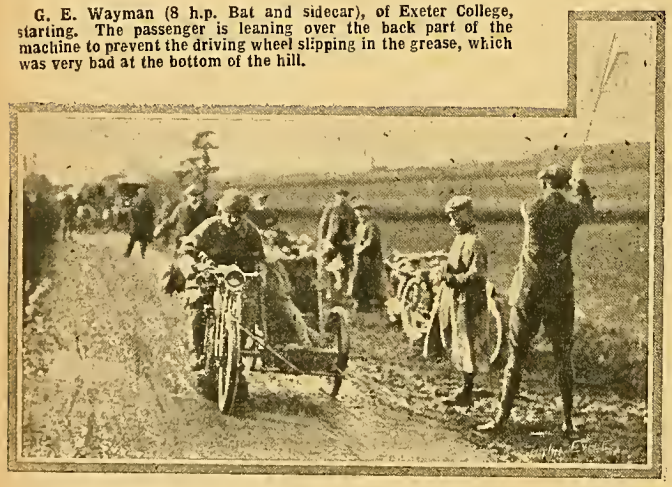
LOST AND FOUND.

We receive many letters regarding accessories, etc., both "Lost and Found," which we are unable to find space for. As these particular matters are of interest to two persons only, viz., the finder and the loser, we keep a list of such articles, and, should we receive a letter from the finder which corresponds to the article lost, the two persons are put into communication.

Oxford University M.C.C. Hill-climbing Competition.

THE O.U.M.C.C. held a very successful hill-climb at Horsepath Hill, about five miles away from the city, in the direction of Wheatley. The hill chosen was dead straight and the gradient was not severe, being as near as we could judge about 1 in 10. There was, however, a slight wind blowing down the hill, and near the start the surface was very greasy and dangerous. The results, which are given on next page, were decided on the following formula:

$$\frac{(\text{bore})^2 \times \text{stroke} \times \text{No. of cyls.} \times .9 \times (\text{time})^2}{\text{weight.}}$$



G. E. Wayman (8 h.p. Bat and sidecar), of Exeter College, starting. The passenger is leaning over the back part of the machine to prevent the driving wheel slipping in the grease, which was very bad at the bottom of the hill.

In Class I. G. K. Pippet made a fine ascent on his 2½ h.p. Singer.

In Class II. for touring singles the performances were fair but not in any way startling. Wyley, on a 3½ h.p. Rover, made fastest time, but came out third on formula, being beaten by Wayman and Doherty, both on Triumphs. The latter took a toss at his first attempt owing to the greasy road, but afterwards made a good ascent.

A Fine Ascent.

A. C. Hardy, on a T.T. Norton, secured both fastest time and formula wins in Class III. He made a particularly fine ascent, which was unfortunately marred by his carburetter falling off about forty yards from the finish; in spite of this he was well ahead on time.

Class IV. for any twin produced some high speeds, being won by A. H. Dalton on a 5 h.p. T.T. Matchless. Fraser, who ran second, was wobbling badly. The fastest time went to Openshaw on an 8 h.p. Zenith.

Class V. was responsible for the two star performances of the day. Openshaw made fastest time of the day with a fine straight climb and roared past the finish at a great speed. In the previous class he broke his exhaust lift but managed to stop and get it repaired in time for Class V. In Class V. also A. C. Hardy made the best formula performance on his T.T. Norton. Incidentally he made second fastest time of the day, being beaten by Openshaw only, and tying with A. H. Dalton's 5 h.p. T.T. Matchless. In Class VI. for sidecars Openshaw was the winner both on time and formula, and made a very fine climb. The club is to be congratulated on its arrangements and organisation, and the members on their good fortune in getting through the afternoon without



L. P. Openshaw (Christ Church) making fastest time of the day on his 8 h.p. Zenith. He is credited with ascending the hill, which is half a mile in length, in 86 secs.

Oxford University M.C.C. Hill-climbing Competition.— rain. The number of spectators was disappointing, but it must be remembered that it was not an open hill-climb, and consequently was not largely advertised.

Class I.—Lightweights.

	Fig. of merit.
G. K. Pippet (2½ Singer)	411
E. C. Wood (Douglas)	776

Class II.—Touring Singles.

G. E. Wayman (Triumph)	438
F. C. Doherty (Triumph)	441
W. R. F. Wyley (3½ Rover)	460

Class III.—T.T. Singles.

A. C. Hardy (Norton)	360
G. K. Pippet (2½ Singer)	371
C. P. Symonds (Triumph)	445

Class IV.—Any Twin.

A. H. Dalton (5 T.T. Matchless)	367
J. N. Fraser (6 Zenith)	407.5
L. P. Openshaw (8 Zenith)	416

Class V.—Open.

A. C. Hardy (3½ Norton)	331.5
A. H. Dalton (5 T.T. Matchless)	389
L. P. Openshaw (8 Zenith)	406

Class VI.—Sidecars.

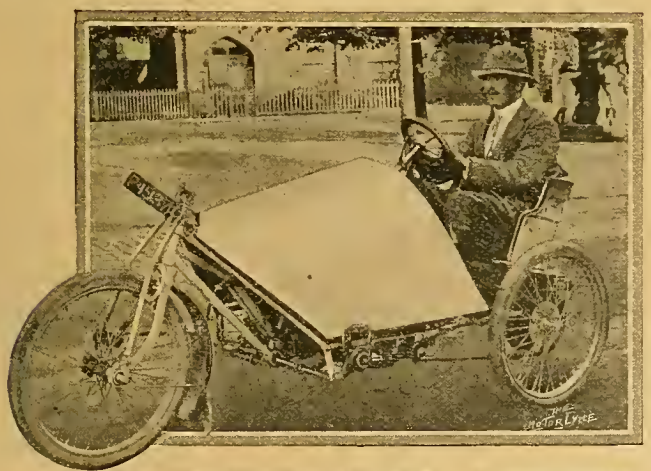
L. P. Openshaw (8 Zenith)	375
A. H. Dalton (5 T.T. Matchless)	414
— Creagh (8 Bat)	523



The hon. sec., A. C. Hardy, of New College, nearing the top of the hill on his T.T. Norton. His time was 40 1-5th secs. = 45 m.p.h.

A.C.U. MEMBERS' A.G.M.

The above meeting was held at 89, Pall Mall, S.W., at 8 p.m., on Thursday last, Mr. J. R. Nisbet was in the chair. The sole business of the meeting was to elect delegates to the council and twelve individual members to serve on the A.C.U. Committee. In previous years members of the R.A.C., who, on account of their membership to that body pay a subscription of 5s. and yet enjoy all the privileges of the private member, voted as such. But this year the Chairman stated that he could not see it stated in the rules that they should vote as private members, and ruled accordingly. The following members were elected to serve as delegates on the council: Captain D. F. Nicholl, R.A., Messrs. W. H. Browne, B. T. Rhys Pyle, G. N. Higgs, J. Fletcher, A. H. Priestly, S. Carter, Hal Hill, Rev. E. P. Greenhill, Otto Thomas, W Pratt, F. A. McNab, C. H. Hawkins, D. K. Hall, W. H. Wells, A. G. Reynolds, W. G. McMinnies, F. A. Hardy, B. Marians, J. R. Nisbet, H. P. E. Harding, W. Cooper, V. Hart, A. Sharp, E. Nelson, H. G. Bell, D. M. Morgan, J. W. G. Brooker, T. H. Tessier, A. S. Ross, A. M. Low, O. C. Godfrey, A. G. Forster, and A. J. Sproston. The following twelve members were elected to serve on the General Committee: Messrs. T. H. Tessier, A. Sharp, B. T. Rhys Pyle, Otto Thomas, Rev. E. P. Greenhill, W. Pratt, W. H. Wells, G. L. Fletcher, W Cooper, A. H. Priestly, J W G. Brooker, and G. N. Higgs.



A home-made runabout built up with the frame of an old Singer governess car and a 3½ h.p. De Dion air-cooled engine. The change speed gear is made up of various old chain wheels and actuated by a gate change. The machine is driven daily between Barnet and Mill Hill by its owner, H. Ide, of New Barnet.

ESSEX OPEN HILL-CLIMB.

The entries for the above club's open hill-climb on Saturday next closed on the 9th inst., and are as follow:

Class A.—Engines not exceeding 275 c.c.

R. Holloway (Premier)	G. Griffith (Alcyon)
F. W. Applebee (Centaur)	N. D. Slatter (Alcyon)
Lieut. R. H. Hope (Levis)	E. A. Marshall (S.I.A.M.T.)
F. G. Scales (S.I.A.M.T.)	

Class B.—Not exceeding 350 c.c.

Rex Mundy (Singer)	*G. L. Fletcher (Douglas)
P. Weatherilt (Zenith-Gradua)	*Miss R. Hammett (Douglas)
C. S. Franklin (Singer)	*C Pearson (Douglas)
N. D. Slatter (Alcyon)	*F. W. Applebee (Centaur)
H. C. Newman (Ivy-Precision)	W. Aslen (Grandex)
T. E. Seear (Motosacoche)	W. Bashall (Humber)
*J. S. Holroyd (Motosacoche)	A. Bashall (Humber)
	F. C. Dear (Douglas)
	F. E. Pither (Humber)

Class C.—Not exceeding 500 c.c.

R. Holloway (Premier)	P. Brewster (Norton)
H. C. Newman (Ivy-Precision)	V. Taylor (Rudge)
S. R. Cooke (Rudge)	G. Griffith (Rudge)
*E. Gwynne (Rudge)	B. Pattison (Brown)
*G. T Gray (Rudge)	P. Weatherilt (Zenith Gradua)
W. D. South (Rudge)	F. A. McNab (Trump-Jap)
*W. H. Elce (Rudge)	J. Oliphant (Premier)
*G. D. Fletcher (Douglas)	*W. O. Oldman (Bat)

Class D.—Not exceeding 750 c.c.

R. Holloway (Premier)	Vernon Taylor (Rudge)
H. C. Newman (Ivy-Precision)	E. H. Lees (Indian)
*E. Gwynne (Rudge)	Hal Hill (Bat)
W. D. South (Rudge)	F. W Barnes (Zenith Gradua)
P. Brewster (Norton)	*W. O Oldman (Bat)

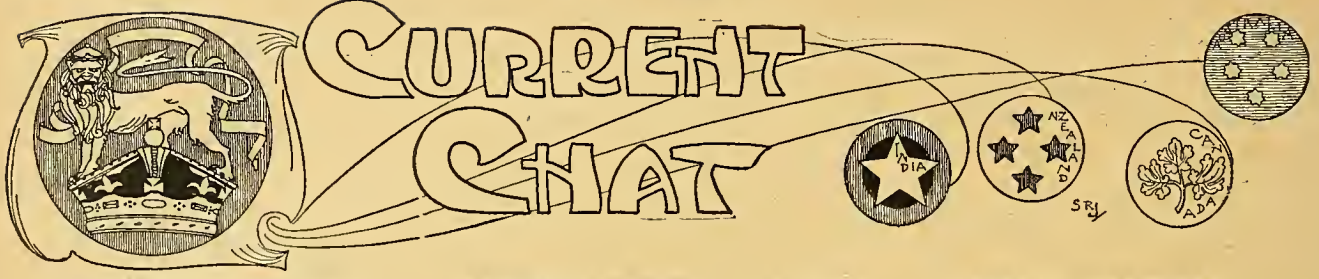
Class E.—Not exceeding 1,000 c.c.

*E. Gwynne (Rudge)	E. H. Lees (Indian)
P. Brewster (Norton)	Hal Hill (Bat)
A. Moorhouse (Indian)	F. W. Barnes (Zenith Gradua)
H. Bashall	*Alan Hill (Indian)
*D. Kapadia (Rex-Jap)	

Class F.—Passenger motor cycles, engines not exceeding 1,000 c.c.

*D. Kapadia (Rex-Jap)	*Alan Hill (Indian)
F. W. Barnes (Zenith-Gradua)	F. A. Applebee (Scott)

*These have also entered in their respective classes for the members' events.



TIME TO LIGHT LAMPS.

Mar. 14th	...	...	7.0 p.m.
,, 16th	...	...	7.3 ,,
,, 18th	...	...	7.7 ,,
,, 20th	...	...	7.10 ,,

Next Week's Special Issue.

The Special Spring Number of *The Motor Cycle* will contain many interesting articles and numerous extra illustrations. The number of pages will be considerably increased, but the issue will be 1d. as usual.

Brooklands Easter Meeting.

There will be a short race and a long race for all classes of motor cycles, also the First Hybrid Stakes. The last is a race for cyclecars, the engines of which must not exceed 1,100 c.c. and the chassis weight unladen 6 cwts.; the distance will be a short sprint of about two miles.

Military Motor Cyclists Wanted.

The Home Counties Divisional Telegraph Company Royal Engineers have a few vacancies for motor cyclists to make up its establishment, which is otherwise complete. The company officers are all enthusiastic motor cyclists, and intending recruits are assured of excellent opportunities of gaining knowledge and experience in this most interesting branch of the territorial force. Full particulars may be obtained at headquarters, 86, Riley Road, Brighton.

Australian Reliability Trial.

The West Australian M.C.C. is holding a reliability run from Perth to Kalgoorlie at Easter over a total distance of 362 miles. The captain of the club, Mr. Roy Wigmore, Subiaco, *viâ* Perth, W. Australia, would like to hear from secretaries of British clubs respecting the methods employed in this country for reliability trials. As the run takes place at Easter, any of our readers who feel disposed to communicate with Mr. Wigmore should write at once.

Why Petrol Prices have Increased.

In the last issue of *The Autocar*, there is an article under the above heading giving some of the reasons for the rapid increase in the price of petrol during the last few weeks. In the article the writer says that there is every appearance that further advances are in store. One cause is due to the dearth of available steamers for ocean transport; ships are now being built as rapidly as possible, but many months must elapse before there can be any appreciable increase in the number of oil tank steamers. At the time of writing the coal strike is affecting prices, and there does not appear to be any sign of settlement. Motor cyclists who have the opportunity of storing a few tins of petrol during the present week would be well advised to do so, as there is every indication of prices being still further advanced.

FUTURE EVENTS

Mar. 16.—Essex M.C. Open Hill-climb.
,, 23.—B.M.C.R.C. Race Meeting.
,, 23.—Herts. County A.C. Open Quarterly Trial.
,, 30.—Derby and District M.C.C. Open Hill-climb.
April 5-8.—N.W. London M.C.C. & Herts. County A.C. Joint Trial and Open Hill-climb (Yorks.) and Ladies' Competition.
,, 8.—Westmorland M.C.C. Open Hill-climb at Brigsteer Brow.
,, 13.—Oxford M.C.C. Hill-climb.
,, 13.—Liverpool A.C.C. Open Reliability Trial.

The Effect of Frost.

The accompanying photograph shows an unusual effect which was produced on a cold morning last week. The tank of a Triumph, which was undergoing its road test, was leaking slightly and the petrol dripped on to the high-tension wire. The evaporation of this, combined with the frosty morning, caused sufficient coldness to cover the high-tension wire with hoar frost as shown. A frozen carburetter is not



uncommon, and one often sees frost on the inlet pipe, especially if it be a long one, but frost on the high tension wire is, we think, unique.

SPECIAL FEATURES.

The Motor Cycle for Commercial Travellers
Climbing Honister Pass.
Consumption Comparisons.
Oxford University M.C.C. Hill-climb.

Motor Cycle Makers and the Coal Strike.

Motor cycle manufacturers in Coventry, Birmingham, and other places are mostly dependent on the various power stations and gas works for the running of their factories, and so long as the Corporation power stations hold out the works will be able to run. Deliveries of raw materials, particularly castings, have caused a certain amount of inconvenience, and in the case of the Rudge-Whitworth firm, who found deliveries of cylinders and crank case castings slow, owing to delays on the railway, a sidecar service was organised last week. One of this firm's testers was returning from Birmingham with a very heavy load of castings in a sidecar when the attachment parted company from the bicycle and the castings were strewn all over the road. The driver wisely halved his load and returned for the balance later.

British Imports and Exports of Motor Cycles.

In comparing the imports and exports of motor cycles and parts given in the following tables it will be noticed that the value of the exports for the month ended February, 1912, were over three times the value of the imports for the same period, while for the two months ended February the exports were over four times as much as the imports.

IMPORTS.—FOR MONTH OF FEBRUARY.

	1910.	1911.	1912
Motor cycles ..	£2,161	£2,898	£4,040
Parts thereof ...	4,187	6,209	8,214
Total ...	£6,348	£9,107	£12,254

FOR TWO MONTHS ENDED FEBRUARY.

	1910.	1911.	1912
Motor cycles ...	£5,837	£6,501	£7,520
Parts thereof ...	8,075	9,712	13,047
Total ...	£13,912	£16,213	£20,567

EXPORTS.—FOR MONTH OF FEBRUARY.

	1910.	1911.	1912
Motor cycles ...	£6,556	£17,140	£33,712
Parts thereof ...	2,904	3,809	10,059
Total ...	£9,460	£20,949	£43,771

FOR TWO MONTHS ENDED FEBRUARY.

	1910.	1911.	1912
Motor cycles ...	£15,258	£35,944	£72,432
Parts thereof ...	5,187	8,704	23,495
Total ...	£20,445	£44,648	£95,934

A.C.U. One Day Trial.

A sub-committee has been appointed to enquire into the causes of the mismanagement of this trial, and to select a suitable date for the event to be re-run.

A.C.U. Office Staff.

Owing to the great increase in the membership the A.C.U. has decided to increase its office staff by the addition of a junior clerk and a junior shorthand typist.

Red Rear Lights.

Another driver of a horse and cart was summoned and fined in Warwickshire last week for failing to carry a rear light or reflector. This makes the third conviction in the county since the new byelaws came into force.

Australian Road Records Beaten.

We have just received news that G. Patterson, jun. (who was a well-known performer at open hill-climbs last year, and has lately repeated his successes at Otago and Canterbury, New Zealand), has beaten all Australasian road records, covering the distance of three hundred and twelve miles in twelve hours, and in twenty-four hours no less than five hundred and forty-seven miles. Considering the state of the roads in Australia, this speaks well for the machine, a 3½ h.p. New Hudson.

The A.C.C.F. Easter Trial.

On February 15th we published an outline map of the course for the above event. The A.C.U. has decided to send over a team to compete in the competition, and this week a representative went to Paris to make arrangements. Our idea is that the A.C.U. should make the trip as attractive as possible, and suggest to the French club that the start should be outside Paris—Mantes, for example, is but 86½ miles from Dieppe—and so organise things that the whole trip is done by motor cycle and steamer and not by train. Further enquiries should be sent to the Secretary, A.C.U., 89, Pall Mall, S.W.

Moto Cycle Club de France Hill-climb.

The Moto Cycle Club de France is organising a hill-climb for the 24th inst. on the Argenteuil-Montigny les Cormeilles road. The course is three kilometres in length, of which one kilometre is on level ground and two kilometres are up hill. The chief attraction to English riders will be the International Challenge Cup. The following classes will be run:

Motor Cycles, Class I.—Section A, up to 225 c.c.; Section B, up to 350 c.c.; Section C, up to 500 c.c.; Section D, over 500 c.c. An allowance of 10% will be made for multi-cylinder machines.

Class II., for Tricars and Sidecars.—Section A, up to 500 c.c.; Section B, above 500 c.c.

Class III., Cyclecars.—Light cars in touring trim, not exceeding 350 kilogrammes, air-cooled engines, any type of transmission, metal spoked wheels. All vehicles must conform to the descriptions in the catalogue.

The entry fee is 20 francs, and entries close on the 18th inst. to the Secretary, 48, Rue St. Ferdinand, Paris

R.A.C. Warning Signs.

Owing to the dangerous nature of the level crossing over the Midland Railway on Watling Street between Daventry and High Cross, the Club will erect a special danger sign at this point.

The Six Days' Sidecar Record.

Mention has been made of an attempt to beat the existing six days' sidecar record by A. Butler. Mr. Butler left London on the 6th inst., and was last heard of on Monday at Newmarket, when he reported all well.

A New Challenge Cup.

A silver challenge cup has been presented to the Sutton Coldfield A.C. by Mr. W. R. Jones, of the Whittall Engineering Co. It is to be called the Ixion Cup, and has to be won three times in succession by an amateur.

Motor Cycles Registered in London.

During January 360 motor cycles were registered by the London County Council, whilst 3,685 licences to drive were issued.

Motor Cycle Tours in Sweden.

The triptych system has been extended by the Swedish authorities to include motor cycles. Hitherto the duty had to be paid on landing. The triptych is obtainable from the A.C.U. and A.A. and M.U.

Toronto Show.

The annual motor show was held in the Armouries, Toronto, from February 21st to March 1st, when a good range of motor cycles was shown. American machines took the lead. Two British makes were shown, viz., Rudge and Triumph.



THE STEEPEST GRADIENT OF HONISTER PASS.

Frank Smith (5 h.p. Clyno) making the first authenticated ascent of Honister on a motor cycle and sidecar last Saturday.



WHEN Mr. H. Newman's challenge appeared in *The Motor Cycle* a few weeks ago with regard to an ascent of Honister Pass from the Buttermere side, one little thought that the event would develop such interest as it did. Mr. Frank Smith duly made his appearance at Keswick last week in anticipation of the arranged attempt on Saturday, the 9th inst., for he had accepted the challenge with his 5-6 h.p. Clyno and sidecar. When we arrived at Keswick the day previous to the climb excitement ran high, and a small crowd outside Edmundson's garage denoted unmistakably that the champion motor cycle mountain climbers were inside. But F. Smith was not alone in his object. Seeing the published arrangements which the Cumberland County M.C.C. had made, others were seized with a desire to try their prowess, and when the time for the line up at Keswick arrived, the under-mentioned were ready for the fray.

Frank Smith (5-6 Clyno sidecar), four speeds, chain drive.

Hugh Gibson (3½ Bradbury and empty sidecar), two speeds, chain drive.

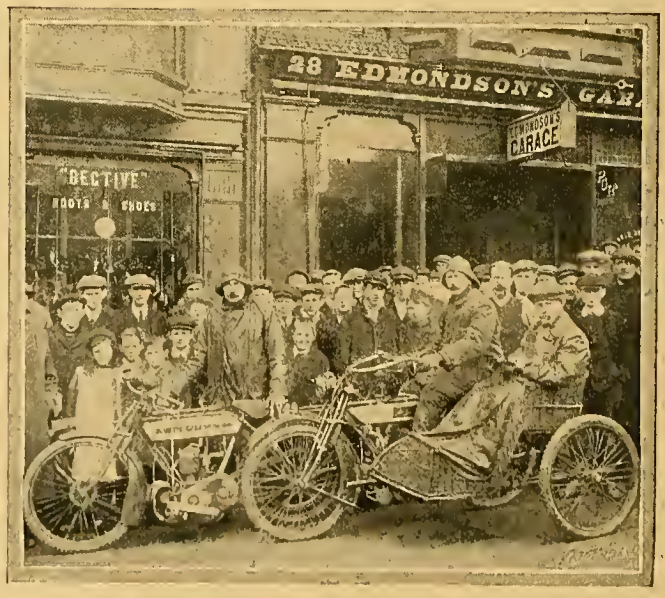
Vernon Taylor (3½ T.T. Rudge), single gear, belt drive.

Bert Haddock (2½ A.J.S.), two speeds, chain drive.

Not having seen Honister, we were told with bated breath of the stony surface, little better than a sea beach, the appalling gradient in the middle, the narrow road, and, above all, the yawning chasm awaiting the unfortunate motor cyclist who failed to steer a comparatively straight course. Practising, it appears, had been going on for days, and in each instance there seems to have been a hurried retreat to fit lower gear ratios, and gears of 17 and 17¼ to 1 were consequently the order of the day.

The day was fine, but clouds overhead looked threatening enough. However, the conditions did not deter the members of the Westmorland and Cumberland county clubs journeying from various parts to witness the first official attempt to climb Honister on a sidecar. It had been arranged to journey *viâ* Newlands, but time having been lost, the programme was slightly altered and the more direct way followed *viâ* Derwentwater and Seatoller.

The road surface was in a very greasy state, besides



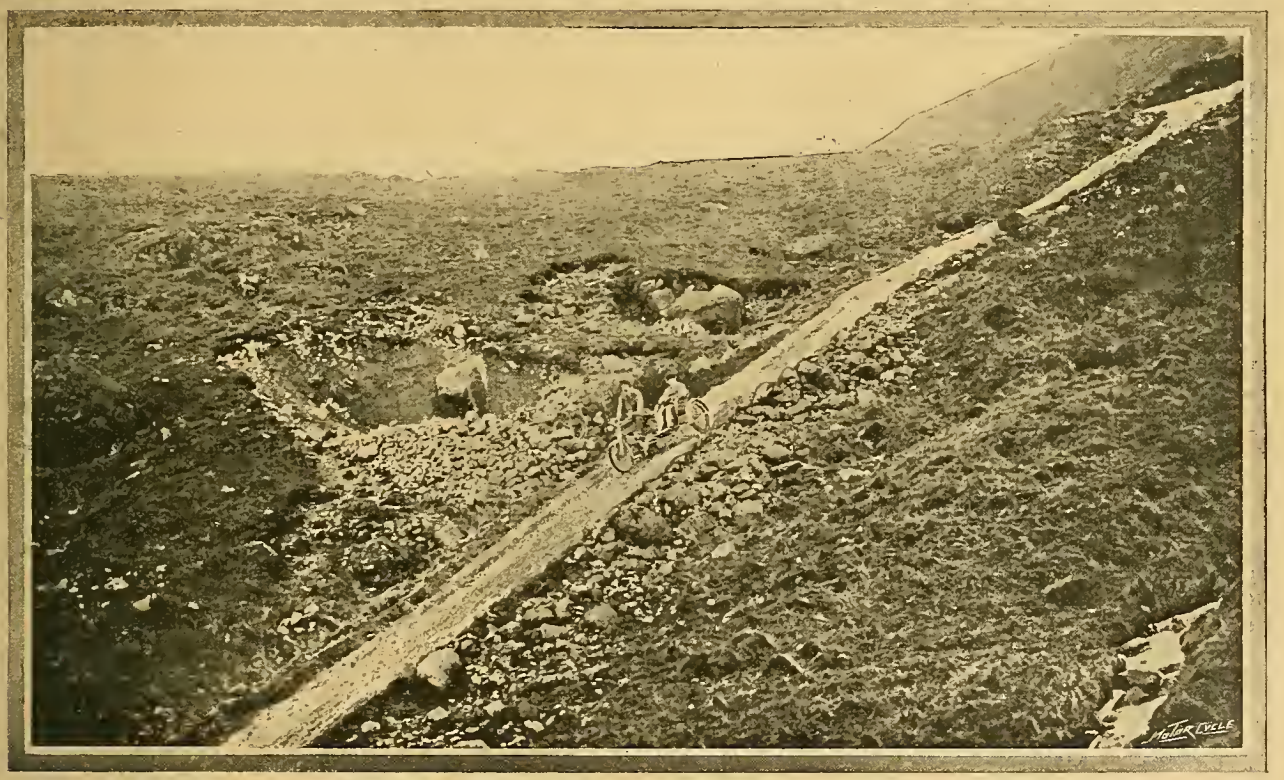
Starting for Honister from Edmondson's Garage. Hugh Gibson (3½ h.p. two-speed Bradbury) and B. Haddock (2½ h.p. two-speed A.J.S.)

Honister Pass Climbed.—

being twisty and rough, consequently slow progress was made. At the foot of the old road to the top of Honister we came upon a small crowd of motor cyclists who were busy lowering gears, and many were the hurried attempts to get up the hill. Practically all, however, had to resort to the toll road, which is easier, though severe.

The Stony Surface.

About three o'clock the Midlanders commenced to descend the hill, and this in itself was no light task, as it was impossible to travel at more than a snail's pace for fear of losing control of the machine. The order of starting had been settled by a spin of the coin, it being agreed that Frank Smith was deserving of the first attempt, seeing that the climb was the outcome of his offer. The spectators selected a point about half a mile from the summit of the pass, where the steepest gradient is encountered, and which was estimated to be about 1 in 3. The start was from the last farmhouse from Gatesgarth after Buttermere, and the distance from here to the top of the pass is a little over two miles. But the surface! Never have we seen motor cyclists attempt to ride over its equal. It is exactly like a river bed, big flat stones lying about in thousands. Our first impression was that it was hardly a fair climb. The long wait before the Clyno sidecar appeared in sight was sufficient to rouse the excitement of the crowd to fever heat. The minutes sped by, but no one came in sight until a spectator espied the Clyno low down in the valley over a mile away, and then all eyes were strained to watch it make its slow progress up the pass. As Smith approached, it was seen that the stones were bouncing the machine all over the road, and the difficulty was to steer anything like a straight course. His speed would be about six to eight miles an hour, but even at this pace, no matter how the handle-bars were gripped, the front wheel would follow its own course. As for the rear wheel, it was churning up stones and deep ruts, especially so when the steepest pitch was reached. Here was the crux of the climb. The crowd cheered vociferously as Smith struck the steepest gradient. Gradually the speed got slower and slower. Would he do it? At the top of this steep pitch there is a huge boulder which in practice had stopped nearly every competitor, as even though the front wheel was sometimes persuaded to mount the stone, the back wheel refused to climb over it. It was now a case of touch and go whether the Clyno would be successful. For one moment the front wheel rose in the air, and seemed to hesitate whether it would go over or not. The driver stood on the low gear pedal, the machine lifted, and then appeared to spring over, every tube being strained to its uttermost. It was indeed a sight to see. The crowd was delighted, and never have we seen such enthusiasm evinced in a feat of this kind. Both passenger and driver looked thoroughly frightened, the passenger especially so as he excitedly threw his legs in the air as the front wheel lifted on the boulder, and one can quite understand it, seeing that rocks and boulders fifty feet below awaited the sidecarists if they failed to keep in the ten-foot roadway. The crowd, realising that the climb was almost bound to be successfully completed, jumped down from the rocks and ran after the



A SCENE NEAR THE TOP. F. Smith (Clyno) may be observed descending the hill for his attempt.

Honister Pass Climbed.—



Vernon Taylor (T.T. Rudge) at the last bend on the Pass. Note the stony condition of the surface. Honister Crag is seen in the background.

machine as it completed the last half mile. Some, anxious to congratulate Smith, arrived at the top completely fagged out. Saturday, March 9th, will go down in history as the first occasion on which Honister was climbed on a sidecar with two passengers, and the credit must go to the Clyno.

The Solo Climbs.

Next to try his luck was Hugh Gibson, whose Bradbury seemed in exceptionally fine fettle. He had attached a very light sidecar, his idea being that he would be better able to steer a straight course with a sidecar. His Bradbury climbed the pass on the low gear at a really splendid pace, and appeared to have plenty in hand, except on the steep section. His task to keep the light sidecar down appeared to us most difficult, for at times he had to lean over until his body was almost horizontal. Encouraged by his success, later in the afternoon he attempted the Pass with a light passenger, but could not top the 1 in 3 section.

Vernon Taylor next tried his luck on a T.T. Rudge, but, although he assured us that he had made a clean ascent in practice, three times he stopped, due to the engine roaring round and the belt slipping. After descending the pass and raising the gear to 7½ to 1 to give the belt a better chance to grip, he made the fastest ascent of the day. His exhibition was, in fact, a hair-raising one, for no one imagined that such a speed could be maintained without fear of a bad fall.

Bert Haddock, on a little A.J.S., picked his way slowly up the pass, his engine never exhibiting signs of distress, despite the 17¼ to 1 gear. Occasionally he would put his foot down to steady himself, but this was well-nigh impossible to avoid. Somewhere about the middle of the pass he picked up a pin in the back tyre, and gradually it deflated until, within sight of the summit, his machine came to a standstill. Locating the puncture took some time, so, descending to the first bridge (which section includes all the severe gradient), he made a sure climb, only touching the ground with his feet on one occasion.

Some of the Westmorland and Cumberland County Club members also tried their luck. W. Westwood on a T.T. Triumph, which appeared to have a Motosacoche engine pulley, did well, but he was obliged to jump off and run alongside on the steepest part. When he regained the saddle everyone imagined that he would successfully reach the top, but this was not to be, for, within a hundred yards of the summit, he fouled a big stone and shot clean off the side of the road, his machine after him. At this point, it so happens that the mountain stream is further away from the roadway and the bank is inclined. If he had fallen two hundred yards lower down the hill there is no knowing what might have happened to him and his machine.

Riders of a 7 h.p. Indian, 3½ h.p. three-speed Premier, T.T. Rudge, and Zenith Gradua tried conclusions, but all failed from one cause or another, Fletcher on the three-speed Premier on the third or fourth attempt successfully reaching the summit, though he had perforce to use his feet vigorously.

Climbing the Old Road.

While these last mentioned ascents were in progress F. Smith had descended the other side of the pass known as the old road from Seatoller. It will be remembered that Hugh Gibson made this climb about twelve months ago on a Bradbury, and a long controversy followed in these pages. Suffice it to relate that Frank Smith and his victorious Clyno were again successful in their self-imposed task.

Our Spring Number next week will contain references and further photographs of this hill-climbing expedition in Lakeland, including Red Bank, Grasmere, and Kirkstone Pass. The pictures were taken specially for *The Motor Cycle* by Mr. G. P. Abraham, F.R.P.S.

M.C.C. LAND'S END AND BACK RUN.

The following additional entries have been received for the Land's End and back run at Easter:

F. C. Wasley (2¾ Douglas)
P. Grout (4½ Quadrant)
A. G. Barr (3½ Quadrant)
G. B. Fry (3½ Quadrant)
J. A. Neumann (3½ Rudge sc.)
B. Marians (3½ P. and M.)
P. H. Bentley (3½ Triumph)
R. C. Owen-Wells (3½ Bradbury)
C. W. Meredith (3½ Bradbury)
G. T. Gray (3½ Rudge)
W. H. Elce (3½ Rudge)
G. Brough (6 Brough)
W. C. Hemy (3½ Precision)
J. S. Holroyd (2½ Motosacoche)
A. J. Sproston (3½ Rudge)
W. Cooper (3½ Bradbury)
R. Lord (6 Rex sidette)
J. Milner (7 Indian)
P. Phillips (2¾ Douglas)

Competitors are advised not to leave it too late in applying for rooms at the Union Hotel, Penzance, and the Bridge House Hotel, Staines, if they intend staying there on the Friday. A dinner will be prepared at the Bridge House Hotel at 8.30 p.m. The trials hon. secretary is Mr. Edwin Gwynne, White Lodge, Crediton Road, West Hampstead.

THE HILLS AT CUDHAM.

IN view of the fact that Cudham Hill was included in the A.C.U. One Day Trial on the 2nd inst., a few particulars regarding the gradient, etc., taken from the current issue of *The Autocar*, will be of interest to our readers. Cudham Hill is the hill on the road from Downe, and must not be confused with Church Hill, which leads across the valley from the church to the main Westerham road at Biggin Hill. Of these two hills Cudham is considerably the snorter and steeper. The total length is 700ft. (rather more than one furlong), and the rise is 101.36ft., which gives an average gradient of just over 1 in 7 (by this we mean a little steeper than 1 in 7). The gradient begins with 1 in 10½, and gradually increases for the first 100 yards, by which time it is 1 in 8; then it becomes rapidly steeper till its extreme gradient of 1 in 4.1 (very nearly as steep as the steepest part of the test hill at Brooklands) is reached 150 yards from the start, after which the gradient relaxes slightly till at a point 220 yards from the start it is 1 in 6.3. This is practically the top of the hill, for the last few yards are only 1 in 35.7. One hundred and seventy yards from the start this hill joins Church Hill, the gradient at that point being 1 in 5.4. As is usual on all hills, the steepest gradient is at the bend.

Church Hill, Cudham.

Cudham Church Hill is 1,250 feet in length, with a total rise of 155 feet, giving an average gradient of nearly 1 in 8. The steepest gradient is 1 in 5.34 nearly 100 yards from the start, then the hill becomes less steep for some distance, but it gets more severe as it nears the top. There are two bends, the first being 100 yards from the start, and the second (a veritable hairpin) just before the roads join 80 yards from the top.



Some members of the M.C.U.I. (Ulster Centre) who took part in the paper-chase held recently through Co. Down.

A.C.U. NOTES.

MEMBERSHIP.—At the last committee meeting 173 members were elected.

AFFILIATIONS.—The following clubs have become affiliated to the governing body: Wimbledon M.C.C., Cardiff M.C., North Birmingham A.C., Brookdale Club (Catford), and Gloucester M.C.C.

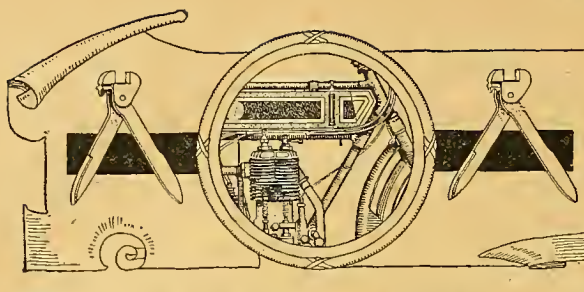
ANNUAL GENERAL MEETING OF THE COUNCIL.—It was decided that the election of club representation to the committee should be deferred five weeks in order that the procedure under the new rule regulating the method of electing club representatives may be brought into order. The existing committee and sub-committee meanwhile remain in office.

PERMIT.—A permit was granted to the Motor Cycling Club to run off an open silencer trial on April 27th.

FRENCH RELIABILITY TRIAL.—Mr. E. M. P. Boileau was appointed delegate to meet the A.C.C.F. secretary in Paris to discuss the arrangements for an English team to compete in this event at Easter.

A.C.U. AND M.C.P.A. COMMITTEES.

It will be seen that at the annual general meeting of the private members of the A.C.U. the Progressive party carried the day. Every one of the members they suggested as forming the new committee was elected with one exception, and in his place a keen amateur rider was chosen. It is true that, as we pointed out in a previous issue, the trade is rather strongly represented, as there are five members of the new committee who are actively engaged in the motor cycle industry. On the other hand these members have had great experience, are keen riders, and know their machines from stem to stern; in fact, it is a committee of motor cyclists, and as such should do excellent work for the Auto Cycle Union. We hope that the new members will succeed in bringing about a better organised and more active programme. It has been suggested to us that the M.C.P.A. might also devote its attention to the trade assisted "amateur." It has been alleged that one so-called amateur has ridden five different machines in five important events since Christmas.



FRAME DESIGN.

WE have long deluded ourselves with the belief that our frame design was above suspicion, but it was pointed out by an expert some days back that there is much which may be improved. Some of the worst faults are the cranking of the chain stays to allow room for the belt rim and the short steering head used on many makes. To remedy these faults the makers put in very heavy castings, with the result that the machine is somewhat heavier than it need be if properly designed. I would point out, however, on behalf of the manufacturers, that some of them are alive to these defects and are trying to remedy them by a better design; for instance, the Rudge has straight chain stays with a single sweep in at the top, and this lead has been followed by quite a number. I could name off-hand half a dozen so built. In this connection it is as well to notice that chain drive permits a much better design of frame, making it much easier to employ a perfectly straight chain stay.

Short Steering Heads.

The short steering head is remedied in most cases, for example as in the B.S.A. machine, also in the Chater-Lea and Royal Enfield; this is varied in some makes by the use of a web in place of the short reinforcing tube. Another point of criticism is the method of attaching the engine by cradle plates, and the expert mentioned above gave as his opinion that the loop frame was stronger and more desirable than this method. Personally, I believe a lot depends on the design of the cradle plates—some grip the engine at two points very near together, and often much out of the line from the centre of the engine to the rear wheel. The tendency to adopt the Trump method of employing a stay from the bottom of the crank case to the rear of the chain stay is a confession on the part of the makers that all is not as it should be. The Bradbury method of incorporating the crank case in the frame gives a very strong and rigid frame, and allows the secondary top tube under the tank to be dispensed with, but the great drawback to this method is the inability to remove the engine as a whole.

The Dropped Top Tube.

As regards the rear part of the frame, it has been admitted that the chain stay if continued should pass through the centre line of the engine axle.

A few words concerning the merits of the dropped top tube. It is generally said that this gives a much lower riding position, but this is not the best of its advantages; in fact, the diamond frame enthusiasts say that they can obtain just as low a riding position, and they are correct, at least to half an inch or so. To obtain the very low position with the diamond frame means that the steering head has to be very much shortened, while with the dropped top tube a long steering head and large tank may be retained, and the riding position still be brought low. Also the dropped frame allows the weight of the rider to be distributed more equally on the two wheels, at the same time keeping a short wheelbase; this makes for steadiness on greasy roads and better steering at high speeds, since if the front wheel be insufficiently loaded steering at high speeds becomes very difficult. The dropped frame is somewhat weaker at the dropped end of the tube than if the tube were kept straight, but no trouble is likely to arise from this if the secondary tube be kept straight; I do not, however, like those frames which have both tubes dropped, there is no advantage in dropping the lower tube, and it weakens the frame too much. *Apropos* of frame strength, I was told by a leading firm last week that the ordinary frame as fitted to 3½ h.p. machines was not strong enough to take a sidecar with perfect satisfaction, and they are making it a practice to use heavier gauge tubes in all their 3½ h.p. two-speed machines. I do not wish to raise a scare amongst the single-cylinder sidecar brigade, but let them not be surprised if after running with thirty stones or so aboard they find their frames slightly twisted. A.G.D.C.



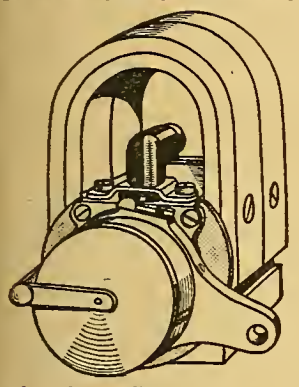
"Two Beauties," the title suggested by B. Dungworth, of Sheffield, who sends the above picture of his Korry-Abingdon and bulldog pup in the sidecar.

THE EISEMANN WATER-PROOF MAGNETO.

The new Eisemann magneto is a splendidly compact job, which is claimed to be absolutely waterproof. One of the chief points of interest is the fixing of the high-tension brush holder. Instead of the brush holder being screwed in by a vulcanite thread, which is liable to crack and cause mysterious shorting, it



is held in place by a strong steel clamp, fixed by two screws, thus preventing the possibility of the brush holder working loose. The substantial cap on the high-tension terminal is carry neatly and sensibly carried out; quite a tug is necessary to remove it, and there is no fear of its coming adrift and perhaps spoiling a non-stop run.



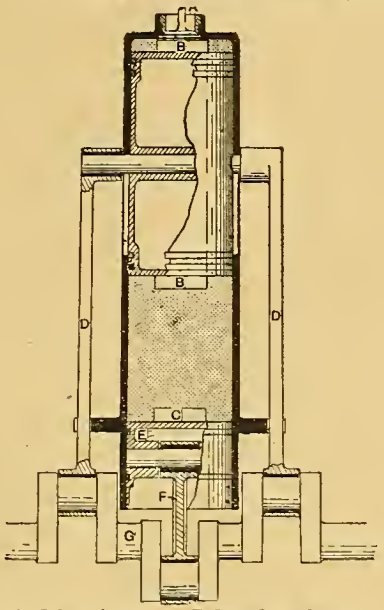
Though of small size, the magneto gives a fine hot spark. As will be seen, there are four horseshoe magnets. The Eisemann magneto is being used by several leading firms, including Rudge-Whitworth, Ltd., and Humber, Ltd.

THE SIMPLEX TWO-SPEED HUB GEAR.

A two-speed hub gear was described and illustrated in our issue of April 6th last year, page 326. This gear will be shortly manufactured by the Eagle Motor Co., Shepherd's Bush Road, W., and will be put on the market under the name of the Simplex. It is of the epicyclic type giving a reduction between the high and low gears of 45%. The chief alteration since the gear was first described is in the operation of the high gear brake arrangements. Weight will be reduced by the introduction of an aluminium and steel alloy whenever possible. In this way it is hoped to reduce the weight of the ordinary gear to twenty pounds. Two hubs are made The standard is suitable for engines up to 9 h.p., and a smaller type is also made for 3½ h.p. and under. All the running parts are mounted on ball bearings, which may be adjusted equally by means of one cone. In future models all the ball bearings will be of the cage type, so that the gear may be dismounted without any risk of losing the balls. With this gear the engine may be started by pedalling with the rear wheel on the ground. The gear impressed us most favourably.

NEW TWO-STROKE ENGINE

Herewith we publish a diagram to explain the principle of a two-stroke engine designed by Mr. J. Taylor, of Wakefield Lodge, Stony Stratford. The gas is taken in through the inlet valve A and is compressed above the main piston. The lower of the two transfer ports B being, of course, covered by the

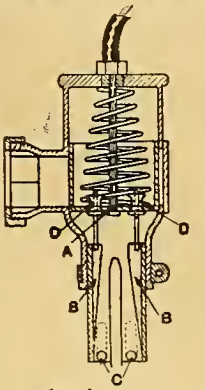


A Inlet valve
B B Transfer ports
C Exhaust port
D D Connecting rods from double piston.
E Secondary piston
F Connecting rod for E
G Three-throw crank

piston until the compression stroke is almost complete. Both ports B are then uncovered, and the charge is forced into the space between the main and secondary pistons. Here it is compressed and fired in the usual way, the explosion acting on the heads of both pistons and the exhaust port being uncovered by the secondary piston. The crank to which this piston is attached has a shorter throw than those for the main piston and is also given a slight lead, thus the port C is opened considerably before the lower port B, giving the exhaust gases ample time to be reduced to atmospheric pressure.

A B. & B. CARBURETTER MADE AUTOMATIC.

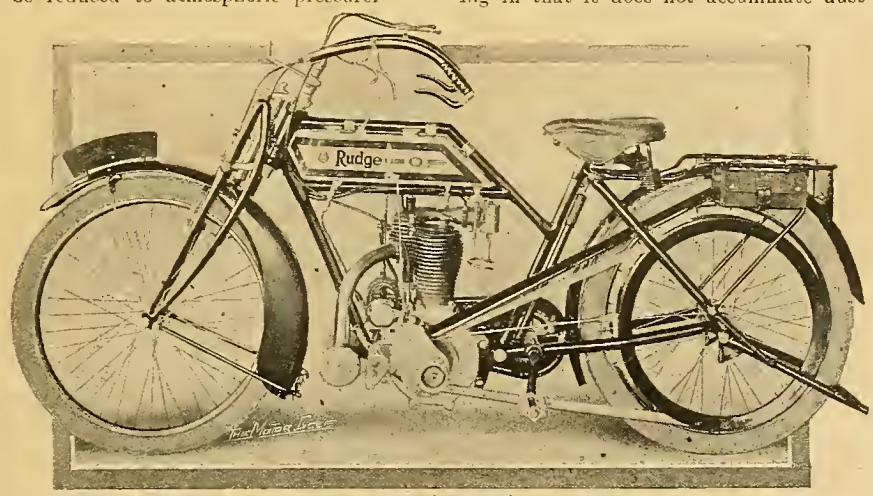
The accompanying diagrammatic sketch, which has been sent to us from Capetown by "Interested," shows how a lightweight B. and B. carburetter of ordinary type can be altered to an automatic carburetter having one-lever control. The original extra air hole is covered, and all the air is taken from the bottom air holes, which are enlarged as shown by the dotted lines. The admission of air is now controlled in two ways—(1) by the uncovering of the elongated holes, and (2) by means of the taper choke tube, which rises and falls as the throttle is opened. The throttle and air slides can be joined together to form the new throttle or a new slide can be fitted. The top of the jet is slightly tapered. The adjustment of the air opening in relation to the throttle can be made by the screws D. "Interested" has this carburetter fitted to a lightweight N.S.U. and finds it most satisfactory and efficient.



A, throttle
B, sliding choke tube attached to A which uncovers the air holes as it rises
C, air holes, enlarged as shown by dotted lines
D, screws holding B to A

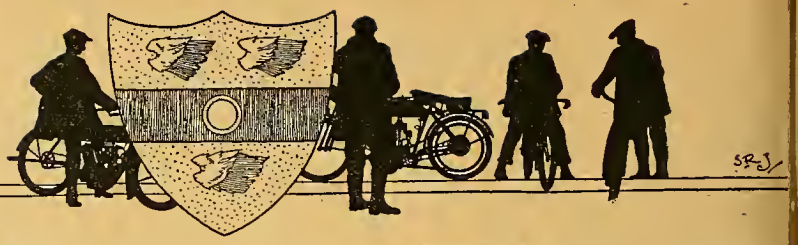
A TIP FOR ALL-WEATHER RIDERS.

If an all-weather rider does not mind spoiling the appearance of his machine, he can coat the whole of the parts with lead coloured paint which will protect the enamel and will not look at all unsightly if properly done. Such paint can be removed when desired with the aid of a solvent like turpentine or benzine. The bright parts of machine tools are often treated in this manner for the purpose of transit or for storing, and the result is not at all displeasing. This method has one great advantage over the vaseline coating in that it does not accumulate dust



The 1912 model lady's 3½ h.p. Rudge, which, as will be seen, is identical with the design of the standard men's machine, except for the cut away top tube and belt guard.

CLUB NEWS



Woolwich, Plumstead, and District M.C.

The inter-team trial in connection with the S.E. London M.C. will take place on the 16th inst.

The Easter tour to Cheddar will start on April 4th.

Bristol M.C.C.

Despite the horrible state of the roads, which, in fact, were so bad that several turned back owing to skids, the speed-judging competition was a great success, and resulted as follows: 1, F. P. Davies (3½ Rudge and sidecar), 10s. error; 2, E. Kickham (2¾ Douglas), 12s. error; 3, S. J. Webber (3½ Triumph), 14s. error.

Redditch and District M.C.C.

At the annual general meeting held on Wednesday, the 6th inst., the following officers were elected: President, Dr. Prothero Smith; captain, Mr. H. T. Guise; treasurer, Mr. Frank Hyde; secretary, Mr. W. F. Skinner, 4, Prospect Hill, Redditch. Members who wish to have the A.C.U. facilities must pay their subscriptions (6s. each) at once, as members' names and fees are sent up to the A.C.U. as received by the club.

Bournemouth and District M.C.C.

The opening run was held on the 3rd inst. to Lyndhurst and Rufus Stone in the New Forest. Several other runs have been arranged for the remainder of the present month. On the 13th inst. the meet is at King's Park, at 2.45 p.m., for Salisbury. Any local motor cyclists who wish to join the club are cordially invited to send their names to Mr. Noble Iddon, hon. sec., Berkdale, Shaftesbury Road, Bournemouth.

Oxford M.C.C.

The classes for the open hill-climb on April 13th are as follows: Junior T.T. machines; T.T. machines up to 500 c.c.; standard single-geared touring single-cylinder machines; standard single-geared touring twin-cylinder machines; standard variable-geared touring single-cylinder machines; standard variable-geared touring twin-cylinder machines; standard touring machines up to 150 lbs., single or variable geared; any type of single or twin up to 1,000 c.c.; standard touring sidecar combinations up to 1,000 c.c.; standard touring cyclecars up to 1,100 c.c., weight in touring trim not exceeding 7 cwts., or chassis weight, including tyres, not exceeding 6 cwts.

Bradford M.C.C.

The open hill-climb will take place on May 18th. Fu details will be published later. There will also be minc hill-climbs on March 30th and May 4th, and reliability trial on April 28th and May 12th.

Herts County A. and A.C

The open trial on Saturday, the 23rd inst., will start fro the Old Salsbury Arms, Barnet. With slight deviations, th route will be much the same as in the last trial. The speci tests will be a 10 m.p.h. hill-climb, a stop and restart on hill, and a fast hill-climb. Entries close Saturday next, th 16th inst. Particulars may be had from Mr. C. C. Cook North Mimms, Hatfield.

Mersey M.C.

On the 8th inst. an interesting lecture, illustrated b limelight views, was given to an appreciative audience b Mr Chas. F. Larkin, F.R.C.S. The lecturer described tour via York, Newcastle-on-Tyne, and Carlisle to the Lak District. On the 18th inst. Mr. Bennett will lecture o "Magnetos"; this lecture will be held at the club head quarters, and all motorists are heartily welcome.

Birmingham M.C.C.

The Easter reliability run to Perth will be on April 6t and the return will be made on April 8th. This is the longe reliability trial that has ever been organised in the province and a large entry is expected. The competition is open Birmingham Club members only, owing to the difficulty o obtaining a permit for a two days' open trial. Intendin members may obtain particulars of the competition an terms of membership on application to the trials hon. sec Mr. Harold J. Cox, 21, Stirling Road, Edgbaston.

Western District M.C. (London.)

On Saturday, the hill out of Rickmansworth was th scene of an impromptu hill-climbing contest. The way th vice-captain's (F. W. Ritchie's) three-speed 2¾ h.p. Humbe climbed it called forth much favourable comment.

The next club run is on the 17th inst., to Stokenchurc (King's Arms), starting from the Horse Troughs on Ealin Common at 10 a.m.

The hon. secretary, Mr. G. Tweedie, A.M.I.E.E., 1 Baldwyn Gardens, Acton, W., will be glad to send particu lars of the club to motorists in Ealing and neighbourhood



Start of the Bournemouth Motor Cycle Clu Opening Run o the 3rd inst. to King's Park.



L. V. Head, the talented young artist whose sketches have recently been reproduced in *The Motor Cycle*. He is shortly going to Canada and will take his Minerva machine with him.

Sidecar for Milk Round.

I am thinking of starting a milk round, and wish to deliver from the farm, which is about seven miles distant, so I should like to know if you think a motor cycle with box similar to a sidecar would be reliable enough, provided I got a good machine, as it would mean thirty miles a day in all weathers? The weight would be equal to myself—12 to 13 stones. I should also like to know your opinion of what it would cost to run, including wear and tear. I prefer a single-cylinder, as I am only a novice.—G.R.

e think the idea is an excellent one, and ould recommend you to get into commun- cation with one of the sidecar makers garding the manufacture of a special tachment for your purpose. You may ckon the cost to be from 1d. to 1½d. a ile. We should recommend you to get a st-class make of motor bicycle fitted with riable gear.

Sidecar Weight.

I am hesitating in the purchase of a sidecar, and would be much obliged for replies to the following enquiries: (1.) In the case of a sidecar driven by a 3½ h.p. three-speed James (single cylinder of large capacity, 557 c.c.), what is roughly the most suitable weight of car, in order to prevent unduly taxing the power of the engine, on average roads with gradients reasonable for the combination? (2.) Would a torpedo body on a chassis as light as is consistent with safety, be too heavy a type for such a machine to pull? (3.) Does the torpedo body possess any advantage or disadvantage as regards distribution of weight, in that some luggage may be carried in the front portion of the car?—HARICOT.

1.) Your machine should certainly be able o draw a sidecar weighing from 90 to 00 lbs. (2.) A torpedo body would not be oo heavy. (3.) It affords better protection o the passenger than the ordinary pat- ern, and is cosier. It is not advisable o place much weight in the front of the idecar; luggage is best placed at the rear.

Testing Dry Cells.

Please tell me why a dry cell will not work a trembler coil on my motor cycle, whereas an accumulator will, though I have tried adjusting the points on the coil, but without success. It is a wipe commutator. The accumulator shows four volts exactly, and the dry cell 4.125, on a voltmeter.—H.F.

Many trembler coils are most extravagant in current, and if the coil takes a great deal of current, the dry cell tires very quickly. What we should advise you to do is to write to the makers of the dry cell, and ask them to supply you with a coil suitable to work in conjunction with it. It is no use testing a dry cell with a voltmeter, as, although the voltage may be high the ampèrage may be quite insufficient. Dry cells should be tested by being momentarily connected to the terminals of an ampèremeter.

NEXT THURSDAY!

THE MOTOR CYCLE

NINTH SPECIAL SPRING NUMBER.

An Easter Tour.

Please give me the most interesting route for an Easter tour from Lincoln *viâ* Oxford to Winchester, coastwise to Exeter, then north *viâ* Gloucester, Stratford, and Warwick to the Dukeries.—E.A.D.

We have pleasure in giving the following route: Lincoln, Grantham, Oakham, Uppingham, Kettering, Northampton, Towcester, Brackley, Oxford, Abingdon, East Ilsley, Newbury, Whitchurch, Winchester, Romsey, Ringwood, Poole, Lychett Minster, Wareham, Dorchester, Bridport, Lyme Regis, Colyford, Exeter, Honiton, Chard, Ilchester, Shepton Mallet, Radstock, Bath, Nailsworth, Stroud, Gloucester, Cheltenham, Evesham, Stratford-on-Avon, Warwick, Coventry, Hinckley, straight on to Nottingham, then through Mansfield, Worksop, West Drayton, Newton, to Lincoln. For details as to the roads round the Dukeries see a map of Nottingham and Derbyshire.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"H.T." (Hull).—3½ h.p. Lincoln-Elk.

"B.R.H." (Leeds).—Atlas inner case.

"R.H.C." (Bridgwater).—3 h.p. Lincoln-Elk.

"T.M." (Taunton). — Haslam non-stretching belts.

"O.J.J." (Barnes).—2¼ h.p. F.N.

"J.P." (Cambridge).—Albion, D.H.K., and Mahon clutches on 3½ h.p. machines.

"L.P." (Rossnakill.)—3½ h.p. Lincoln-Elk with sidecar.

"D.M.D." (Llandrindod).—6 h.p. Zenith sidecar, consumption and reliability.

"E.D.F." (Great Wakering).—Thornton two-speed free engine hub with 3½ h.p. sidecar.

"J.I." (Auchinblae).—2¾ h.p. Douglas and 3½ h.p. Humber two-speed models with and without sidecar.

"P.E.H." (Oakham).—3½ h.p. New Hudson three-speeds and sidecar.

"P.Q.R." (Dartmouth).—3 h.p. Matchless-Jap twin, 3½ h.p. P.V.-Jap twin, and 3½ h.p. New Hudson III. B.

"P.M.P." (Altrincham). — Smith's speedometer, 3½ h.p. 1912 clutch model B.S.A.

"B 3669."—5 h.p. A.J.S. with and without sidecar.

"H.G." (Sherborne).—Binks carburetter on four-cylinder F.N.



A STUDY IN EXPRESSIONS.

A passenger machine in the A.C.U. one-day "trial" was assisted by willing hands on the 1 in 4 gradient of Cudham, which fact appeared to be amusing to everybody except the driver! The passenger seemed to be particularly elated. We wonder if his expression changed when he heard of other passenger machines which stopped at the self-same spot.

A Novel Waistcoat.

Messrs Harrison and Co., 76, Finsbury Pavement, E.C., have introduced a novel form of waistcoat which possesses several peculiar advantages. It is very light and weighs only 1 lb. It buttons up tightly round the throat and over the chest, and being made of linen enclosing two layers of waterproof paper, and lined with flannelette, is extremely warm. It also possesses the further advantage of being very moderate in price.

Company Notices.

On page 1193 of the *London Gazette*, 16th February, a statement appears to the effect that the Rom Tyre and Rubber Company, Limited, in pursuance of Section 188 of the Companies (Consolidation) Act, 1908, will hold a meeting of creditors for the purpose provided in the said section. We are asked to point out that the said notice refers solely to the 1908 company, which was bought up by the Rom Tyre and Rubber Company (1909), Limited.

Of Interest to Lancashire Readers.

A depot has been opened at 19, Hardman Street, Manchester, by Messrs. Kemps, vulcanising experts, for repairing and retreading covers and fitting new butt ends to air tubes. The same firm is acting as wholesale stockists for Robert's belts, non-skid bands, clip-on gaiters, etc.

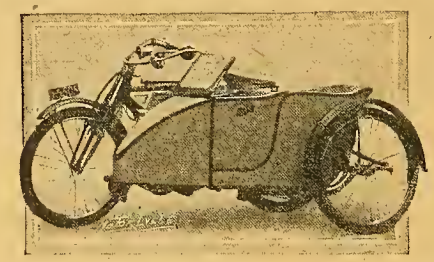
Tourist's Handbooks.

A handy pocket book has lately been introduced by the Homeland Association, Ltd., Chandos Chambers, 15, Bedford Street, Stand, W.C., entitled "Our Homeland Churches and How to Study Them." The illustrations are particularly good.



The Tulip Sidecar.

The accompanying illustration shows an original sidecar called the Tulip, made by Mr. M. J. Varley, 57, Stoney Lane, Birmingham. The body is made on the lines of a car body and the seat is adjustable, while underneath there is a



toolbox; there is also another under the footboard. The wind screen has patent joints which enable it to be adjusted to any angle. The chief feature of the chassis is the tube being set down from the main back axle, thus giving a drop of about 5in. The springs are C-shaped and shackled. On the rear axle is a smart luggage carrier which turns on three T lugs, and can be used as a stand.

Catalogues Received.

The new Humber catalogue is a handsome brochure, which, besides describing in detail and illustrating the various different models, also contains an entertaining account, with illustrations, of the Junior T.T. Race. Sections of the free-engine hub and two-speed gears are also included, besides drawings and descriptions of the important parts which go to make such a successful machine on road or track.

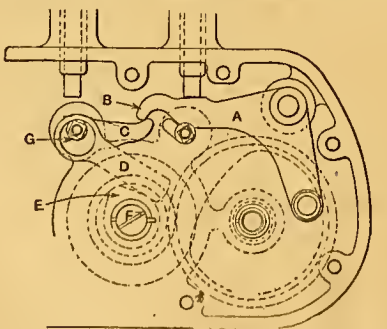
If any prospective motor cyclists are hesitating whether to adopt the pastime or not, and had an opportunity of glancing through the Clyno Engineering Co.'s latest catalogue—"The Book of the Clyno Sidecar"—they would hesitate no longer. In this book are reproductions of many interesting and exciting incidents in the career of the Clyno machine, many of the illustrations having already been published in these pages. Of course one must not forget the descriptions and illustrations of the 5-6 h.p. Clyno sidecar model with two-speed gear, also the standard machine, Colonial model, and detail illustrations of the power unit and transmission. Copies can be obtained on application to the firm at Pelham Street, Wolverhampton.

The 1912 catalogue of Royal Ruby motor cycles, sold by the Royal Ruby Cycle Co., Great Ancoats Street, Manchester, has been received. The illustrations show that the standard model has a frame with the top tube dropped at the rear. Druid spring forks, front wheel stand, kick-up back wheel stand, and tubular luggage carrier. The models listed are 2½ h.p. and 3½ h.p., with Roc two-speed gear and free engine. Two types of frec engine clutches can be supplied to order, the D.H.K. and the Villiers.



A Decompressor.

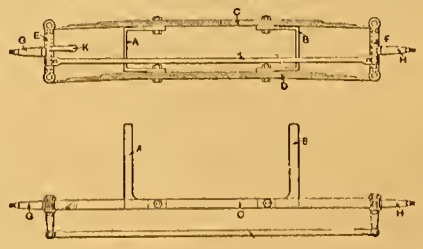
Although this invention has been patented by the Triumph Co., it must be understood that it is not at present being manufactured. The principle of its operation consists in raising the exhaust valve slightly for a part of the compression stroke, and the means whereby this is effected is shown in the view of part of the timing gear given. The usual exhaust valve rocker A is provided with an extension B, which is engaged by one arm of a bell crank lever C, the other arm D of which lies in the path of a



cam E carried by the pinion F. The device is illustrated in its operative position, and it will be clear that slight rotation will bring the swell of the cam E into engagement with the arm D of the lever C, resulting in the exhaust valve being lifted; and this is timed to take place during part of the compression stroke, with the well-known result. To enable the lever C to be moved into and out of its operative position, it is mounted upon an eccentric G, to which is connected a control device of any suitable kind.—Triumph Cycle Co., Ltd., and A. G. Franklin, No. 4,772, 1911.

Tricycle Spring Suspension.

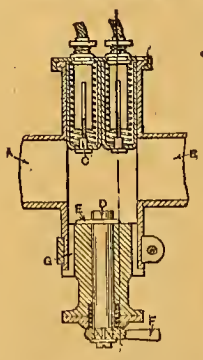
The accompanying elevation and plan illustrate a spring suspension for tricycles having two front steering wheels. Bolted



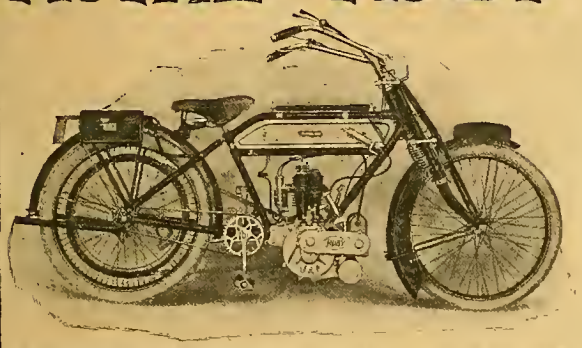
to the longitudinal frame members A B are laminated springs C D, the ends of which are formed to receive swivelling standards E F carrying the wheel axles G H. The standards E F are provided with a tie rod J, and a steering arm K is carried by the standard E.—A. H. G. Girling, No. 1,269, 1911.

B. and B. Carburetter Improvement.

The carburetter body is of cruciform shape, A being the extra air inlet and B the gas outlet. These passages are controlled by slides C as usual. The fuel jet D is variable, being provided in the construction illustrated with an eccentrically mounted cover plate E, carrying a lever F at its lower end to permit of easy adjustment. The main air enters by the ports G arranged around the jet nozzle, and the columns of air thus formed impinge on one another and upon the jet of fuel, assisting in forming an intimate mixture. In a later model these holes are placed higher up and can be covered by a slide.—C. Brown and Brown and Barlow, Ltd., No. 1,412, 1911.



ROYAL RUBY



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Our Specification cannot be beaten.

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CHATER-LEA FITTINGS.
BOSCH MAGNETOS AND PLUGS
BROWN AND BARLOW'S CARBURETTERS.
DRUID SPRING FORKS
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DUNLOP TYRES AND BELTS.
BROOKS' SADDLES AND TOOLBAGS.
VILLIERS' FREE ENGINE HUB
ROC TWO-SPEED AND FREE ENGINE HUB.
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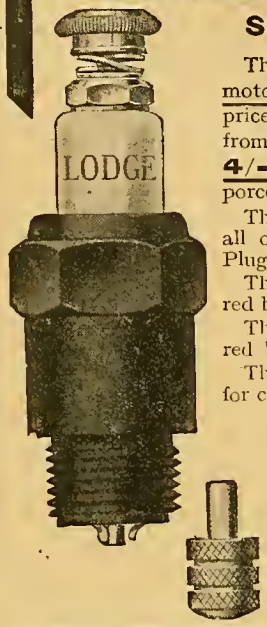
The Royal Ruby Cycle Co., "Ruby" Works, Great Ancoats Street, MANCHESTER.

FOR EASTER

Don't forget to order one of the new

T.T. STEATITE

LODGE



SPARKING PLUGS.

This most perfect plug for all motor cycles, formerly sold at the price of 5/- each, is now (dating from March 1st) being sold at **4/-**, the same price as the regular porcelain type Lodge Plug.

The new type will be supplied to all orders for Lodge Motor Cycle Plugs, unless otherwise specified.

The porcelain type are in plain red boxes.

The new Steatite type in striped red boxes.

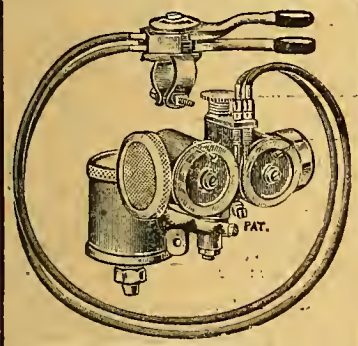
The green boxes contain the type for cars.

PRICE **4/-** EACH.

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14

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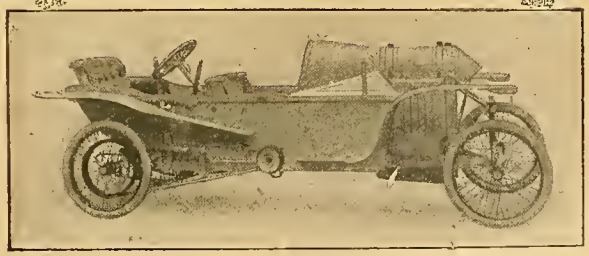
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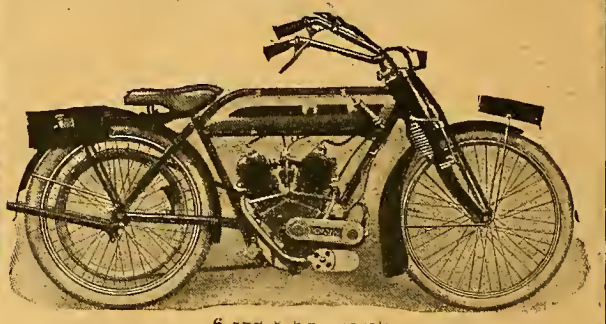
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Design, Workmanship, & Finish

NOW IS THE TIME TO BOOK YOUR ORDER FOR ONE OF THESE EXCELLENT MACHINES.

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Sole Agents for Manchester & District for the Canoelet Sidecars.

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PUNCTURES HAVE NO TERROR.

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"THE MOTOR CYCLE" ROUTE BOOK.
An invaluable companion to motor cyclists. Carefully chosen routes with best surfaces are given throughout the whole of the British Isles.
Price **1/6** net. Post free **1/9.**

Obtainable from "THE MOTOR CYCLE" Offices, 20, Tudor St., London, E.C.

SIDECAR MODELS.

Can give prompt deliveries of

"CLYNO." "BAT." "ENFIELD." "INDIAN."

Upwards of 100 second-hand Bargains.

Note the following and write for complete list.

1911 3½ h.p. F.E. **TRIUMPH**	£43	0	0
1911 3½ h.p. T.T. **TRIUMPH**	£42	0	0
1909 3½ h.p. F.E. **TRIUMPH**	£35	0	0
1909 3½ h.p. **TRIUMPH**	£31	0	0
1911 3½ h.p. **PREMIER**	£36	0	0
1911 3½ h.p. Two-Speed **HUMBER**	£40	0	0
1910 3½ h.p. Two-Speed **HUMBER**	£35	0	0
1911 3½ h.p. **KERRY**	£35	0	0
1910 2¾ h.p. Twin **ENFIELD**	£22	10	0
1910 2¾ h.p. Twin **MOTO-REVE**	£22	10	0

All machines guaranteed.

ROBERT BEVAN, Castle Street, CARDIFF.

£50,000.

This represents the value of new machines now in the course of being delivered at Hitchen's, of Morecambe. They comprise: P. and M.'s, Scotts, Jap-Bats, chain drive, and 3½ h.p. belt drive, with P. and M. two-speed gear; Matchless, 5-6 h.p. and 7-8 h.p., besides the No. 7 passenger model; Clynos, with and without sidecars; Zenith, 3½, 6, and 8 h.p. models; Humbers, lightweights, with and without three-speed gear, also 3½ h.p. two-speed gear models; Premiers, lightweights, with and without three-speed gears, also 3½ h.p. two-speed gear models; Lincoln Elks, lightweights, 3½ h.p., with and without two-speed gear, also free-engine models; Bradburys, chain drive and belt drive, two-speed gear, also single gear and free-engine models; Rudges, ordinary models, free engine, and multiple-speed; Douglas, all models; Motosacoches, all models; Indians, clutch model and two-speed; F.N. ditto; Triumphs, ordinary models and free-engine models; A.C. tricars; Morgan runabouts; Turner's light petrol car; Rolla cars, and several others, and THE BEST OF THE BEST in the Motor Cycle and Light Car productions.

We have these machines coming in to our order each week, and we believe we are correct in stating that we have the largest stock of new machines for sale ever gathered under one roof. It is not a misplaced title to call our Garage the "Olympia of the North."

The reason we have a greater stock than all other people is because we have not indulged in the luxury of booking our stock in advance, preferring to get the stuff and risk finding the customers afterwards. By doing this we are saved a good deal of unpleasantness ourselves, and it saves much irritation to our clients, and, altogether gives more satisfaction than would be the case if we rushed into booking orders on the strength of our contracts. There are none of the high-class makers to-day in a position to deliver up to contract, practically all of them being behind for one reason or another. We could have sold most of our contracts at and about show time, but after our experience of PAST SEASONS we decided to adopt our present attitude, and we have, so far, not had any cause to regret it, as we have been able to find customers week by week immediately the machines have been ready for delivery. We shall continue to follow this course of procedure all through the season, and you can always rely upon Hitchen's, of Morecambe, having machines in stock, or coming in within the course of a few days, that is, subject to the makers not getting any further behind with their deliveries.

In MANY OF OUR CONTRACTS we have as many as **12** machines of one make per week coming through later on in the season, and at the present moment as many as 4 coming through each week; so you will clearly see we are **prepared** for the **boom**, and CUT OUT TO DELIVER machines without the previous irritation and vexations. We hope our clients WILL BEAR THESE THINGS IN MIND, as we are wishful to drive these facts home, and feel sure that a buyer of a machine would much prefer to deal with us than to book his order with a firm who merely HAS THEM ON ORDER, and who may or may not be in a position to give reasonable delivery.

With us a WIRE or TELEPHONE CALL will at once give you the information required. We have often thought how few people appreciate the advantages offered by the use of this handy mode of communication. For a matter of sixpence or a shilling you can speak to Hitchen's, of Morecambe, as comfortably as if you were by our side in the Garage. We ourselves never lose any opportunity of speaking to a client if we know he is on the telephone. Distance is altogether immaterial to us; so long as we know that he is on the telephone, we try that way to bring a deal off. When you write us, please say if you are on the telephone; and if so, give your number, and intimating what time you would like us to ring you up. We shall always be pleased to do this, and make no charge for the accommodation. Our clients have thus a chance of speaking to Hitchen's, of Morecambe; and if there is any prospect of our arranging a deal, we are "on the jump" to bring it off. If you have no telephone of your own, you can visit a friend who has, or call at the nearest telephone office, and by paying for one or two calls you can, in a general way, fix up any deal that you may have in your mind. Our number is "112, Morecambe." If you call us up in the morning, say before **ten o'clock**, or in the afternoon after **four**, there is a good chance of your having a clear line, as at these times there is not much doing, as compared with other times during the day. Or again, if you call us up after six in the evening, we believe we are correct in stating that you will get six minutes for the same price as three minutes during the day, and as we are open until eight o'clock at night, there is a chance for the business man to fix up his private matters after he gets home at night. If you are wanting to buy a machine quick, there is no better system than this.

If, however, you do not feel interested in the telephone, remember that a telegram is just as cheap, and sometimes cheaper. If neither mode meets your views, you can always fall back upon the marvellous "penny post." We mention "penny post" specially, because many people seem to have an idea that it is possible to send a letter for halfpenny so long as they leave the envelope unsealed. This is not so, and if you only put halfpenny stamp on, Hitchen's are charged a penny before they get the letter. The Government are giving pensions at seventy years, with hopes of them at seventeen in the sweet by and by, also giving you ninepence for fourpence, and other luxuries, but persist in asking a penny for the carriage of a letter.

In writing to us it is a good plan to put your name and address on all your communications. We get a dozen letters and postcards every week without names on. Sometimes we can send them to the address, but more often than not the only place we can put them is to consign them to the waste paper basket. This is a pity, as it is a waste of energy on the part of our correspondents when this is all that we can do with them. Then again, another peculiarity of some of our clients is to put their name and address on the first letter they send us, and only their initials on their subsequent communications. All our correspondence is filed away every morning under the letter of their names, and unless you write full name we cannot trace.

Let's have that p.c. for list sharp.

HITCHEN'S, Morecambe.

'Phone: 112.

Telegrams: "Motor, Morecambe."

LUKIN SINGLE CONTROL CARBURETTER.

EXTREMELY SIMPLE. ABSOLUTELY AUTOMATIC. VERY FLEXIBLE.



"The Motor Cycle" says:—

"... We have had the opportunity of giving it (the Lukin) a thorough road test on one of our machines. The Lukin has given great satisfaction under all conditions; it enables the engine to run extremely slow (slower in fact than any standard carburetter we have tried) and at the same time the engine will pick up at once on suddenly opening the throttle, without any of the hesitation which is a feature on only too many present-day carburetters...."

A rider who uses a Triumph machine fitted with the Lukin says:—

"... I need hardly add that the engine keeps much cooler when using the Lukin, as the mixture is always correct...."

A rider who uses a Rudge machine fitted with the Lukin says:—

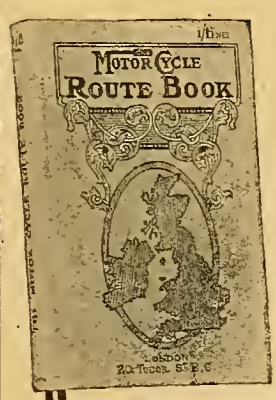
"... I am getting over 100 miles per gallon. I fully endorse all you say with regard to the merits of the carburetter, which is so much pleasanter to drive with, especially in traffic, than the old-fashioned two-lever type...."

Write for particulars to

LUKIN, LTD., The Ride, Newcomen St., Borough, London, S.E.

SPECIAL AGENTS—

THE SERVICE CO., LTD., 292-3, High Holborn, London, W.C.
H. TAYLOR & CO., 21a, Store Street, Tottenham Court Road, London, W.C.



WHERE ARE YOU GOING AT EASTER?

. . . .

All best routes are given in

"The Motor Cycle"

ROUTE BOOK.

It contains descriptive main routes for the whole of the United Kingdom; speed limits; forty-five maps (Bartholomew); and copious index.

Price **1/6** net. .. .. By post, **1/9.**

Obtainable at ILIFFE & SONS Ltd., 20, Tudor Street, London, E.C., and leading Bookstalls.

(Remittance must accompany all post orders).

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII.
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION IX.
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

Wauchopes EXCEL FOR PROMPT DELIVERY AND KEEN PRICE.

ASK FOR TO-DAY'S LIST.

WE HOLD THE LARGEST AND MOST REPRESENTATIVE STOCK READY FOR INSTANT DELIVERY, AND OUR LARGE CONTRACTS ALLOW US TO GUARANTEE PROMPT FUTURE DATES.

OUR BARGAIN OFFERS TO-DAY INCLUDE—

5104.	3½ h.p. 1912 **ZENITH-GRADUA** ..	£50	0
5107.	2⅜ h.p. 1911 Standard **DOUGLAS**..	£30	0
5108.	2⅜ h.p. 1910 Standard **DOUGLAS**..	£24	0
5114.	3½ h.p. 1911 2-speed **BRADBURY** and Sidecar	£45	0
5116.	3½ h.p. 1911 Standard **TRIUMPH**	£37	10
5117.	2½ h.p. 1912 Free-engine **SINGER**..	38 Gns.	
5118.	2 h.p. 1911 **HUMBER**	£27	10
5119.	3½ h.p. 2-speed **C.I.E.**	£22	10
5123.	8 h.p. 1910 Standard **MATCHLESS**	£35	0
5124.	3½ h.p. 1909 2-speed **P. & M.**	£35	0
5128.	3½ h.p. 1909 Tourist **REX**	£22	0
5129.	2⅜ h.p. 1910 Standard **DOUGLAS**	£25	0
5011.	3½ h.p. 1911 standard **BAT**	£38	0
5018.	3½ h.p. 1908 2-speed **P. & M.**....	£27	10
5030.	3½ h.p. 1911 2 speed **HUMBER** ..	£38	0
5036.	2½ h.p. 1911 **MOTOSACOCHE**	£28	0
5049.	3½ h.p. 1910 free-engine **TRIUMPH**	£38	0
4982.	8 h.p. 1911 **BAT-J.A.P.**	£40	0
4989.	3½ h.p. 1911 2-speed **HUMBER** ..	£36	10
4990.	3½ h.p. 1910 **TRIUMPH**, free engine	£39	0
5001.	3½ h.p. 1911 free eng. **BRADBURY**	£40	0
5003.	7 h.p. 1911 free engine **INDIAN**..	£45	0
5005.	2 h.p. 1911 lightweight **HUMBER**	£28	0
5006.	3½ h.p. 1910 T.T. **TRIUMPH**	£34	0
5007.	5 h.p. 1910 2-speed **V.S.**	£35	0
5009.	3½ h.p. 1911 T.T. **BRADBURY** ..	£35	0
4944.	2¾ h.p. 1911 **DOUGLAS**	£30	0
4945.	2¾ h.p. 1911 2-speed **DOUGLAS**, Model E	£38	10
4956.	3½ h.p. 1911 2-speed **HUMBER** ..	£37	10
4957.	8 h.p. 1910 **BAT** and sidecar	£40	0
4964.	3½ h.p. 4-cylinder **F.N.**	£12	0
4913.	3½ h.p. 1911 free engine **TRIUMPH**	£42	10
4921.	2¾ h.p. 1911 2-speed **DOUGLAS**, Model E	£38	10
4926.	3½ h.p. 1910 **PREMIER**	£27	0
4933.	3½ h.p. 1909 **TRIUMPH**	£30	0
4939.	3½ h.p. 1909 **TRIUMPH**	£28	0
4941.	3½ h.p. 1911 2-speed **HUMBER** ..	£38	10
4893.	3½ h.p. **PEUGEOT**	£20	0
4903.	3½ h.p. 1911 tourist **REX**	£30	0
4854.	3½ h.p. 1911 free engine **TRIUMPH**	£45	0
4597.	3½ h.p. 1911 **ZENITH-GRADUA** ..	£42	10
4607.	3½ h.p. 1911 **KERRY-ABINGDON**	£32	10
4760.	5 h.p. 1911 free engine **INDIAN**..	£42	0
4863.	3½ h.p. 1911 **CHATER-LEA-J.A.P.**	£35	0
4828.	3½ h.p. 1911 **JAMES**	£35	0
4733.	6 h.p. 1909 **CHATER-LEA**, 2-sp., chain drive, and sidecar	£40	0
4727.	3½ h.p. 1911 **KERRY-ABINGDON**	£32	10
4533.	2 h.p. 1911 3-speed **HUMBER** ..	£35	0
4758.	3½ h.p. 1911 single-speed **HUMBER**	£30	0
4420.	3½ h.p. 1911 free engine **PREMIER**	£42	10
4768.	2¾ h.p. 1911 standard **DOUGLAS**..	£30	0
4575.	3½ h.p. 1911 standard **BRADBURY**	£35	0
4638.	3½ h.p. 1911 free engine **TRIUMPH**	£45	0
4628.	3½ h.p. 1910 **TRIUMPH**, Mabon, variable gear	38 Gns	
5052.	2¼ h.p. 1910 2-speed **F.N.**	£28	0
5053.	3½ h.p. 1911 **L.M.C.**, variable gear	£35	0
5056.	2¾ h.p. 1911 Standard **DOUGLAS**	£30	0
5058.	3½ h.p. 1911 **ZENITH-GRADUA** ..	£45	0
5064.	3½ h.p. 1911 2-speed **HUMBER** ..	£38	0
5065.	3½ h.p. 1911 2-speed **HUMBER** ..	£40	0
5066.	3½ h.p. 1911 Standard **BRADBURY**, Mabon clutch	£37	10
5082.	2¼ h.p. 1910 **ROYAL ENFIELD** ..	£22	10

We cannot possibly be beaten for price and our Exchange Terms are the fairest and most liberal in the trade. Send details of your used motor cycle, and receive our handsome offer of utmost value in part payment of a new model.

WAUCHOPE'S,
9, SHOE LANE,
FLEET ST., LONDON, E.C.

'Phone: 5777 Holborn. Wires: "Opificer, London."

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

3½h.p. B.S.A., new August, new condition; any trial; £38.—Pawson, Eldon Lane, Bishop Auckland.

TRIUMPH Motor Cycle, engine newly overhauled by Triumph Co., magneto, lamp, and spares; £24.

N.S.U., 4½h.p., magneto, Whittle belt, lamp and generator, and complete; any trial; £13/15.

ROVER Motor Cycle, accumulator, in good running order; £7.

ROBINSON and Co., Motor Garage, Belford, Northumberland.

TRIUMPHS, Humbers, B.S.A., Royal Enfield motor cycles, lightweights, 2 speeds, free engines; write, wire, or 'phone for immediate deliveries.—Turvey and Co., The Motor House, Sunderland. Tel.: No. 626.

3½h.p. Quadrant, accumulator ignition, new B. and B. h.b.c. carburetter, lamp, horn, and tools, all in good condition; £15.—Gerson, 86, Seahouse St., Maryport.

FORCED Sale.—Bargain. 2¼h.p. Minerva, 1910, m.o.v. engine, 1911 Amac, variable jet, h.b.c., accumulator, belt, 48/- tyre, all new, low, very fast; £8/10; offers; must sell.—No. 9,874, *The Motor Cycle* Offices, Coventry.

SECTION II.

York and Lancashire.

A.S.L.'s, A.S.L.'s, A.S.L.'s.

SEE! You glide along the roughest roads and paving stones without bumps.

LOOK Before You Leap.—Free trial willingly given to intending purchasers.

SOLE Agents, Motor Exchange, 32, Downing St. (Ardwick), Manchester. Exchanges arranged; enquiries invited; in stock.

CALTHORPE Motor Cycles.—4½h.p., 2-speed, kick starter, £57/10; 2¾h.p., £35/15; in stock.—Sole agents, Motor Exchange, 32, Downing St., Manchester.

HODGSON for Clyno (in stock).

HODGSON for Premiers (in stock).

HODGSON for Sidecars (in stock).

HODGSON, 10, Horton Rd., Bradford. Tel.: 5361.

ARIELS, at Gourlay's, Fallowfield, Manchester.

THE Great Douglas Agent, Douglas Gourlay, Fallowfield, Manchester.

B.S.A., 1911, new July 400 miles, good as new; £39/10.—Darling, Sunnyside, Keighley.

RUDGE, 1911, free engine, splendid condition; sacrifice £45.—W. Darling, Earl St., Keighley.

WHO'LL HAVE IT?

A Brand New 1912 2-speed Free-engine Motor Cycle, with handle starting, first-class make; **39 Guineas.** Particulars on application.

GUARANTEED IN RUNNING ORDER.

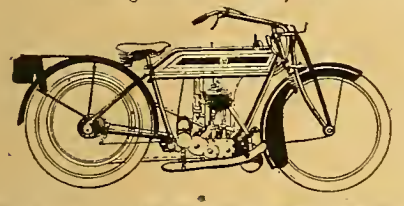
1912 2¾ h.p. Two-speed **REX** Junior, NEW	£45	0
1912 Twin **REX** Sidette. In stock. NEW	£75	0
1911 Free-engine **RUDGE,** NEW	£46	10
1911 3½ h.p. Tourist **REX**	£30	0
1911 2¾ h.p. Two-speed **REX** Junior, as new	£39	10
1911 3½ h.p. **REX,** clutch model	£35	0
1911 3 h.p. **LINCOLN ELK**	£22	10
1911 5 h.p Two-speed **REX DE LUXE**	£47	10
1910 7 h.p. Twin **REX,** HOT STUFF	£37	10
1910 5 h.p. Twin **REX,** very fast	£29	10
1910 5 h.p. **REX DE LUXE,** fine sidecar machine	£42	10
1010 3½ h.p. **REX,** very fast, special machine	£27	10
Magneto Twin **REX,** 1911 Mabon clutch	£21	10
1909 3½ h.p. Two-speed **REX DE LUXE**	£32	10
5½ h.p. Two-speed Twin **ROC,** magneto, Druids	£32	10
1908 3½ h.p. Magneto **REX,** very fast	£22	10
1907 3½ h.p. Magneto **REX,** spring forks	£19	19
5½ h.p. Twin **REX DE LUXE,** Roc clutch, sp. forks	£22	10
Brand New 3½ h.p. **REX,** spring forks, and pedals	£31	0
Brand New Twin Magneto **REX**	£37	15
3½ h.p. Two-speed **N.S.U.,** smart	£21	0
1908 **TRIUMPH,** very powerful	£28	10
Magneto **TRIUMPH,** spring forks, specially low	£25	0
3½ h.p. **REX,** very fine condition	£15	10
Four-cylinder **F.N.,** magneto, spring forks	£18	18
F.N. Magneto Lightweight	£16	10
3½ h.p. Magneto **FAFNIR,** M.O.V.	£19	0
3½ h.p. **WOLF,** Stevens engine, h.b. control	£12	10
Twin Magneto **MOTO-REVE**	£17	10
3 h.p. **QUADRANT,** low frame	£10	10
3½ h.p. **FAFNIR,** very smart, h.b. control	£13	10
2¾ h.p. **F.N.,** in very good order, recommended	£12	10
3 h.p. **HUMBER,** chain drive	£9	10
MOTOSACOCHE, Druid forks	£14	10
3½ h.p. **BROWN,** spring forks, 1911 B. and B.	£14	10

Easy Payments at Special Rates.

1912 BRADBURY / REX } **IN STOCK. LIBERAL EXCHANGES.**

1912 New Sidecars, with latest improvements	£4 19 6
Brand New 1911 3½ h.p. Tourist **REX**	43 Gns
" " 1911 2¾ h.p. Two speed **REX** Junior	50 gns
" " 1911 3½ h.p. Free-engine **REX**	48 Gns
" " 1911 3½ h.p. **REX DE LUXE**	57 Gns
" " 1911 5 h.p. **REX DE LUXE**	60 Gns

Makers' guarantee with every one.



VERY SPECIAL CASH DISCOUNT. GET OUR CASH PRICES BEFORE PURCHASING. WE DEFY ALL COMPETITION.

£3 to £5 DOWN

and 5/- weekly secures prompt despatch of

2¾ h.p. **MINERVA,** magneto, chain drive	£15 10
Lightweight **MOTOSACOCHE,** spray, runs well	£14 10
3 h.p. **QUADRANT**	£10 10
2¾ h.p. **KERRY,** spring forks	£10 10
Twin Magneto **MOTO-REVE,** Druids	£15 0
3½ h.p. **WOLF,** spray, smart, h.b. control	£12 10
3 h.p. **HUMBER,** chain drive	£9 10
3½ h.p. **REX,** spring forks, reliable	£15 10
3½ h.p. **BRADBURY**	£15 0
2¾ h.p. **DE DION**	£10 10
2½ h.p. **J.A.P.,** low frame, spring forks	£9 10

£7

deposit and 10 - weekly secures—

3½ h.p. Magneto **EXCELSIOR**	£16 10
Magneto **TRIUMPH**	£25 10
5½ h.p. Twin **REX DE LUXE,** mag.	£22 10
Four-cylinder **F.N.,** magneto	£19 19
3½ h.p. Magneto **REX**	£19 19
Twin **MOTO-REVE**	£19 19
F.N. Magneto Lightweight	£19 19
3½ h.p. Magneto **MINERVA**	£19 10
Magneto Twin **REX**	£19 19
3½ h.p. Magneto **FAFNIR,** M.O.V.	£19 0

The Halifax Motor Exchange

Largest Rex Dealers,

16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams, "Perfection."

MOTOR BICYCLES FOR SALE.

3½ h.p. Rex, new Clincher studded tyres, new belt, Bosch, B. and B., 2 new carrier bags, perfect condition; £18.—Armitage, Shambles, Barnsley.

LIVERPOOL Official Agents for Bradbury, Zenith, Singer, Rex, Alcyon, Moto-Reve; delivery from stock.—F. C. Jones and Co., 3, Redcross St., Liverpool.

1911 Bradbury, free engine, £35; 1911 New Hudson, Mabon clutch, £34; 1911 Indian, 5h.p., free engine, £38.—Johnson, 114, Cambridge Rd., Southport.

1912 New Hudson, 3½h.p., 3-speed, just arrived, 57 guineas; Bradbury, Bosch magneto, £16.—Johnson, 114, Cambridge Rd., Southport.

4 h.p. Accumulator Machine, h.b.c., low position, £7/10, exchange entertained; also good rigid sidecar, with hood, Chater-Lea couplings, £3/10.—Hart, College St., Hull.

RUDGE, 3½h.p., 1911, free engine model, practically new, unscratched, only ridden 860 miles, splendid condition; offers wanted.—Hart, College St., Hull.

3½ h.p. Magneto Motor Cycle, 1911 B. and B., excellent condition; £14/10, or will exchange for twin, cash adjustment. — A. Wood, 8, Hanover Av., Leeds.

2¾ h.p. Enfield, 2-speed, free engine, complete with accessories, used 3 months, run 1,200 miles; £15 under cost.—Atkinson, 103, Falsgrave Rd., Scarborough.

TRIUMPH, 1911, free engine model, excellent condition, new Kempshalls, all accessories, spare belt and valve; bargain, £42/10.—31, Princess Rd., Urmston, Manchester.

HUMBER, 1911, 3½h.p., 2 speeds, free engine, perfect, tyres as new, take sidecar anywhere, unpuncturable butt-enders, Dunlops; £38, no offers.—Riding, 227, Crookes, Sheffield.

1911 Premier, £34; 1911 Bradbury, £35; 1910 Triumph, £35; 1910 P. and M., £38; 1912 Triumphs, P. and M.'s, Bradburys, Ivy motor cycles.—T. Reed, Nettlesworth.

1911¼ Free Engine Triumph, unscratched, good as new, ridden 700 miles, Palmer back, Whittle, exhaust whistle, tools; £42/10.—Apply, Horne, Rome Terrace, Middlesbrough.

MANCHESTER, Colmore Depot, 261, Deansgate.—1911 Triumph, clutch, Lucas lamp, horn, watch, speedometer, Gloria, best model sidecar, tubes, belts, etc.; £65 lot, bargain.

MANCHESTER Colmore Depot, as above. — 1911 Douglas, fixed gear, brand new, December delivery; to clear at £35/10.

MANCHESTER. — Matchless, 1912, any model, earliest deliveries; 8a.p. 2-speed, most popular passenger machine.—Write, Colmore Depot, 261, Deansgate.

MANCHESTER.—Matchless, 1911, 3½h.p., single speed, not done 1,000 miles, as new, perfect condition; cheap, £37.—Colmore Depot, 261, Deansgate.

MANCHESTER.—A.J.S., 1911, brand new, 2-speed, chain drive, guaranteed; list price 44 guineas, first cheque 39 gnineas secures.—Colmore Depot, 261, Deansgate.

MANCHESTER, Colmore Depot, 261, Deansgate.—You want a Matchless, Douglas, Premier, Rudge, Bradbury, N.S.U., or other make. Write us. Exchanges our speciality.

MANCHESTER.—A.J.S., 1911, single speed, done only 600 miles, as new; £33/10.—Colmore Depot, 261, Deansgate.

MANCHESTER.—Enfield, 1910, single speed, good order; £20.—Colmore Depot, 261, Deansgate.

MANCHESTER.—Douglas, 1909, single speed, good order; trial; £24/10. — Colmore Depot, 261, Deansgate.

MANCHESTER.—Rudge, 1912, clutch model, exhaust whistle.—Write us, as above, Colmore Depot.

3½ h.p. Quadrant, B. and B. carburetter, Bosch magneto, spring forks, lamp, tools, reliable machine, and good climber; £25, or near offer.—Herbert W. Turner, Church Lane, Brighouse.

4 h.p. Roc, late 1910, 2 speeds, free engine, Bosch, B. and B., Whittle, very low, enamelled grey, recently overhauled; any examination; £27/10.—Slater, 152, Todmorden Rd., Burnley.

MIDGET Bicar, 3½h.p. Fafoir engine and 2 speeds, Druid spring forks, low position, new condition; £20; getting 1912 machine.—Douson, 24, Armitage Crescent, Lockwood, Huddersfield.

TWIN Kerry, 5½h.p., new Clincher tyres and tubes, B. and B. carburetter, B100 saddle, good running order; bargain, £15, or part exchange for single-cyl. magneto.—White, Abbey View, Selby.

NEW Hudson, 2¾h.p., 3-speed gear, free engine, only run 100 miles, complete with exhaust whistle, lamp, horn, accessories; cost £55, will accept £45.—Holmes, 47, Promenade, Southport.

5 h.p. Twin Rex, 1910, 2-speed gear, Roc clutch, B. and B. carburetter, steel-studded back tyre, almost new, in running order, splendid sidecar machine; £35.—R.J.S., 1, Willows Rd., Middleshrough.

5-6h.p. 4-cyl. F.N., magneto, bought May, 1910, fast and powerful, perfect condition, tyres recently new, headlight, trip cyclometer, spare tube, etc.; £25.—9, Slade Hall Rd., Longsight, Manchester.

REY

5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.

Telegrams: "Rey, Hampstead."
Telephone: 2678 P.O., Hampstead.

EXTENDED PAYMENTS

Taken on any Machine or Runabout.

Following 1912 Machines for

IMMEDIATE DELIVERY.

1829. **TRIUMPH** Standard Model	£48	15
1839. **TRIUMPH** Standard Model	£48	15
1714. **RUDGE** Standard Model	£48	15
1691. **RUDGE** T.T. Model	£48	15
1706. **RUDGE** F.E. Model	£55	0
1820. **ZENITH** 6 h.p. Model	£70	7
1821. **ZENITH** 6 h.p. Model	67	Gns
1827. **ZENITH** 6 h.p. Model	67	Gns
1836. **ZENITH** 3½ h.p. Model	53	Gns
1843. **ZENITH** 3½ h.p. Model	53	Gns
1835. **DOUGLAS** L Lady's Model	£52	0
1833. **DOUGLAS** J T.T. Model	£47	0
1846. **DOUGLAS** G Standard Model	£41	0
1702. **BRADBURY** Standard Model	£48	0
1728. **BRADBURY** Standard Model	£48	0
1742. **BRADBURY** Standard Model	£48	0
1697. **BRADBURY** Standard Model	£48	0
1743. **BRADBURY** F.E. Model	£54	10
1745. **BRADBURY** F.E. Model	£54	10
1744. **BRADBURY** F.E. Model	£54	10
1703. **BRADBURY** F.E. Model	£54	10
1698. **BRADBURY** T.T. Model	£48	0
1729. **SINGER** 3½ h.p. 3-speed Model	£58	10
1808. **LINCOLN ELK** 3½ h.p. Standard Model	£34	5
1798. **HUMBER** 3½ h.p. 2-speed Model	£52	10
1799. **HUMBER** 3½ h.p. 2-speed Model	£52	10
1815. **BAT** 8 h.p. 2-speed Chain Model	£75	0

G. & N. Runabout in four weeks.

Any other makes on application.

TRADE SUPPLIED WITH VARIOUS MAKES. LIBERAL DISCOUNTS ALLOWED.

Machines at Bargain Prices to Clear.

1555. **TRIUMPH** 1910 F.E. Model	£33	0
1671. **TRIUMPH** 1909 Standard Model	£27	0
1770. **TRIUMPH** 1910 F.E. Clutch Model	£29	0
1784. **TRIUMPH** 1910 Standard Model	£30	0
1822. **TRIUMPH** 1910 F.E. Model	£33	0
1836. **TRIUMPH** 1911 Standard Model	£38	0
1840. **TRIUMPH** 1910 F.E. Model	£33	0
1640. **ZENITH** 1911 3½ h.p. Model	£41	0
1653. **ZENITH** 1911 3½ h.p. Model	£38	0
1654. **ZENITH** 1911 3½ h.p. Model	£38	0
1786. **ZENITH** 1911 3½ h.p. Model	£40	0
1803. **ZENITH** 1911 3½ h.p. Model	£38	0
1785. **BRADBURY** 1911 T.T. Model	£30	0
1802. **BRADBURY** 1911 Standard Model	£32	0
1569. **LINCOLN ELK** 1911 F.E. Clutch Model	£25	0
1859. **DOUGLAS** 1910 Standard Model	£25	0
1855. **BAT** 1911 8 h.p. Model	£36	0
1857. **BAT** 1911 5 h.p. T.T. Model	£38	0
1823. **BAT** 1910 8 h.p. 2-speed Model	£42	0
1841. **RUDGE** 1911 Standard Model	£29	0
1825. **J.A.P.-CHATER** 3½ h.p. and Sidecar	£15	0
1858. **F.N.** 2¼ h.p. 2-speed Model	£26	0
1099. **HOBART** 2¼ h.p. 1911 (New) Model	£27	10

Second-hand Sidecar, good order, £8 10s.

THE

£4 - 10 REY Sidecar £3 - 10

With Hutchinson or Michelin 26 x 2¼ Tyre and Tube, 30/- extra.

The famous "REY" EXHAUST WHISTLE now reduced to 12/6 each. Triumph standard type.

The "REY" Leather Belting outlasts two of any other makes. Price 2/- per foot.

—— SPECIAL DISCOUNTS TO TRADE. ——

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

REY

5, HEATH STREET, HAMPSTEAD.

TRUE VALUE.
SPRUNG LIKE A CAR.

FARRAR'S SIDECARS are sprung both fore and aft, **CLEAR OF THE FRAME,** on special springs which are **UPTURNED C** shape at both ends, a refinement found on no other make. **THEN AGAIN, Note** where the front arm grips the centre of the sidecar frame, and compare this with the lopsided attachment adopted by some makers.

No need to fit extra supports to these sidecars.

CARRIAGE PAID.

We now pay carriage on our sidecars to any address in the United Kingdom.

The following refinements are fitted to all models. No extra charge whatever:

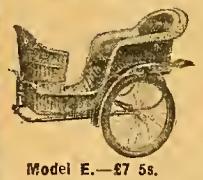
1. **Kick-up Stand** for jacking up sidecar wheel for tyre repairs.
2. Large sized **Cocoanut Mat** fitted to foot of sidecar.
3. **Special Sidecar Lamp** (plated), and fitted to show white light at front and red light to rear.
4. **Extra Rapid** Quick Detachable Joints.
5. **We pay carriage to any town in the United Kingdom.**



Model de Luxe.—£6 5s.



Model C.—£7.



Model E.—£7 5s.



Model D.—£8.

All complete with Michelin or Continental tyres. Customers have option of car or round pattern mudguards. Discount to the trade.

Any model can be supplied with tip-up basket without extra charge.



MOTOR CYCLE FRAMES

We have a quantity of frames by well-known maker,
Price 32/6 each.
Rigid forks, **7/6** extra. Druid forks, **45/-** extra.
Enamelled and plated in first-class style.

MISCELLANEOUS BARGAINS.

4½ h.p. Water-cooled Engine, vertical	£5 10
2 h.p. Simms Engine	25/-
New 4 h.p. N.S.U. Engine, perfect	£7 0
3½ h.p. Rex Engine, M.O.V.	£5 10
Mabon Clutch, fits twin Rex	55/-
Brooks B100 Saddle	9/6
Brooks B120 Saddle	9/6
Lycett's L109 Saddle (new)	11/6
Lycett's ditto, padded top (new)	14/6
Cocoa Fibre Sidecar Footmats	3/-
Ruthardt V Twin Magneto, 45° angle	£3 15
New Bosch D A V Twin Magneto, 48°	£4 4
Rex Pattern Belt Rim Brake (new)	6/6
Lycett's Carrier Toolbags (new)	7/6
1 h.p. Electric Motor, 230 volts	£7 0
Sidecar Lamps, show red light behind	7/8
Trailer, 26in. wheels	25/-
New Toolbags, 9×6×3½in.	4/6
Sidecar Aprons, green or red, with studs	7/6
New Lycett's Tubular Carriers	4/11
Longuemare Carburetters	5/-

FARRAR'S
MOTOR EXCHANGE,
19, 21, 23, 25, Hopwood Lane,
HALIFAX (Two minutes from G.P.O.)

Telephone 919.

MOTOR BICYCLES FOR SALE.

REX 6h.p. Twin, 4-speed, free engine, Bosch, Whittle belt, new Kempshalls, spare Rom, B. and B. carburetter, recently overhauled, exceedingly reliable, good sidecar machine; £20.—Dunwell, Wigan Lane, Wigan.

1911 3½h.p. Bradbury, unscratched, scarcely used, very powerful, head light and generator, horn, 3 belts, spare valve, all tools, tubes unpunctured; owner bought car; £35.—9,917, *The Motor Cycle* Offices, Coventry.

FOR Sale, H. D. Shaw's 7h.p. Indian, French grey, fastest machine in the North, £20 worth of spares, including ported racing cylinders, sprockets, tyres, etc.; price £55.—H. D. Shaw, Ashton House, Undercliffe, Bradford.

LIVERPOOL Agency for Triumph and Matchless Motors, Hitchings, Ltd., 74, Bold St., Liverpool, the pioneers of motor cycling in the North. It will pay you to deal with Hitchings, Ltd., an old-established firm of highest repute.

1911 Bargains.—Bradbury, shop-soiled, £39; 2¼h.p. 2-speed F.N., in splendid order, £32; 3½p.p. Premier, run 150 miles, £33; 14-guinea Millford castor cane sidecar, hardly used, £11/5.—The Brighouse Motor Agency, Bailiffe Bridge, Brighouse.

2½h.p. Kerry, low built, Hellesen dry battery ignition, Brown and Barlow h.b.c. carburetter, Brooks B100 saddle, Lyso rubber belt, accessories, etc., in first-class condition; £7/10, or part exchange, offers.—Henry Tate, 528, Manchester Rd., Hollinwood.

ENFIELD, 2¾h.p., 1911, 2-speed and free engine, £52/10, new August, fitted with Jones speedometer, P. and H. headlight, leather mudshield and watch, grand condition, a beauty; £38/10.—Box L6,188, *The Motor Cycle* Offices, 20, Tudor St., E.C.

BROWN and Barlow with spare jets, as new, 22/-; Calthorpe touring handle-bars, new, 6/-; 1911 Triumph valve, complete, 4/-; '08 Triumph cylinder, 5/-; 2½in. Continental cover, little used, 7/-, ditto 4/-—36, Crosby Green, West Derby, Liverpool.

ABSOLUTELY New 1912 4h.p. T.T. Peugeot Motor Cycle, Bosch, h.b.c., Amac, Dunlop tyres and belt, P. and H. lamp and generator, wide tank and fillers; cost £47/11, accept £36, or nearest cash offer; genuine bargain.—6, Whittam Av., Marton, Blackpool.

HITCHINGS, Ltd., for Triumph and Matchless Motors; any make supplied on most favourable terms; exchanges arranged; absolute satisfaction and courteous service assured by dealing with Hitchings Ltd., 74, Bold St., Liverpool. Established over 30 years

NEW Hudson, 2¾h.p., 3-speed, Dunlop 2½ triple studded, as new, Lucas lamp, etc. (£52). Underwood visible typewriter, with tabulator (£21/19/6); wanted, high grade 1911 sidecar combination; expert examination.—Headmaster, Oatlands Mount, Harrogate

1911 3½h.p. Touring Norton (79×100 engine), 5-70 m.p.n., well-known winner of speed trials, hill climbs, and reliability trials, broke world's record for flying kilo in May last, only done about 1,000 miles, magnificent condition; £36.—D. Bradbury, 3, Fulmer Rd., Sheffield.

B.S.A., Chater-Lea, Triumphs, J.A.P.'s, 1912 models; sidecars from 5 guineas; large stock of Michelin and Palmer tyres, accessories, accumulators, magnetos; accumulators recharged; petrol, Vacuum and Price's oils; sole agent for Lincoln Elks.—Pickles, Church St. Garage, Bradford.

IMMEDIATE Delivery Zeniths, Douglas (£41), Bradbury (£48), Matchless twin (54 guineas), and large quantity Millford sidecars with Windbrown bodies; delivery of Scott, James 3-speed, James 2-speed chain drive, next week; Clyno, 1912, run 370 miles, 60 guineas.—W. F. and Co., 5, Cheltenham Parade, Harrogate.

OFFERS wanted for 1911 models.—3½ and 6h.p. Zeniths, 1911 2-speed Douglases, 1911 Bradburys and Campions; every machine guaranteed as perfect as new, all having been thoroughly overhauled; having taken the above in part exchange for 1912 models, I am open to dispose of same at a sacrifice.—Haslam, 293, Ecclesall Rd., Sheffield. 'Phone: 3971.

HUMBER, 3½h.p., 1911, 2-speed, and Millford sidecar, in good order, just overhauled, and Roe gear clutches, Raybestos lined, done about 2,200 miles, very complete kit tools and spares, including box magneto spares, and 3 spare inner tubes, generator, P. and H. lamp, Jones speedometer, good horn, 2 carrier bags; £43; owner (engineer) going abroad.—Apply, Kerslake's Garage, West Derby, Liverpool.

NORTHERN Depot, Ltd., Everything Motorish, Leeds St., Liverpool.—Auto-Carriers, commercial, delivery fortnight; Sociable, stock; 3-seater, 3 weeks; Kerry-Abingdons, clutch model, stock, other models week; Matchless, fortnight; Zebra 2-seater car, fortnight; special stockists F.R.S. lamps, Avon tyres, Whall saddles, Lyso belts, speedometers; all advertised goods in stock; sole agents celebrated Belge motor suits; 14 oils stocked.

GREAT Sale of motor cycles.—3½h.p. Rex, £7/10; 4h.p. Chater-Lea, magneto, spring forks, B. and B., £12; 3h.p. Triumph, £9; 1909 Douglas, £18/10; 1911 Kerry-Abingdon, £28; 5-6h.p. Rex, 1909, twin-cyl., free engine, and sidecar, £25, worth £40; 1908 Triumph, new condition, £25; P. and M., nearly new, 2-speed, free engine, £37/10; we have about 60 second-hand motor bikes in stock, consisting of 1907, 1908, 1909, 1910 Triumphs, prices from £15; several Bradburys, Singers, Moto-Reves; all machines sold are warranted in good order; sidecars from 50/-.—The Motor Cycle Exchange, 160, Young St., Sheffield.

NEW HUDSONS!!

These beautiful three-speed machines are making the twin-cylinder brigade "sit up."

COME AND HAVE A TRIAL SPIN.

We are Sole Agents for Halifax and Huddersfield and districts.

NEW 1912 MACHINES IN STOCK.

3½ h.p. **RUDGE,** fixed gear	£48 0
3½ h.p. **HUMBER,** 2-speed model	£52 10
1912 3½ h.p. **BRADBURY,** single-speed	£48 0
1912 3½ h.p. **BRADBURY,** two speeds	£55 0
1912 3½ h.p. **NEW HUDSON,** three speeds	57 Gns
1912 2¾ h.p. **NEW HUDSON,** three speeds	47 Gns
1912 2½ h.p. **A.J.S.,** two speeds, chain drive	47 Gns

LIGHTWEIGHTS.

1¾ h.p. **WOLF,** A.J.S. engine, magneto	£15 0
2¾ h.p. **CASWELL** vertical, Bosch, Amac, h.b. control	£12 0
1910 2¾ h.p. **MOTO-REVE,** magneto, Druids	£22 0
1910 2¾ h.p. **MOTO-REVE,** extra fine order	£23 0
1909 2½ h.p. Twin **MOTO-REVE,** 50×70mm.	£20 0
1908 Twin **MOTO-REVE,** magneto Druids	£15 0

SINGLE-CYLINDER REXES.

1910 3½ h.p., fine goer	£27 0
1910 3½ h.p., extra good	£26 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3½ h.p. 1908 Featherweight Rex, Bosch mag	£17 0

TWIN-CYLINDER REXES

1909 5-6 h.p. de Luxe, two speeds, fine	£34 0
1906 5-6 h.p. Twin Rex, Mabon clutch	£16 10
5-6 h.p., Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, two speeds, M.O.V.	£48 0
5-6 h.p. de Luxe, 1908, two-speed model	£28 0
5-6 h.p. de Luxe, 1908, two speeds, special	£29 10
5-6 h.p. 1908 two-speed de Luxe, 1909 engine	£32 0

OTHER MAKES.

1911 Lady's **HOBART,** Armstrong 3-speed	£36 0
5-6 h.p. Four-cylinder **F.N.,** very good	£19 0
4½ h.p. **N.S.U.,** Bosch magneto, h.-b. control	£21 0
3½ h.p. **P. & M.,** late 1908, two speeds	£28 0
3¾ h.p. Twin **PREMIER,** fine machine	£25 0
3 h.p. **TRIUMPH,** M.O.V., h.-b. control	£17 0
5½ h.p. **N.S.U.,** and free engine	£25 0
1911 2½ h.p. **MOTOSACOCHE,** magneto	£27 0
1911 3½ h.p. **SINGER,** clutch model, done 200 miles	£43 0
3½ h.p. **L.M.C.,** 1910 model	£25 0
3 h.p. **SINGER,** Bosch, V belt drive, B. & B.	£16 0
3 h.p. **QUADRANT,** Bosch, B. & B., sp. forks	£16 0
3½ h.p. **MINERVA,** Bosch magneto, Amac	£22 0

SIDECAR COMBINATIONS.

5-6 h.p. Clutch Model **REX** and new sidecar	£29 0
5-6 h.p. Two-speed 1908 **REX** and sidecar	£33 0
7-9 h.p Two-speed **REX** and sidecar	£53 0

All fitted with Magneto and Spring Forks.

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3 h.p. **REX,** vertical engine	£9 0
3½ h.p. **BROWN Bicar,** M.O.V., 26in. wheels	£12 0

£4 DOWN SECURES ANY OF THESE. BALANCE 6/- WEEKLY.

5-6 h.p. Twin **REX,** splendid goer	£16 10
3 h.p. **QUADRANT,** h.b. control, Bosch mag.	£16 0
3 h.p. **SINGER,** Bosch magneto, h.b. control	£16 0
3 h.p. **TRIUMPH,** M.O.V., h.-b. control	£17 0
1908 **MOTO-REVE,** magneto, Druids	£15 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

1¾ h.p. **WOLF,** A.J.S. engine, magneto	£15 0
1910 2¾ h.p. Twin **MOTO-REVE**	£22 0
1909 2¾ h.p. Twin **MOTO-REVE**	£20 0

CARS AND TRICARS.

4½ h.p. **HUMBER** Tricar, two speeds, wheel steering	£19 0
5 h.p. **HUMBER** Car, two-seater, good goer	£22 0
5 h.p. **KEXETTE,** Oppermann, 3 speeds	£18 0
Duocar, Bosch magneto	£45 0

MISCELLANEOUS BARGAINS.

1912 B. and B. Carburetters, variable jets	28/6
Frame for inclined engine	7/6
Fulford Castor Wheel Sidecar	£5 0
Fulford Rigid Sidecar, 26in. wheel	£4 10
Montgomery Sidecar, 26in. wheel	£2 10
N.S.U. Sidecar, coach-built, 26in. wheel	£4 10

Farrar's Motor Exchange
19, 21, 23, 25, Hopwood Lane,
HALIFAX (Two minutes from G.P.O.)

Telephone 919.

In answering these advertisements it is desirable to mention "The Motor Cycle."

SCOTT'S.

DON'T BE TOO LATE FOR EASTER.

RUDGES

Two-speeds, Free Engine.

The engine starts with back wheel on the ground, and on test these Rudges give 8 h.p.

RUDGE, two speeds, free engine, and adjustable pulley £56 10

ALL MACHINES GUARANTEED AND ACTUALLY IN STOCK.

RUDGE, 1912 standard £48 15
RUDGE, 1912 standard £48 15
RUDGE, Multi-gear Model, delivered 1st March £60
RUDGE, Racing Model, 1911, all improvements, very speedy, first-class condition £40
RO AL ENFIELDS, any model .....
HUDSON, new, three-speeds £57
ZENITH-GRADUA, new £55 13
TRIUMPH, new, clutch model £51 10
REX, 1910, Binks carburetter £36
REX, 1909, spring forks, etc. £20
N.S.U., 4½ h.p., twin, 2-speed gear, Bosch magneto, very fast £24
N.S.U., 3½ h.p., 1908, magneto, h.b.c., good and sound throughout £21
HUMBER, 1909, 3½ h.p., two speeds, very powerful. £28
N.S.U., 3 h.p., magneto, all improvements .. £18
QUADRANT, 3½ h.p., take a sidecar, good condition £12
MOTOR-REVE, Twin cylinder, 3-speeds, like new £36
PREMIER 3½ h.p. 1911, not done 500 miles .. £36
REX DE LUXE, 1909, 5-6 h.p., 2-speed gear, variable pulley £32
REX DE LUXE, 5-6 h.p., Bosch, spring forks, two speeds, handle starting £28
ADVANCE, 6 h.p., magneto, h.b.c., twin cylinder powerful £17
PORTLAND, Pengeot engine, 3½ h.p., 1911 model, Bosch magneto, rubber non-skids, machine little and carefully used £32
MINERVA, 8 h.p., Roc 2-speed, handle starting, torpedo tank, grey finish, very elaborate and smart, complete with sidecar £47 10
CENTAUR, P. & M., two speeds, complete with sidecar, splendid running £25
HUMBER 3 h.p. h.b.c. B.B. carburetter, 26x2¼ non-skid tyres..... £11
LLOYDS, 2 h.p., smartly finished £3
DE DION, Phœnix 2-speed gear, low and racy £10
REX, 2 h.p., spray carburetter £7
HUMBER, 3 h.p., chain-driven, low built, 26 × 2½ studded tyres £9 10
PEUGEOT Car, 9 h.p., two-seater, three speeds and reverse £20

CASH or EXCHANGE TERMS TO SUIT YOUR POCKET. WRITE US.

S. & R. Sidecar, wicker basket, nicely upholstered £5 5
S. & R. with wheel supported at both sides £6 6
S. & R. with white cane basket £7 7
S. & R. with torpedo enclosed body £8 8
S. & R. with coach-built body £11 10



Footrests, post paid 2/10

MISCELLANEOUS.

Second-hand coach built £9 9s. Sidecar £5
Second-hand £8 8s. Coronet Sidecar £4
New Motor Head Lamps, with separate generators. Special line 9/6
Post Horns, Lucas pattern, very loud and musical 12/6
New Fuller Midget Coil 7/3
Long Handle-bars 4/9
Rubber-studded Genuine 26 × 2in. Avon Tyre 20/-

SCOTT'S,
Victoria Motor House,
POWELL STREET, HALIFAX.
Telephone—433 National.
Telegrams—"SCOTT, Powell Street, Halifax."

MOTOR BICYCLES FOR SALE.
SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

TRIUMPH 1911 T.T. Roadster, spares, condition as new; £40.—Fowke, Cranner St, Stafford.

N.S.U., 5-6h.p, Bosch, 650×65 back, 2½in. front, Dunlop belt (new); £20.—27, Kingsway, Northwich.

RUDGE 1912, free engine, ridden 150 miles; £51; bus. Rudge multi.—Sambrook, Wyrley, Walsall.

B.S.A., 1912 free engine model, unpacked; sacrifice £49/10.—J. Sidaway, The Cross, Old Hill, Staffs.

RUDGE, 5 months old, condition as new, Chanticleer whistle, and spares; £40.—Gilbert, Rocester, Staffs.

4 h.p. 2-speed Roc, in perfect condition, new 2½in. Dunlop, good sidecar machine; £25; handle starting.—W. E. Trott, Shrewsbury.

TRIUMPH, 1910, standard, splendid condition, tyres almost new, fast machine, complete; £30.—G. Styles, Elmore House, Bloxwich.

THORNEWILL Bros., Nantwich, Cheshire, have for sale a nearly new 3½h.p. 2-speed Humber, in perfect condition; £42, and others.

BRADBURY, 1911 standard, carefully used, splendid condition, spares, tools; £37.—Box 9,933, *The Motor Cycle* Offices, Coventry.

MOTOSACOCHE, 1911, 2½h.p., splendid condition, just overhauled, spring seat pillar, footrests; what offers.—Blenco, Garphwysfa, Conway.

TRIUMPH, 1909, 3½h.p., just overhauled at makers, new cylinder, piston, etc., fitted; £33, or near offer.—Evans, Lower Bar, Newport, Salop.

N.S.U., 1912, 5½h.p., 2-speed, run 150 miles, perfect; buying higher power for sidecar.—Particulars, Box 9 918. *The Motor Cycle* Offices, Coventry.

1910 Triumph, complete with P. and H. lamp, exhaust whistle, horn, and accessories, excellent condition; £35.—Griffiths, Garage, Llandilo.

1912 B.S.A., 2-speed model, also free engine B.S.A.; delivery during March; list and particulars.—Gorton, Motor Depot, Darlington St., Wolverhampton.

BRADBURY, just arrived, F.E. and 2-speed models, with all their superb improvements; order now, and don't delay.—Paskells and Keys, 250, Stafford St., Walsall.

ZENITH Gradua, 3½h.p., the motor cycle barred from many hill-climbs on account of superiority.—Paskell and Keys, Motor Depot, 250, Stafford St., Walsall.

ZENITH Gradua, 6h.p. twin-cyl., 1911, like new, arrived Nov. last, the best motor known for heavy sidecar work; secure this at once.—Paskell and Keys Motor Depot, 250, Stafford St., Walsall.

CLYNO Motors.—Sole agents for the hill-climbing Clyno; secure one of these lovely motors at once, and have the laugh of those who have waited.—Paskell and Keys Motor Depot, 250 Stafford St., Walsall.

3½h.p. Rex, B. and B., h.b.c., variable pulley, Whittle, 32 Rom tyre, and nearly new sidecar, in grand condition; any trial here; £20.—Braeside Lodge, Colwyn Bay.

HUMBER, 1911, 3½h.p., 2-speed, free engine, enamelling, plating in excellent condition, tyres Dunlop studded, as new; accept £36/10.—Andrews, Heage Rd., Ripley, Derby.

2h.p. Mitchell Motor Cycle, grand going order, low built, overhauled, £4/10; Bowden belt rim brake, new, 8/6; Liberty coupler 10/6.—W. Jones, 64, Rhosddu Rd., Wrexham.

TRIUMPH, 1911 new July, Jones speed indicator, not done 4,000 miles, first-class order, lamp, and spares, tube and valve, etc.; owner going abroad.—P. Barnett, Cheshire.

IN Stock.—1911 brand new Clutch Triumph, offers; 1912 Clutch Triumph, B.S.A. Clutch Model, Rudge Free Engine, B.S.A. 2-speed, Bradbury 2-speed.—Jones, Bryn Salem, Llanfairpwll.

1912 Clutch Triumph, due March; also 5h.p. A.J.S., 1911 Scott, November, 250 miles, speedometer, F.R.S., with new Canoelet sidecar.—Nelson, Gloddaeth St., Llandudno.

N.S.U. 1910 3½h.p. Model de Luxe, 2-speed and free engine, excellent condition, very little running, tyres as new, spares; first cheque £30, or nearest offer secures.—A. Elliott, 10, Manors St., Hanley.

EXCELSIOR, 4½h.p., new July, 1911, free engine (Villiers), Bosch, B. and B., h.b.c., done about 1,500 with and without sidecar; expert examination invited; cost 50 guineas, accept £37.—Jones, dentist, Crewe.

TRIUMPH, Enfield, New Hudson, 1912 models in stock; Zenith, Singer, Humber in few weeks; also following second-hands—1911 Rudge, new September, £38; Rex twin, 1911, free engine, 5-6h.p., 800 miles only and new sidecar, £44; T.T. Triumph, 1911, Cowey, lamp, etc., little used, £40; 1911 A.J.S., £20; Rex, 3½h.p., magneto, £15; Quadrant, 4h.p., sidecar machine, £17; also six second-hand Triumphs.—Oswald Parker, Melbourne, Derby.

Collier's Motories,

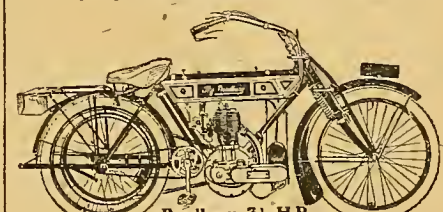
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1912 BRADBURYS IN STOCK.

IDEAL SIDECAR MACHINES.

3½ h.p. Tourist Models £48
3½ h.p. 2-speed BRADBURY £55



Bradbury 3½ H.P

Exchanges Quoted. Distance no objection.

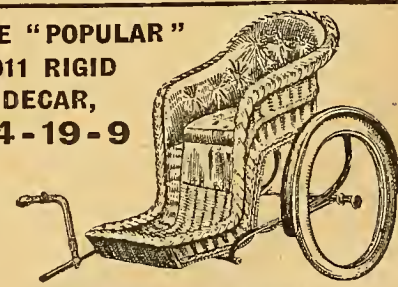
SECOND-HAND MACHINES.

CASH, EXCHANGE, OR EASY PAYMENTS.

1911 3 h.p. **FAFNIR,** b.b. control £22 10
1911 Twin Two-speed **REX DE LUXE** £47 10
5 h.p. Two-speed free engine **ROC** £35 0
1910 7 h.p. Twin **REX,** M.O.V. £37 10
3½ h.p. **FAFNIR,** Bosch, h.b.c., Indian red, Dmds £19 10
Magneto **TRIUMPH,** spring forks, very smart .. £21 10
Magneto Twin **REX** £19 19
REX, 1910, 3½ h.p., 26 × 2½ tyres, Cantilever seat £27 10
4½ h.p. four-cylinder **F.N.,** magneto £19 19
2½ h.p. **KERRY,** runs well, spring forks £10 10
1910 3½ h.p. T.T. **REX,** very fast £27 10
3½ h.p. **TRIUMPH,** 1908, very good £28 10
2½ h.p. **DE DION,** spray carburetter £10 10
3½ h.p. 2-speed **N.S.U.,** h.b. control £21 0
3 h.p. **HUMBER,** chain drive £7 10
1909 3½ h.p. **REX DE LUXE,** two speeds £32 10
1908 3½ h.p. Magneto **REX,** spring forks £22 10
1907 3½ h.p. Magneto **REX,** spring forks £19 19
3½ h.p. Tourist **REX,** brand new £29 10
1910 Twin **REX DE LUXE,** two speeds £42 10
New Twin **REX,** Cantilever seat ..... £35 Gns
Twin **REX DE LUXE** and sidecar £27 10
3½ h.p. Magneto **REX,** new and unused £31 0
3½ h.p. Magneto **EXCELSIOR,** h.b. control £16 10
MOTO-REVE, magneto, Druids £19 19
MOTOSACOCHE Lightweight £14 10
F.N. Lightweight, magneto, spring forks £19 19
REX, 3½ h.p., spring forks £15 10
1911 3½ h.p. Tourist **REX** £32 10
1911 Single-cylinder Two-speed **REX,** 300 miles .. £42 10
5½ h.p. Twin **REX,** spring forks £16 10
5½ h.p. Magneto Twin **REX** £19 19
2½ h.p. **F.N.,** h.b. control, very smart £12 10

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Backed by 10 years' experience.
Every car guaranteed 2 months.

"Popular," Clipper or Continental tyre £4 19 9
"Surperbe" type, with best tyre, apron, etc. .. £6 6 0
Ditto, with reversible child's seat £7 0 0
Ditto, with best coach-built body £7 12 6

Improved Quick Detachable Joints, Cranked Extra Strong Back Axle and Spindle to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

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50 Brand New Machines at nearly second-hand prices to cash buyers. Come at once and get first choice. New 2-speeders, with accessories, from **40 guineas.**

MOTOR BICYCLES FOR SALE.
SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

TRIUMPH, 2½h.p. J.A.P. engine, good order; special bargain, £7.—Plastow, Grimsby.

TRIUMPH, 1910, F.E., speedometer, lamp, generator horn, back rest, new condition; £42/10.—Plastow Grimsby.

HUMBER, 1911, 2-speed, brand new heavy Kempshall tyres; £35.—Plastow, Grimsby.

DOUGLAS, 1911 model E., 2-speed, free engine handle starting, ridden 2,000 miles; £37/10.—Plastow, Grimsby.

DOUGLAS, 1910 Model D., absolutely perfect; £27—Plastow, Grimsby.

REX, 1910, 5-6h.p., splendid condition, very speedy; £33.—H. Collett, 4, Lord St., Coventry.

TRIUMPH, 3½h.p., free engine, 1910, condition like new; £35.—Martin, 18, Hertford St., Coventry.

ENFIELD, late 1911, Dunlops, Brooks; cost £45 perfect order; inspection.—37, Market Place, Boston.

1911 3½h.p. Rex Motor Cycle, like new; £34, or offers.—Adams 94, Alcombe Rd., Northampton.

TRIUMPH, 1910, July, free engine, excellent condition; £40.—T. Hutton, 176, Bristol Rd., Birmingham.

2¾h.p. Minerva, recently overhauled, re-wired, etc., tyres like new; £8/10.—28, Burton St., Nottingham.

1912 Triumphs in stock, Douglas, B.S.A., Bradbury, Rudge, Zenith; offers.—Clifford, Eastwood, Notts Exchanges.

LEICESTER.—Zenith, 3½h.p., 1911, shop soiled, delivered December; £49 secures.—Colmore Depot 62, High St.

LEICESTER.—Zeniths, 6h.p. and 3½h.p., 1912 models in stock.—Colmore Depot.

LEICESTER.—Matchless, 1912, 3½, 6, and 8h.p., actually in stock, order now and avoid disappointment.—Colmore Depot, 62, High St.

LEICESTER.—Clyno, 1912, 6h.p., 2-speed; we have three of these famous mounts ready for immediate delivery.

LEICESTER.—New Hudson, 1912, 3½h.p., 3-speed, delivery from stock.—Colmore Depot, 62, High St.

LEICESTER.—Douglas, 1912, all models in stock.—Colmore Depot.

LEICESTER.—Enfield, 1910, 2¾h.p., brand new; £25 first cheque secures.—Colmore Depot, 62, High St

LEICESTER.—Bradbury, 1911, 3½h.p., 2-speed, brand new; £50.—Colmore Depot.

LEICESTER.—Bradbury, 1911, 3½h.p., standard model second-hand, only run 900 miles, perfect condition; £38.

LEICESTER.—Triumph 1911 T.T. Roadster, 2 pairs of handle-bars, grand condition; £38/10.—Colmore Depot, 62, High St.

BIRMINGHAM, Colmore Depot.—1912 Enfield, 2 speed and free engine; in stock; immediate delivery.

BIRMINGHAM, Colmore Depot.—1912 Premier, 3½ h.p., Armstrong 3-speed; in stock; first cheque secures.

BIRMINGHAM.—Macbeth-Precision, 1912, free engine model and standard, from stock.—Colmore Depot.

BIRMINGHAM.—Matchless 1912 models in stock.

BIRMINGHAM.—Matchless, 1911, the last of December deliveries, 8h.p., brand new, full guarantee; to clear at £65.—Colmore Depot, 31, Colmore Row.

BIRMINGHAM.—Douglas, 1912, early deliveries any model; Model G in stock.—Colmore Depot.

BIRMINGHAM.—Douglas, 1911, 2-speed, good order, trial; £38.—Colmore Depot.

BIRMINGHAM.—N.S.U., 1910, 2-speed, 8h.p., fine sidecar combination, climb anything; £32.—Colmore Depot.

BIRMINGHAM.—Enfield, 1910, 2¾h.p., 3-speed, good order; £25.—Colmore Depot, 31, Colmore Row.

1911 Humber Lightweight, 2¾h.p., very little ridden; accept £25.—Kerby, 14, Little Park St., Coventry.

B.S.A., 1911, standard, little used, guaranteed as new, unused since September; £40.—Sharman, Brackley.

4h.p. Clyde, Jap, Mabon clutch, winner of reliability trials, excellent condition; £25.—Wait and Co., Ltd., Leicester.

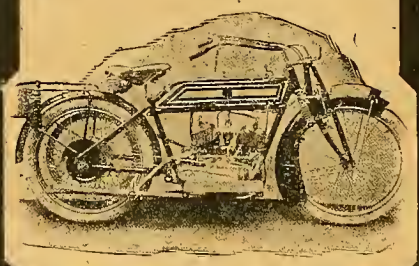
1912 Bradbury, Rudge, B.S.A., Alldays, New Hudson, 2¾h.p. and 3½h.p. 3-speeds in stock.—Blackburn, Spalding.

1911 2¾h.p. Motosacoche, not run 1,600 miles, free engine, Whittle belt, adjustable pulley, as new in every respect; £27/10.—55, Summerfield Crescent, Birmingham.

"Built to an ideal— not to a price."

The 1912

REX-J.A.P.



Represents the highest standard in Motor Cycle construction.

LOOK THE FIELD OVER—Go carefully into the specifications of other Motor Cycles; compare every detail; note the construction, engine, tyres, springing, control, style, finish, and refinements; examine EVERYTHING; don't miss a single point; when you have done this there can be but one conclusion, viz.: that the

1912 REX-J.A.P.

is the undisputed PEER of them all; the climax of engineering skill coupled with the highest attainments of the designer, with all the weaknesses and imperfections so noticeable in the COMMON PLACE eliminated. : : : : : : : : :

"BUILT TO LAST," the REX-J.A.P. is THE machine for Sidecar work, and can be relied upon to give good service under any conditions.

Catalogue free upon request.

AGENTS:—We are fast allotting districts—write for terms.

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Telegrams: "Primus, Birmingham." Telephone: Central 4310.

MOTOR BICYCLES FOR SALE.

1911½ Humber, 2-speed, in good condition, fine sidecar machine; £35/10.—Hyde's, John Bright St., Birmingham.

PREMIER, 1911, nearly new, 3½h.p., only done about 1,000 miles; dirt cheap at £35; deferred payment if you like.—Hyde's, John Bright St., Birmingham.

1910 Premier, Millennium 2-speed gear, 3½h.p., good for sidecar work.—Hyde's, John Bright St., Birmingham,

TRIUMPH, 1910 with 1911 improvements, tyres and everything perfect; bargain at £32.—Hyde's, John Bright Street, Birmingham.

6h.p. Twin Stevens, just the bike for sidecar; call or write for details; £27/10.—Hyde's, John Bright St., Birmingham.

1912 Triumph and New Hudson, 3-speed, clutch, and standard, in stock.—Mason, Triumph agent, Wellingborough.

TRIUMPH, 2¾h.p., splendid condition, tyres perfect, new belt; bargain, £10/10, nearest offer.—Sharpe, Careby, Stamford.

TRIUMPH, 1908 model, splendid condition, speedometer, lamp, exhaust whistle, etc.; £28.—Baines Bros., Gainsborough.

HUMBER, 1911, 3½h.p., 2-speed, and sidecar, not run 500 miles; £45, or nearest offer.—49, Arkwright St., Nottingham.

ROVER, 1911 Triumph clutch, Lucas, everything as new; cost £57 last June; £35.—70, Poplar Rd., Edgbaston, Birmingham.

BRADBURY, 3½h.p., 1911 model, specially tuned up, exchanged for twin; £38, or near offer.—Wait and Co., Ltd., Leicester.

CLYDE, 4h.p., J.A.P., Mabon clutch, Bosch magneto, Amac carburetter, recently overhauled; £27/10.—Wait and Co., Ltd., Leicester.

CLYDE, 4h.p. J.A.P., B. and B. carburetter, Bosch magneto, adjustable pulley exceptional condition; £30.—Wait and Co., Ltd., Leicester.

CLYDE, 4h.p. J.A.P., Mabon clutch, B. and B. carburetter, Bosch magneto, winner reliability trial; £25.—Wait and Co., Ltd., Leicester.

QUADRANT, 3½h.p., 1912, brand new, £52/10 model; taken in exchange for car, sell £44.—Brown, 12, Bull Ring, Birmingham.

REX de Luxe, 1911 model, 6h.p., twin-cyl., Bosch, free engine, 2 speeds, aluminium footboards, condition as new; £40.—Brown, 12, Bull Ring, Birmingham.

INDIAN, 1910 model, 5-6h.p., twin-cyl., Bosch, spring forks, fast and reliable; sacrifice £32.—Brown, 12, Bull Ring, Birmingham.

J.A.P. 4h.p. Motor Cycle, 1911½, Bosch, Palmers, excellent condition, powerful; £31; photo.—Curry, 27, Lorne Rd., Leicester.

BARGAIN.—1911 new 2h.p. Singer motor cycle; makers' price £35, will take £27/10 for quick sale.—Beck, Chapel St., Rugby.

1910½ Standard Bradbury, splendid condition throughout; price £32.—Particulars, apply, Larrington, saddler, Moulton, Spalding.

1911 2¾h.p. Singer, in excellent condition throughout; £25; owner buying sidecar machine.—Oliver, 54, Gillott Rd., Birmingham.

MINERVA, 3½h.p., magneto, Whittle belt, tyres and tubes new, perfect order; £12/10; going abroad.—Fred Hodson, Wainfleet, Lincolnshire.

1911 Twin Rex de Luxe, 5-6h.p., free engine, 2 speeds brand new, just delivered; £46.—Box No. 9,851, *The Motor Cycle* Offices, Coventry.

LATE 1911 3½h.p. Zenith-Gradua, as new; expert examination solicited; £45, or best offer.—Edenmuret, 11, Priory Terrace, Leamington Spa.

1911 Ariel, 3½h.p., variable gear, decompressor, new condition, lamp, horn, spares; £36; £51/5 model.—Willis, 333, Foleshill Rd., Coventry.

DOUGLAS, Motosacoche, Singer, and Calcott lightweights; book now to secure prompt delivery.—Midland Cycle Depot, Hales St., Coventry.

3½h.p. Premier, 1911, with Millennium 2-speed gear, new Rom rear tyre; cash offers invited.—Box No. 9,785, *The Motor Cycle* Offices, Coventry.

BROWN, 3½h.p., 1908, low mileage, magneto, h.b.c., Palmer and Rom. Lyso belt, runs like a clock; £18.—Kirman, 21, Cleethorpe Rd., Grimsby.

ALLDAYS, 3½h.p., 1911½, Roc 2-speed, splendid sidecar machine, everything perfect; £35.—Write for particulars, Tay, Bunbury Rd., King's Norton.

1911 Twin Rex de Luxe, 5-6h.p., free engine, 2 speeds, brand new, just delivered; £46 cash.—Box No. 9,634 *The Motor Cycle* Offices, Coventry.

1911 3½h.p. Bradbury, N.S.U. 2-speed, Whittle belt, complete in every detail, ideal sidecar machine; £37/10.—41, Spring Rd., Edgbaston, Birmingham.

2¾h.p. Genuine De Dion, Hellesen, Brown and Barlow, tyres condition splendid perfect running order; 9 guineas.—Underwood, Radmoor Rd., Loughborough.

TRIUMPHS, free engine models, B.S.A. 2-speed and free engine models in stock; no waiting.—Motor Depot, 49, High St., Black Heath, near Birmingham.

THE MOTOR CYCLE

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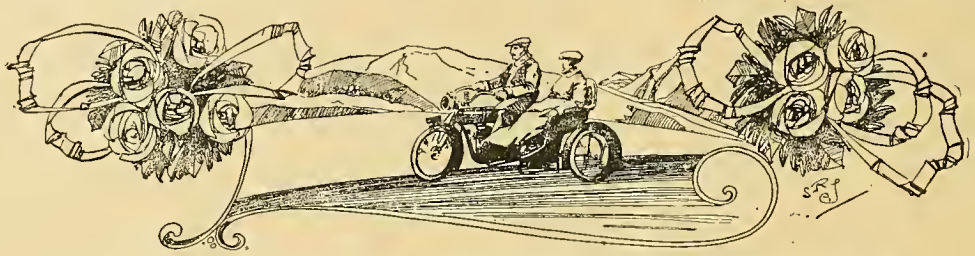
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The Open Road.

THE open road! What vistas does it not call forth? Free to tour from one end of the land to the other, untrammelled by trains, and the consequent servility to timetable and confinement in stuffy carriages! The glorious pastime of motor cycling, never dead throughout the year, is about to gain a new lease of life from the improvement in roads and weather. The old enthusiast has obtained delivery of his new mount and is eager to test its capabilities o'er hill and dale, while the tyro is on the verge of tasting the joys of a nomad. Both are free to wander where they list, nothing daunts them; no acclivity on a main road is too steep for the modern motor cycle to ascend; no declivity too precipitous for it to descend, depending on its powerful brakes and the retarding influence of the engine. In fair weather or foul a motor cycle can be ridden practically anywhere, and so the open road is free to all to go where they like, stay as long as there is leisure or the will to admire some pretty view, to inspect some ivy-mantled ruin or other object of interest that meets the traveller's eye. If a stretch of country with which familiarity has dulled his sense of interest intervene between the rider's residence and the object of his goal, no hard labour of limb is entailed in swift passage on to pastures fresh and scenery untried; districts hitherto unexplored are easily attained, and then, having tasted the joys of speed for fifty miles or so, the throttle may be partially closed, and, with engine just turning over, the new country may be carefully examined. The holiday at an end, there is no vague wondering whether physical fitness will allow a pleasurable return home, for the engine does the work, and head winds are of little avail to stay the power of the present day motor cycle. The sea coast is within the reach of the most Midland of Midland dwellers, even though he have only a couple of days in which to accomplish the journey there and back. For some years past the pastime happily has lost its selfish aspect. Time was when it was regarded as a somewhat lonely sport to ride a motor bicycle, mile after mile, without a companion. Now, with the aid of a passenger attachment, pleasure may be shared with others. Nothing exceeds the delights experienced by those who, having themselves enjoyed the beauties of their country, are with the aid of a motor cycle enabled to take a friend to participate in their pleasure. Old scenes may be visited with a keenness enhanced by the interest of a companion to whom they are all fresh, and there is the same, or even greater, pleasure in pointing to all the beauty spots so often visited before, as if it were the first occasion of their discovery.

Such are the delights of the open road, but to those who are about to commence the pastime of motor cycling this year it may be opportune to give warning of its dangers, in no wise terrible for those who are willing to exercise reasonable care, but sufficiently fraught with risk to warrant the practice of a certain degree of caution. The open road is just as free as of yore, but the speeds attained by modern traffic necessitate wisdom in entering main thoroughfares from by-lanes and roads. Never cross a main artery without sounding the horn loudly, nor at a faster speed than will allow an almost instantaneous stop and dismount, should other swiftly moving vehicles be passing that way. Be certain both brakes are in order, and never descend an unknown hill at a fast speed without having a clear view of the road for at least a quarter-

mile ahead. When ascending hills never take a corner at speed unless you are sure the road beyond is unimpeded, and never cut in on the wrong side at a corner. However difficult the hill may be, far better is it to ride slowly; rather fail and make another attempt than risk a collision at a bad corner. When passing or overtaking horses drive as quietly as possible, and under no circumstances leave the cut-out open when riding through villages and towns. In overtaking any other form of traffic give as much warning of approach as possible, and do not cut in immediately after passing; when passing allow as much room as convenient, and do not shave other users of the road. However certain one may be of a capability to steer to an inch, others are not always so adept, and nothing unnerves a fellow cyclist or motorist more than to ride too close. In strange country look out for speed limits, for these have increased of late and the signs indicating their whereabouts are often obscurely placed.



THE AUTO CYCLE UNION SILENCER TRIALS.

THE arrangements for the silencer trial to be organised by the A.C.U., the date of which will be announced shortly, are practically complete. The silencers will be tested on a 500 c.c. water-cooled engine to which will be attached a fan brake. The engine will be run at from 750 to 1,000 r.p.m., and will be placed against a wall with the silencer outside. On this engine various types of silencers will be fitted and tested. Complete machines may also be entered. What constitutes the desired degree of silence will be arrived at before the date of the competition by fitting to a motor bicycle a silencer consisting of two cylinders sliding one inside the other. They will be adjusted until the whole committee agrees that the exhaust is reasonably quiet, and then the capacity of this experimental silencer will be communicated to the entrants to serve as a guide. Naturally, this exhaust box may not be of normal size, but this will not matter, as it is merely intended to reduce the noise of the exhaust to a point which is not objectionable to the ear. The Manufacturers' Union will be asked to co-operate with the A.C.U. in organising this trial, as the Local Government Board, as is generally known, are shortly to issue regulations regarding unduly noisy motor bicycles. Further details will be announced at a later date.

THE TOURIST TROPHY RACES.

IT is left to private riders to decide whether they will do their best to organise an amateur race for 1912, and agitate for the resurrection of the T.T. Race on the old lines in 1913. Two things are obvious. The first is that the T.T. Race is a great nuisance to the trade. It comes at the busiest season of the year, it costs every competing firm vast sums of money, and only two or three of them reap any real kudos. The second is that we private owners foot the T.T. bill; if a manufacturing firm spends £1,000 on the race, as one firm is alleged to have done last year, that money is distributed over the touring machines sold by that firm, in the form of advertising charges. Purchasers and vendors have to consider whether a genuine return is received for the large outlay.

I cannot endorse the ostensible reason put forward by the trade for the suspension or abolition of the T.T., namely, that it is of no real service in developing the tourist mount. We owe a great debt to the T.T. It has given us engines which can climb gradients fast, it has given us engine flexibility, it has given us durable engines with lots of stamina, and it has greatly accentuated the factor of reliability in every detail of the modern machine. Last year it added the special service of demonstrating the variable gear.

Brooklands can certainly take its place in respect of some of the above items; but a race on Brooklands can never adequately test engine flexibility or variable gears. No sane man wants a flexible engine for track work; no sane man would dream of using a variable gear in track work, except to snatch a few seconds vantage at the start of a short sprint event. But increased engine flexibility and increased demonstration of variable gears are two of our crying needs just now; and therefore the abolition of road-racing would be to this degree a calamity.

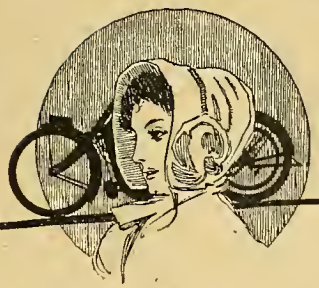
I must say I take a most pessimistic view of the Six Days' Trial, as at present conducted; it does not supply so exhaustive a test as the T.T., and its regulations bristle with loopholes which enable a clever rider utterly to falsify the comparison of leading makes with which it is intended to supply the general public. If a bad machine enters for the T.T., it is inevitably and ruthlessly shown up; if a bad machine enters the Six Days, it may emerge with shining credit.

New Machines Gain Much Kudos.

Industrially, another great value of the T.T. is the high relief into which it throws a new machine of high quality. I suppose hundreds of men will ride 2¾ h.p. three-speeded Humbers in 1912, for instance. How many would have sold but for the Junior T.T.? And in days when the market is bewilderingly flooded with a myriad makes, many of them "dark horses," the buying public need such honest pointers as the T.T. provides.

B. H. DAVIES.

THE MOTOR CYCLE FROM A LADY'S POINT OF VIEW.



ONE does not require the genius of Sherlock Holmes to perceive that the motor cycle is daily becoming more and more popular with the weaker sex, and rightly so, for now that makers have realised that the lady motor cyclist is worthy of consideration, they have produced many excellent machines of all weights with open frames suitable for ladies' use. A list of these will be found in "The Buyers' Guide" published in *The Motor Cycle* of November 16th and 23rd last. The weights of these machines vary from 105 lbs. to 200 lbs. For novices the lighter machines are most certainly to be recommended, partly because they are more easily handled when the rider is dismounted, but many experienced riders prefer the heavier patterns. Some ladies even reject the machines specially designed for their use, and make their choice from the bicycles built for men.

Open Frames or Not.

This practice, however, can be condemned for two very good reasons: (1.) The difficulty of satisfactorily and gracefully disposing of the skirt—few ladies care to wear a costume which can be considered suitable for the purpose, as, although it may be inconspicuous when riding, it will invariably attract unpleasant notice when off the machine. (2.) The impossibility of mounting and dismounting really quickly; in the case of mounting this is a minor consideration, but there are sometimes occasions when one's safety may depend upon the ability to dismount quickly. On the other hand, with the open frame no fantastic garb is required. The skirt, a rough tweed for preference, should be fairly short. A Gabardine or waterproof coat should be worn, according to weather conditions, and a leather or wool waistcoat with long sleeves adds much to the rider's comfort on cold days. The hat should be small and fit closely.



Miss Mina Spiers, of Dunedin, New Zealand, who is a keen rider of a 2½ h.p. two-speed A.J.S. Miss Spiers is the first lady motor cyclist in Southern New Zealand.

Competitions.

Another open question is whether reliability trials and hill-climbs are really desirable from a lady's point of view. There is not much, perhaps, to be said against the former, though the majority of lady riders prefer to use their machines only for rides and tours with their own friends. Some ladies, however, enjoy entering competitions, preparing their mounts for the event, the excitement on the day, the chance of a winning place—all these things appeal to their sporting instincts, and it must be granted that they often perform particularly well.

Motor cycling is undoubtedly a fine sport for both summer and winter. What is more invigorating than a run on a bright frosty day? Answer: Two runs. Practically the whole day can be spent on the road in summer without undue fatigue.

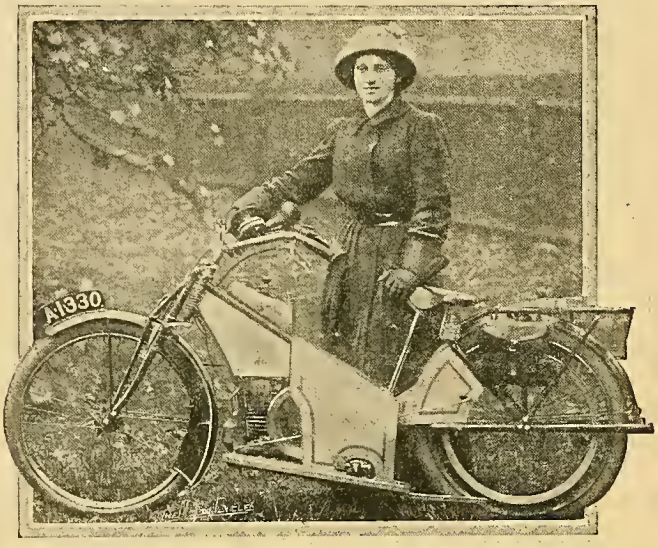
Can Ladies Attend to their Mounts?

It has often been said that ladies have no mechanical turn of mind, and so motor cycling would not appeal to them. The following will show that they are not so helpless as they are supposed to be. Two ladies had been using a sidecar continually in rain and mud, so one can judge the condition of their mount after such weather. It was decided that for the New Year it should be completely overhauled, and that they themselves should do it.

The machine in question is a 3½ h.p. (two-speed Roc) Brough (ladies' model) and sidecar. The first thing was to rid the machine of superfluous mud, which had found its way into every possible nook. Next it was thought necessary to adjust the gear, so it was decided that the back wheel should come out and be thoroughly cleaned before any adjustments were carried out. This completed, both front and sidecar wheels were cleaned and the hubs lubricated; also the spring forks were in need of oil.

Now the most important part, the engine. First the plug was taken out and the points cleaned and put close together for easier starting. Next the valves were ground in and new valve springs fitted; then the carburetter was taken off, the jet cleaned, and the shutters and springs of the B. and B. control oiled.

The Motor Cycle from a Lady's Point of View.—



Miss Rose Hammett, one of the most successful and experienced lady motor cyclists. Her mount is a Douglas. During 1911 Miss Hammett registered over half-a-dozen successes in competition.

Replacing the back wheel proved to be the worst part of the whole business. However it was managed; then, after careful adjustment, both gears worked perfectly, and the brake acted as it had never done before. Finally a run on the stand completed the preparations for further enjoyable trips.

Points in Design.

Ladies' machines have not yet reached the same degree of perfection as those of the opposite sex, the open frame and the necessary protection for the dress, simplicity, cleanliness, etc., being in a large way accountable for this.

Manufacturers are now alive to the fact that there are many ladies who would rather drive and look after their own mounts than sit snugly in a sidecar, watching the sometimes futile efforts of a companion to coax an underpowered combination uphill.

To my mind, the three chief factors which seem necessary for the making of the ideal machine for a lady's use are:

1. Very low saddle position.
2. Simplicity of control.
3. Lightness with plenty of power.

It ought to be possible to put the foot flat on the ground and yet be seated comfortably in the saddle—a position in which it would not be difficult both to steady the machine and push off while letting in the clutch.

A short time ago I noticed a young lady struggling with a machine turned out from the factory as a lady's motor cycle. She could only just reach the ground with the toe of her shoe, and thus could not properly support the weight of the machine. The control of the clutch was on the handle-bar, and the lever actuating this dropped so far down that it was well nigh impossible for the small hand to grasp both and pull them together to declutch. She, however, succeeded in performing this feat. Then came the grand final, viz., pushing the machine along while gradually letting in the clutch, and at the same time controlling the engine to take up the load by means of the other two levers on the opposite side of the bar. Needless to say, when the clutch lever was let down as far as the dainty fingers could reach, it was loosed, with the result that the already hot engine, after one or two plucky attempts to keep going, accompanied by terrible knocks, stopped.

Supply and Demand.

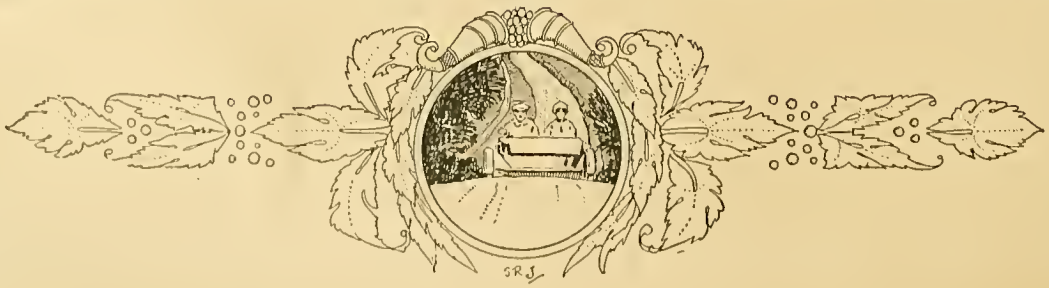
This proceeding was repeated twice before the usual inquisitive crowd, and then the lady's efforts were successful, and she sailed away, the poor little engine still knocking. This incident makes it evident that there are many extra little details to consider when designing a lady's motor cycle.



Miss Downie, of Edinburgh, who is a devotee of the motor cycle, her mount being an open frame 2¼ h.p. twin Forward.

When you read of, and meet on the road, ladies riding men's machines, it seems very much as if the demand for ladies' machines exceeds the supply, or is it that a man's motor cycle is so much more reliable?

DIANA.



Occasional Comments by "Ixion"



Experimental Work in Variable Gears.

Fortunately, the evolution of variable gears is by no means standing still. Behind the scenes the leading inventors and engineers are working in frenzied but conscientious fashion at gears far surpassing the best now available. Several three-speed and variable devices have reduced a two-speed gear to the position of a temporary compromise. The need for a small engine pulley on three-speed machines on which the central ratio is direct has shown another loophole for progress. I should not be in the least surprised if within the near future we are offered a three or four-speed counter-shaft gear (possibly even "infinite"), with the T.T. type of two-nut detachable rear wheel, a belt drive that will last 5,000 miles comfortably, no small pulleys, light weight, and a high reliability factor. It looks as if we two-speed faddists have been asking for too little through the long, weary, hopeless years of our past campaign.

Alleged Vibration with Chain Drive.

In our issue of March 7th "A.M.I.C.E." (p. 239) made what struck me as a distinctly rash induction. Comparing two machines, one of which was belt-driven, the other chain-driven through a clutch, he noticed that a long ride on the chain driver proved more fatiguing, and he attributed the extra fatigue to "the unrealised tremor or vibration, caused by the chain links striking the (sprocket) teeth, affecting super-sensitive nerves." This is rather a large generalisation to draw from a single comparative test; the comparative test of two machines is a very complex matter, embracing hundreds of factors; for instance, the engine on a chain-driven machine is usually much more substantially built than on a belt-driven machine; saddle and handle-bar position enter into the question; spring forks and their efficiency are most vital, etc. As my readers know, I am habitually a long distance man: I do not consider I have had a ride unless my speedometer trip dial shows an access of 200 miles or so; and though I am not at present a chain drive enthusiast, I hold no brief for the belt as a final and ideal transmission—in fact, owing to many of its disadvantages I dislike it, but regard it as temporarily a good compromise.

I cannot endorse "A.M.I.C.E." in his generalisation. Sundry long distance rides stand out clearly in my memory as having fatigued me excessively, and the majority of them were accomplished on belt-driven machines. So far as I can identify the main cause of the fatigue, it has invariably been due to some factor quite apart from the transmission regarded as a producer of vibration, or the reverse. In one case it was a peck of punctures; in another, a broiling sun; in another, the strain on wrists induced by constant correction of side-slip; in another, extreme cold; in another the strain of undue speed; in another, anxiety about hill-climbing; and so on.

Comparing these glorious no-trouble cross-country runs from one end of England to the other, which stand out so happily in a veteran rider's memory, I can recall no variations of fatigue due to the type of transmission employed. On such occasions I have finished quite as freshly on a single-cylinder chain-driver as on a twin-cylinder belt-driver; and I think most riders of equal experience would confirm this view.

One must admit that a few years ago the dampers fitted to chain transmissions in the way of spring washers and clutches were not remarkably efficient, and a single-cylinder chain-driver, climbing a hill barely within its compass, used to thump a bit, but this thumping would only be physically deleterious to a very sensitive rider, and would only be perceptible for brief patches of the ride; nor even then could it affect the user so seriously as a bad riding position, or a rigid or bouncy fork.

Nowadays, if you close your eyes, the senses can barely detect whether the drive is by chain or belt, so admirably is the snatch of the chain damped by cushioning devices inserted in the drive.

The Angle of Radiating Fins.

I am inclined to fancy we are likely to become a little too superficial and cocksure on the question of the correct angles for radiating fins. It is very dubious whether the same angle can suit engines placed vertically and tilted either forwards or backwards, or, again, whether one angle can be best for singles and twins. There must be an extraordinary medley of cross currents, when we allow for rebounds both from the cylinder walls and the upper and lower surfaces of fins, for altered angle of impact due to head draughts, side winds, and following winds, and the general disposal of currents on the rear cylinder of a twin must especially be enormously complicated.

If we were likely to confine ourselves to air cooling for ever, it would pay some expert in wind currents to make prolonged and exact tests under all conditions for the benefit of the industry. At present the situation is as follows: At the start of the motor cycle era a few makers adopted a certain design because it was easy to manufacture and neat in aspect; and as it worked fairly well, the main bulk of designers have followed suit. The design which was adopted for one particular type has been thoughtlessly retained for nearly every subsequent type, though in many cases the conditions have undergone radical alteration.

It is improbable that by a gigantic fluke the original design attained the maximum of efficiency, and still more improbable that the same happy-go-lucky plan has retained maximum efficiency through many later modifications of the conditions. I am not at all sure that side-plates (possibly perforated), designed to prevent draughts bouncing off the cylinder and fins into space after infinitesimal contact, might not secure improved cooling in many instances, especially in track work, where a head-on blast is always the main factor.

Sir Wotabout Knut-errant-

By Fred Gillett and G.E. Shepheard



1.

Now at this gladsome season of the year
When Spring puts forth her this-year's-pattern buds,
And roadsides deck themselves in flowery gear
And lay aside their best assorted muds,
It doth behove me in these present pages
To tell of those who lived in the dark ages.



2.

Therefore, without excuse, I tell the tale
Anent Sir Wotabout, a worthy knight,
And Lady Helen de la Farthingale,
And several other people, who have quite
Escaped the pen and memory mementive
Of ancient bards—my own is more retentive.

3.

The Lady Helen was the only child
Of Baron Brasted, who a castle had
Upon a hill. The Baron often smiled
Because that hill was steep, its surface bad.
And suitors riding up to woo his daughter
Failed on the one in seven-and-a-quarter.

4.

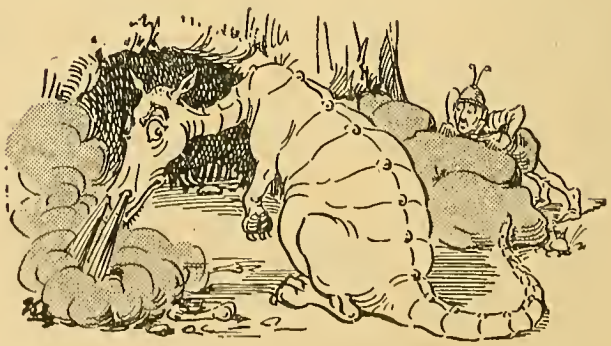
Helen by all the gallant knights was wooed.
Some came on horses, slow and tortoise-like;
And some in carts laborious and crude.
But no one came upon a motorbike,
Because no motorbike was on the market
In those dark days, not even a Noah's Arkette.

5.

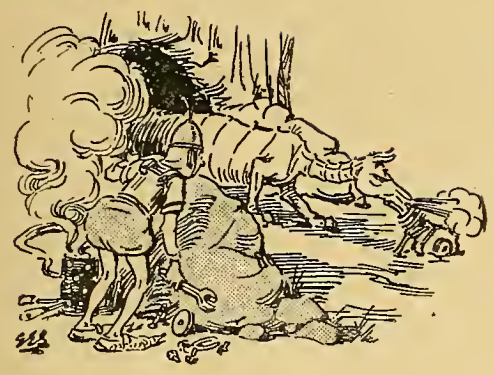
In consequence, their lack of dash and speed
In climbing up the Baron's steep front drive
Made the good Baron very vexed indeed,
And he declared "Till someone looks alive,
Eftsoons! and does this measured furlong well in-
Side seven seconds, none shall wed fair Helen!"

6.

This caused dismay among the knights, who knew
Their chance to gain fair Helen's hand was nil.
The Young Sir Wotabout despondent grew,
Yet by an extra effort hoped on still;
For, as he stood apart and muttered, "Had I
A motorbike!" Helen gave him the glad eye.



Sir Wotabout, Knut-errant.—



7.

At this he hied himself unto a cave
Where dwelt a dragon. Here Sir Wotabout
Observed the dragon snort red fire, and rave,
And breathe blue smoke and thunder from its snout.
"Methinks," thought he, "this dragon hath possession
Of motive power, but badly lacks compression."

8.

That night Sir Wotabout went forth to snare
The dragon by a trap adroit and neat.
He placed a cylinder outside its lair
Fitted with valves and piston all complete,
And when the dragon placed its head unsightly
Therein to search for nuts, he brazed it tightly.

9.

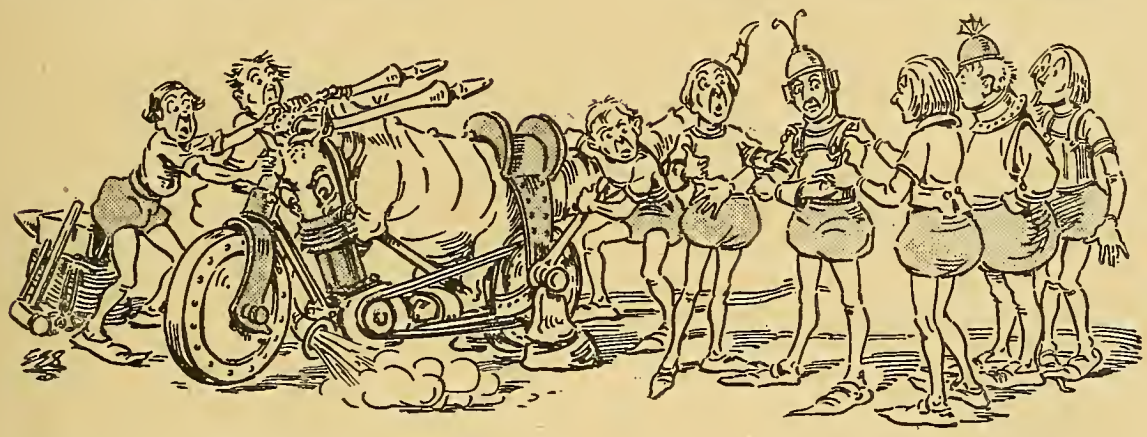
The captured dragon coughed, and gave a hiccough;
The valves opened and closed in strict rotation;
The piston fearful speed began to pick up
At each terrific gurgling exhalation.
Placed on two wheels, with belt, belt rim, and pulley,
It answered speed requirements very fully.

10.

His friends advised him not to ride the thing,
It was, they said, both dangerous and noisesome.
But youth, they knew, of course, must have its fling.
Sir Wotabout determined to enjoy some,
And having tuned his steed and cut the cackle,
Resolved the Baron's hillclimb next to tackle.

11.

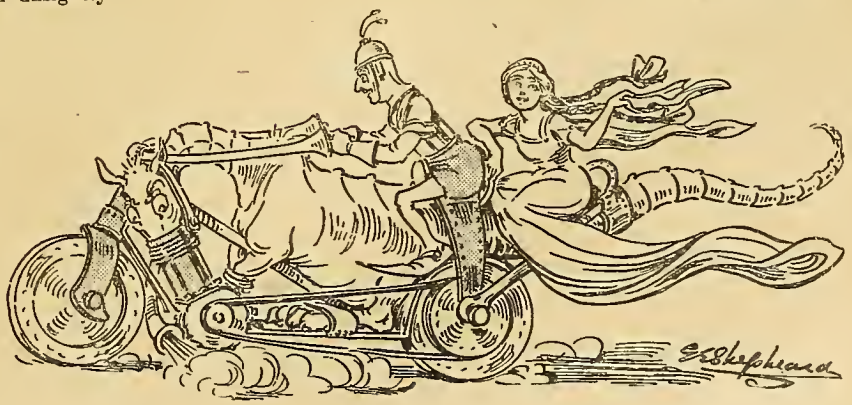
Upon that hill Sir Wotabout achieved
A Dark Age record time, and without fail
The Baron him with open arms received,
So did the Lady Helen Farthingale;
And when the day arrived for him to marry her,
The dragon's tail supplied a splendid carrier.



12.

Moral:—if any—Some who have not tried
The joys of motorcycling still regard
The engine as a monster close allied
Unto the dragon or the fearsome pard.
Those who have not yet passed through petrol's stages
Are still existing in to-day's Dark Ages.

FRED GILLETT.



HOW THE POWER OF AN ENGINE IS TESTED

THIS article is penned for the benefit of those of our readers who do not get the opportunity of seeing their engines tested. In it the writer will endeavour to explain as simply as possible the various methods now in use to ascertain the b.h.p. and to compare their merits and demerits.

The Brake Test.

The brake-horse-power of a motor may be obtained in several ways. The type of apparatus most commonly employed in the automobile industry till recent years is known as the "Prony" or "Brake" test. The apparatus is simple and the mathematics required are of the most elementary kind. Referring to the sketch, F is a pulley driven direct from the engine-shaft. Above and below it lie the wooden brake blocks A clamped to the beam B by means of the bolts C, which can be easily tightened by means of wing nuts. E is a spring balance anchored to the floor and attached to the beam by means of the screwed bolt G.

D is a counterpoise arranged so as exactly to balance the projecting arm of B and also the weight of E.

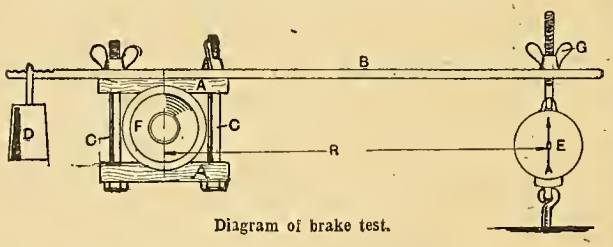


Diagram of brake test.

At the commencement of the test the beam B must be horizontal. The engine is now started and the brake blocks tightened by means of the wing nuts on C. The engine is fully opened up and the blocks tightened until the engine just maintains the speed at which the test is to be taken. B is then again brought horizontal by means of the wing nut on G. Now the exact engine revolutions are noted by means of a tachometer, and also the reading in lbs. on the spring balance E. To arrive at the horse-power of the engine we have now but a simple sum:

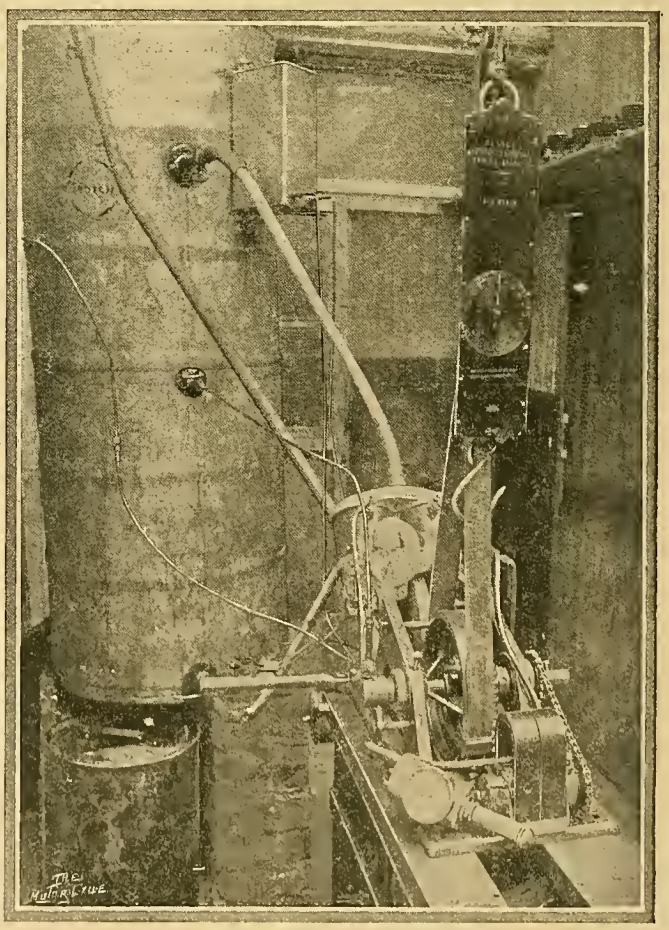
Let $\pi = 3.1416$
r = Horizontal distance from centres F and E
n = Engine revs. per minute
P = Reading of E in pounds

Then h.p. $= \frac{2\pi r n P}{33000}$ Since $\frac{2\pi}{33000} = .0001904$ we may take the latter figure as a constant, and say that the horse-power equals $.0001904 \times r \times n \times P$. The above figures are reliable and may be found in Mr. O'Gorman's motor pocket book.

This test, though simple, is usually a messy proceeding, as the brake blocks have to be copiously oiled to prevent their firing and the oil is thrown everywhere by the pulley. It has therefore been modified in several ways, one of which is used by the Scott Engineering Co., and is worthy of a description.

A Modified Form of Prony Brake Test.

First of all, the engine is bolted down to a heavy iron stand and coupled up to temporary petrol, water, and oil tanks. The engine is then started and allowed to run for three hours at a pace varying from 3,000 to 5,000 revolutions per minute. After this the revolutions are lowered to about 2,000, and the brake test is then applied. In this instance the engine is coupled up to an ingenious water-cooled brake drum by means of chains. The place of the brake blocks and beam is taken by a flat belt passing under the drum and attached at each end to separate spring balances, one of which acts as a positive and the other as a negative balance. Deductions are made from the ensuing readings, and when the engine pulls from 5-6 brake-horse-power it is passed as up to standard, though as much as 7 horse-power has been obtained.



A Scott engine undergoing bench tests.

How the Power of an Engine is Tested.—

After leaving the test shop, the engine is erected in its frame and undergoes further severe road tests, the report on each machine having satisfactorily to answer seventy-nine questions.

The Fan Brake.

The fan brake, which is now becoming common, is even simpler and cleaner. The system is as follows: Two arms are formed by a single stout forging, which is carefully balanced from the centre, and is coupled to the engine-shaft. At the extremity of each arm a flat plate is attached (as may be seen from accompanying sketch). The power required to drive these plates through the air at certain speeds is worked

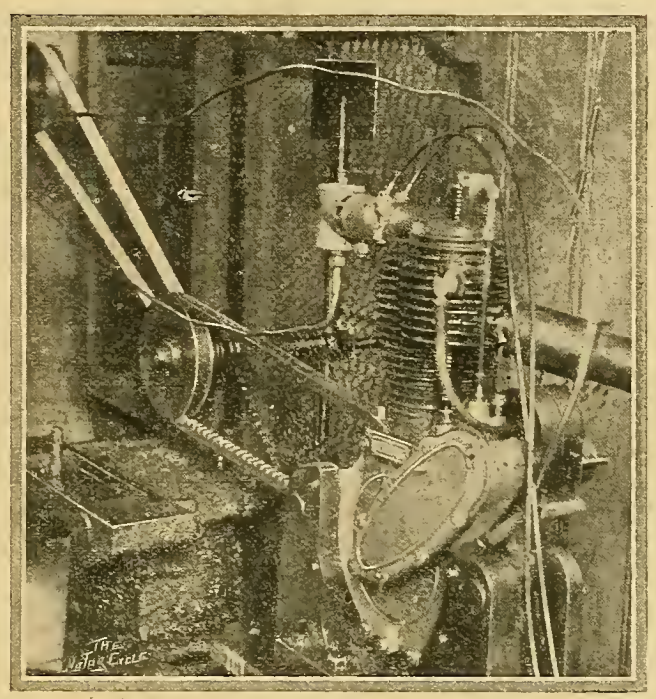


Design of fan brake.

out in the form of a curve. The speeds in fan revolutions being set horizontally and the power required vertically, curves are worked out to suit plates of different areas. Once the curves have been plotted it is only necessary to affix the fan blades, start up the engine, and open the throttle till maximum revolutions are obtained. The revolutions are then checked accurately by means of a tachometer, and it is ascertained from the curve what power is required to drive the blades at this speed.

By the courtesy of Rudge-Whitworth, Ltd., we were permitted to watch a test and take the photograph reproduced herewith. A short description of the testing arrangements may be interesting. The engine is bolted down to a heavy cast-iron stand placed in front of an electrically driven blower, which when necessary can force a draught of sixty miles per hour. In this case the fan blades are fixed to a counter-shaft and driven by a V belt, the counter-shaft being geared down 2 to 3. From this counter-shaft runs another belt visible in the photograph, which drives a tachometer giving the engine revolutions per minute.

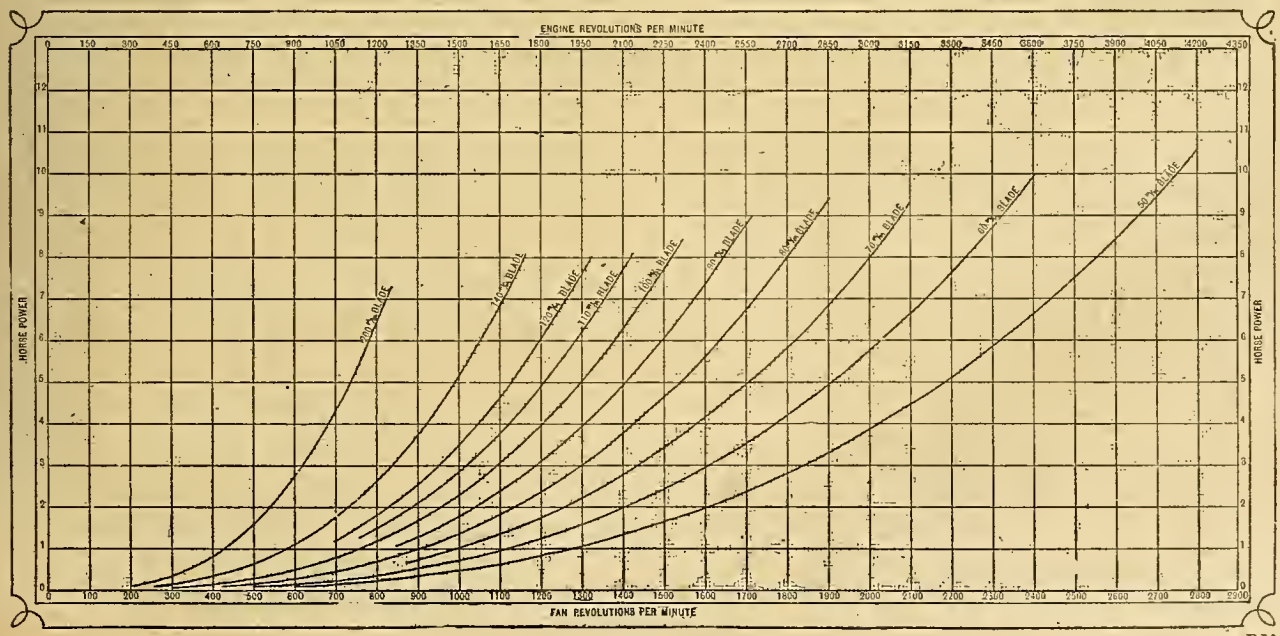
The accompanying chart shows curves worked out for eight different fan blades, varying in size from



A Rudge engine undergoing the fan brake test.

50 mm. square to 200 mm. square. The horse-power is given vertically, the engine revolutions horizontally at the top, and the fan revolutions at the bottom.

To take a simple instance (not from an actual test). Suppose the 80 mm. blades were in use, and the engine when opened out succeeded in revolving at 2,400 revolutions per minute. The counter-shaft is geared down 2 to 3; therefore it revolves at 1,600. On following the vertical line between these points, we find that it cuts the curve for the 80 mm. blade at a point rather more than halfway between the 5 and 6 horse-power lines, showing us that it requires 5-6



BI

How the Power of an Engine is Tested.—

h.p. to drive the blades at the above revolutions. It will be noticed from the photograph that the fan blades are enclosed in a stout wood and wire frame. This is a very necessary precaution in case a fan arm should burst. The writer has seen an arm break close to the blade, when testing a car engine, and though the broken part weighed probably less than a pound, it cut right through the wooden roof of the test shop and broke about a dozen slates. Besides cleanliness and simplicity, this test has another very real advantage, viz., that the engine can be run at full load for long periods without attention to the fan.

The Electrical Test.

There is another form of horse-power test which, though used for testing car engines, has not so far (in the writer's knowledge) been used for motor cycle engines, and therefore needs but a short description. This is the electrical test.

For this test the engine is coupled direct to a dynamo, the output of which is measured in "watts" (volts × ampères), 746 watts = 1 h.p. Before accurate results can be obtained the efficiency of the dynamo must be ascertained. Quite a large number of firms give their engines no bench test and rely entirely on the ascent of some well known test hill as a trial of engine power. For this system it may be claimed that the engine is being driven under actual conditions, but unfortunately it is impossible to eliminate the personal element, and a clever tester can do wonderful things with only a moderately powerful engine. UBIQUE.

A NIGHT RIDE IN THE LOW CYCLECAR.

IT was a dark and foggy night when the opportunity came for accepting the long-standing invitation. The fog was of the clammy variety which rendered things generally unpleasant. "You mustn't mind if it is not pulling," said Mr. Low. "The compression has fallen from 800 to 350 lbs. per square inch." No, this is not a peep into the future, but an actual fact. I had not fallen asleep after a heavy Christmas dinner. I was really talking to the inventor, and in a few minutes was behind him in the converted cyclecar propelled by the wonderful forced induction engine.

Petrol was first injected into the cylinder jackets, the exhaust lifter was raised, and the compression reduced thereby to about 30 lbs. per square inch, and the engine pulled over. This sucked the petrol through the trip valves into the cylinders, and the engine fired. The exhaust valve was dropped, and the forced induction, caused by the heat of the explosion raising the temperature of the petrol and increasing the compression pressure, began.

The Noise of the Exhaust.

The first thing noticeable was the noise of the exhaust, a totally different sound from the ordinary engine with cut-out open. It was the sharp, ear-splitting sound of the high explosion.

We often hear a noisy engine likened incorrectly to a Maxim, but this absolutely describes the exhaust of the Low engine. It fired beautifully on the high-speed trembler coils, and, smoothly getting under way, Mr. Low swung the machine out of the side turning into the open road. It was pitch dark, but the keen eye of the inventor steered us clear of all obstacles. The driving mist obscured my vision completely; blurred lights sprang up and disappeared; the beats of the engine increased in rapidity; we sped along I knew not whither. Suddenly lights sprang up all round, we were again among civilisation. Quickly I gauged my bearings; we were on a hill. Ere I had realised it, we were up in less time than it takes to write, and had it not been for the glare of electric lamps, I should never have realised we were on a gradient.

The sense of power was delightful, and the bark of the exhaust lent a touch of interest which I would not have been without for worlds. We turned about, sailed forth again into the darkness, entered the lanes once more, slowed down at a few corners, and were home. No, I did not wake up to find myself in a comfortable armchair at 3 a.m. shivering in a cold room; I was actually wiping real fog from real glasses and brushing real mud off a real coat sleeve gathered from several times putting on recalcitrant belts which would jump off.

"I must apologise for this exceedingly poor performance," said Mr. Low. "The loss of 450 lbs. compression makes, of course, a considerable amount of difference to the power. You see, the trip valve springs are too weak, and their lift had to be restricted. The petrol, instead of being injected during half the stroke, is only being injected during half an inch of the stroke."

"Quite so," I replied; "but it is hard for one not accustomed to this engine to realise. I noticed the buzz of your coils gave a very high note. I suppose the tremblers have a very high speed?"

"Yes," replied the inventor, "though the engine, when hot, will fire without a spark. The long, lasting spark during the whole stroke enables the mixture to be fired comparatively slowly and the pressure to be maintained throughout."

The Method of Control.

"How do you control her?" I asked.

"By the exceedingly crude and unsatisfactory method of using the exhaust lift, and by opening or shutting the cock on the pulsating pump delivering petrol from the tank to the jacket, which regulates the pressure of the petrol vapour, and consequently the quantity injected. In the new engine, which I hope to have out in a couple of months, I shall govern by the oscillating valves, and by these I hope to get an engine as flexible, or nearly so, as a steam engine.

"One word before we say good night. I have never let her out, but were I to do so when she was in tune I should do sixty miles an hour." "I believe you," I replied, "were the belts to hold." "There you have it," answered Mr. Low, "the new engine will be fitted to a chassis which has some positive form of transmission."

"Is there any truth in the rumour that you will enter a machine fitted with this engine for the T.T.?" I asked. "Yes," said Mr. Low, "I hope to." "Well," I replied, "I wish you the best of luck with it. If any man deserves success you do." And with that I said good night. E.M.P.B.

CLIMBING HONISTER PASS

RED BANK, GRASMERE & KIRKSTONE PASS from Ambleside.

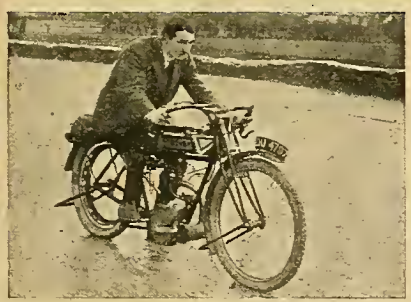
A WEEK-END IN LAKELAND



Frank Smith (5 h.p. Clyno), with R. H. Bell as passenger, starting for Honister.



B. Haddock (2½ h.p. A.J.S.) at the top of the steepest pitch on Honister.



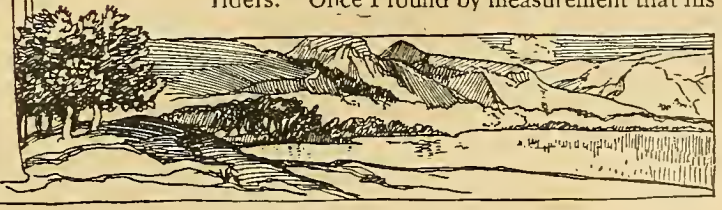
Vernon Taylor (3½ h.p. T.T. Rudge), who climbed the Pass with a single gear.

A FORTNIGHT ago Honister Pass, Cumberland, had not been successfully climbed by a motor cycle of any description, but now, thanks to the enterprise of a number of riders, who readily took up a challenge in the columns of *The Motor Cycle*, it can be said that a sidecar has succeeded, a lightweight machine, and also a single-geared heavyweight. Our last week's description of the events of the 9th inst. would make it clear that the test was not actually a fair one, on account of the impossible state of the surface, covered, as it was, with boulders and big flat shale. Further, an ascent is fraught with considerable danger on account of the sheer drop which everlastingly preys on the motor cyclist's mind as the long climb upwards is made. There were many opinions expressed as to which was the more difficult, a climb on a sidecar or on a motor bicycle. Personally I should favour a sidecar climb, as a slower speed is possible. Several times I was asked whether in my opinion the ascent was worse than Porlock, and Frank Smith agreed with me that, though Honister Pass is more difficult and dangerous, simply on account of the stony state of the surface, the gradient is not so severe as Porlock. A lot has been made of the stones having been removed from the steepest part, but as they were shovelled aside for but ten or twelve yards and at the point where a sudden diversion of the front wheel might conceivably spell instant death to someone, I can see no objection to this procedure.

The Question of Gear Ratio.

Several times one heard the comment that gear ratios alone decided success. That is certainly the case to a large degree, but, as has been pointed out before, an engine must be designed to suit its gear, or it could not travel two miles uphill culminating with half a mile of 1 in 7, with a stretch of 1 in 3½ thrown in. Try a low gear for a long ascent with a high compression engine, and the force of my argument will soon be appreciated.

Vernon Taylor (T.T. Rudge) was the one man who made the spectators quake. He is a most daring rider, and I knew that his third stop on the hill would have the effect of stirring him up. When he had got the belt at the right tension and his best gear ratio on, he travelled at a wonderful speed in view of the conditions. His machine was buffeted about in a way that would have stopped many less intrepid riders. Once I found by measurement that his



Climbing Honister Pass.—

wheel marks were within 18in. of the edge of the road bordering on the 50ft. drop.

Frank Smith, on his Clyno sidecar, and Hugh Gibson (Bradbury with empty sidecar) deserve especial congratulations, as they succeeded in their announced object at the first attempt.

Bert Haddock, who was mounted on a lightweight 2½ h.p. A.J.S. with a low gear of 17¼ to 1, told me that he guaranteed his machine to climb anything where there was a road at all. Truly we are coming to something when users of such diminutive engines express themselves so confidently.

The Second Day's Climbing.

Next day the members of the Cumberland County M.C.C. and the Westmorland M.C.C. had arranged that the party should attempt Red Bank, Grasmere, and afterwards Kirkstone Pass. Unfortunately, Hugh Gibson was unable to join the party owing to gear trouble, and his nerves were also very much upset by Saturday's exertions. There was quite a happy little gathering at Red Bank, Grasmere, which was reached after a magnificent run past Thirlmere, Grasmere, and Rydal Water, and the same success which Smith, Taylor, and Haddock had achieved on the Honister Pass climb was again their lot. This is not surprising, as Honister is admittedly the most severe test to which a motor cycle can be put. Red Bank is very steep and rather twisty, but the chief point is that the surface is good. Millburn and Gregson (Triumphs), Little and Gilbank (Rudges), made clean ascents of Red Bank. After photographs were taken, it commenced to rain very smartly, so a hurried move was made to Ambleside for lunch.



The first lightweight to ascend Honister—the 2½ h.p. two-speed A.J.S., ridden by B. Haddock.

Kirkstone Pass the Last Ascent.

In the afternoon the long ascent of Kirkstone Pass was climbed by Frank Smith (Clyno) and Bert Haddock (A.J.S.) without taxing their engines to the uttermost, and no doubt Vernon Taylor would also have been successful, but after about a mile and a half of climbing he imagined he was at the top of the hill, and pulled up. It is strange that the road appears to drop at this point, giving one the impression that the summit has been reached, but after running slightly downhill for half a mile one encounters the most difficult stretch of the climb. This portion is known as "The Struggle," and consists of a zigzag road, the gradient averaging approximately 1 in 6 for half a mile. One of the Westmorland members—L. Pierce (T.T. Rudge)—made the only non-stop ascent from Ambleside to the White House at the top on a single



An excellent point of vantage.



Hugh Gibson, of Southport, on the steepest part of Honister Pass with his 3½ h.p. Bradbury motor cycle and empty sidecar.

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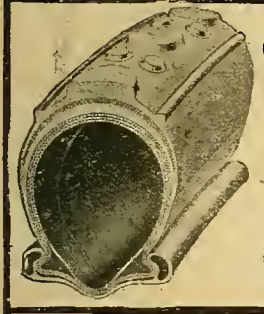
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Made in 24", 26", and 28".
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Avon Dome Ends for Motor Cycle Tubes. Enormous Success. Easily fitted. TRY THESE. Reg. No. 572,420.



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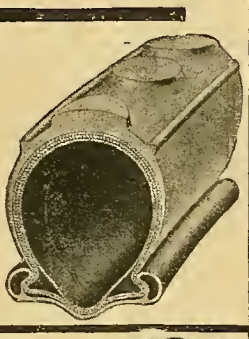
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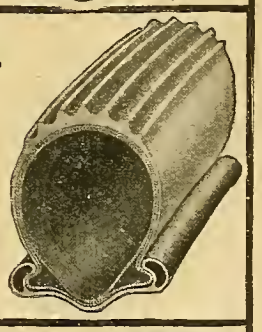
Suitable for 3½ to 5-6 h.p.



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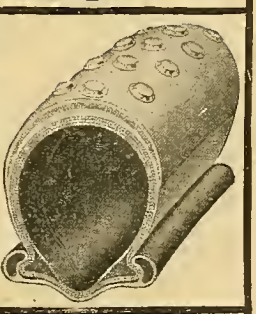
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Lightweight B.

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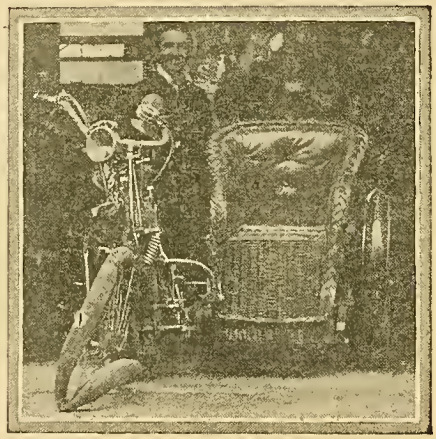
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Mr. J. K. Orsman, 62, Old Woolwich Road, S.E., the owner of the machine, tells the story:—"I enclose a photo of my motor cycle and sidecar after collision with a motor 'bus. The Dunlop tyre on the front wheel, notwithstanding the impact, did not deflate or leave the rim, otherwise the machine was a complete wreck."

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The DUNLOP PNEUMATIC TYRE Co., Ltd., Aston Cross, BIRMINGHAM; Alma Street, COVENTRY.

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Climbing Honister Pass.—

geared machine during the afternoon. A number of other members were successful in climbing the pass in two stages.

Altogether the trip was much enjoyed. Lakeland appears to be an ideal touring ground for motor cyclists, and especially those sporting riders who never rest until they have climbed everything. The best thanks of the Midland party are due to the captain and secretary of the Cumberland County M.C.C.,



Vernon Taylor (T.T. Rudge) on the 1 in 3 portion of Honister Pass.

Messrs. Little and Millburn, for the arrangements they made, whilst Fred Greenwood knew everything.

Monday was the day for general dispersion. Haddock (A J S) continued his way over the Scotch border, Gibson (Bradbury) returned to Southport, and Taylor (Rudge) and F. Smith (Clyno) journeyed to the Midlands by road. I occupied the seat of the Clyno, and the morning being fine and the air crisp, once under way we lost no time. It was ten o'clock when we left, and we were both anxious to get home that day. Soon our good beginning was cut short by a curious trouble; the engine commenced to misfire, gradually stopped, and glancing downwards we found a collection of hoar frost on the carburetter. A frozen carburetter in March is not common, yet we were troubled for a long time in this wise. Once again over Dunmail Raise, on the second gear of 6½ to 1, we commenced to pick up time lost in thawing the carburetter. By the way, has any motor cyclist noticed that the milestones from Keswick to Ambleside are wrong way round? On the way from Keswick he

The hill-climbing party at Red Bank, Grasmere, overlooking the lake.





At the summit of Kirkstone Pass. F. Smith, W. M. Millburn, and B. Haddock.

milestones state distances from that town, and you have to crane your neck to find how far it is to the next village. This is contrary to the usual way of doing things, and it would be interesting to hear the local surveyor's reason for this unorthodox method. Also the bits of small granite scattered over this road for many miles were thrown into my face by the front wheel. Goggles were consequently a *sine quâ non*. The same thing happens on muddy roads. I wonder that some sort of mud shield to the front wheel has not been evolved for sidecar work.

We greatly enjoyed the ride past Windermere, and, in fact, were indeed sorry to leave the Lake District

Climbing Honister Pass.—



A striking snapshot showing the enthusiasm of the crowd when Frank Smith accomplished the first ascent of Honister.

behind. Near Lancaster an A.A. scout advised us of a long stretch of road under repair, and directed us down a by-road. We exhibited no badge.

There was a thick mist in the atmosphere as we approached the district so much dreaded by motorists—I refer to the Preston-Warrington-Wigan stretch. Instead of reeling off regular miles at 30 to 40 m.p.h. on deserted stretches of road, we crawled along, being bumped out of our seats by the pot-holey surface and big cobble stones. In the towns our progress was still further curtailed, as, owing to the coal strike, the streets were crowded. Once we were hailed by a Lancashire agent who was anxious to know the result of the Clyno trip. Having been informed that it had proved eminently successful, and everything attempted had been accomplished, he made us laugh by saying in the broadest Lancashire, "Well, you'll have to alter the name and call your machine the 'Clymb-ote.'"

Nothing eventful happened up to Congleton, Cheshire, where we halted for refreshment. On again to Newcastle-under-Lyme, we hurried along as fast as possible, the mist betokening that we were in for a foggy night, and we had still sixty miles to cover to Wolverhampton. I was particularly interested to observe that the Clyno engine was little, if any, the worse for its severe buffeting on Honister Hause. It responded to the throttle on every occasion, and the fact that throughout the 200 miles run home we never had occasion to drop below the second gear proves the power generated. Once again it is worth pointing out that throughout my experience of Clynos, extending well over 1,500 miles, I have not seen a plug or valve removed on the road as yet. This is the more striking when one remembers that Frank Smith does not spare the oil, and whenever he approaches a steep hill, glances round to make sure that his mascot, in the shape of a long blue reek, is in the rear.

I privately noted the petrol we took aboard. Starting with a full tank of 1¾ gallons, we bought half a gallon at Preston and another at Newcastle, and the total of 2¾ gallons would have seen us safely to Wolverhampton, where I was to board a train, had not the black night and thick fog compelled us to resort to the low gear for many miles; it was absolutely dangerous to attempt even 15 m.p.h. on the 3½ to 1 top gear. We lit up in Stone, Staffs, and the most exciting part of the journey followed. A couple of F.R.S. lamps exhibited a fine beam ahead, but it was reflected back by the fog, and we simply had to crawl along. Just imagine, we actually passed the most dangerous vehicle on the road, viz., a timber lorry drawn by three horses with a huge tree trunk extending for several yards in the rear—no light at the back.

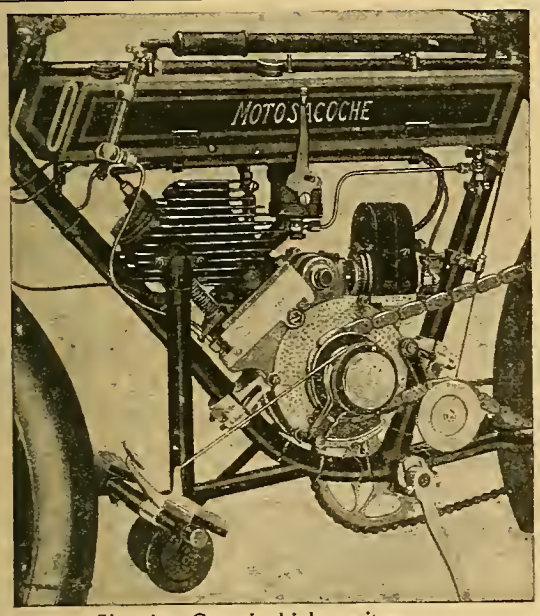
In the Fog and No Petrol.

The excitement was not over. No sooner had darkness come on than our old trouble haunted us again, and every dozen miles or so we were pulled up to thaw the carburetter slides, on which ice formed, causing them to stick open.

Thus ended an eventful week-end and a varied day's run—first the lovely run through the Lakes with snow-capped hills on either hand, immediately followed by a nightmare of cobble stones and intricate tramlines of the thickly populated Lancashire manufacturing towns, next the barren Potteries district, and finally a foggy night as black as it ever could be in the noted Black Country. GEOFFREY SMITH.



The last half mile on Kirkstone Pass, known as "The Struggle," an appropriate title from a motor cyclist's point of view.



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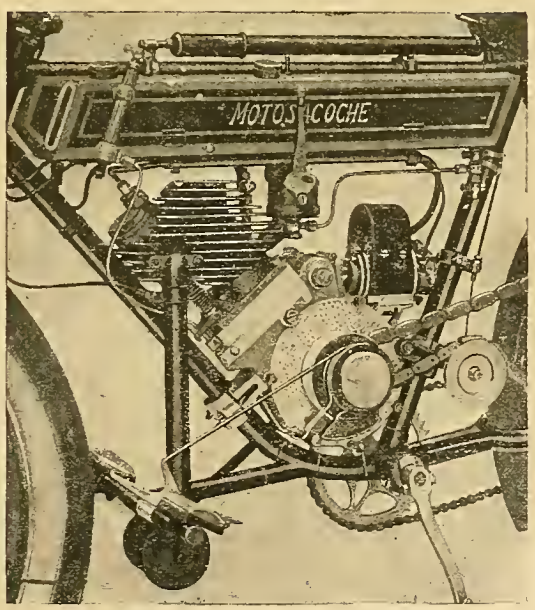
The "A" Catalogue cannot fail to interest you, send a postcard for it, it is free of charge.

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In answering this advertisement it is desirable to mention "The Motor Cycle."

A Run on a Ladies' Heavyweight.

THE Premier Cycle Co., of Coventry, is one of the few firms who have laid themselves out to construct a 3½ h.p. ladies' machine, and they have done this in response to numerous enquiries which they have received. It is, of course, more difficult to construct a neat-looking ladies' heavyweight than a lightweight, but the Premier Cycle Co. is to be congratulated on its success.

We outlined the general design of the machine in a recent issue, so that it is only necessary to point out that the front down tube has been replaced by two tubes of smaller diameter, and that the model may be fitted with either the Premier free engine or the Armstrong three-speed hub. It was the latter type which we were invited to try one morning last week, the road conditions at the time being adverse.

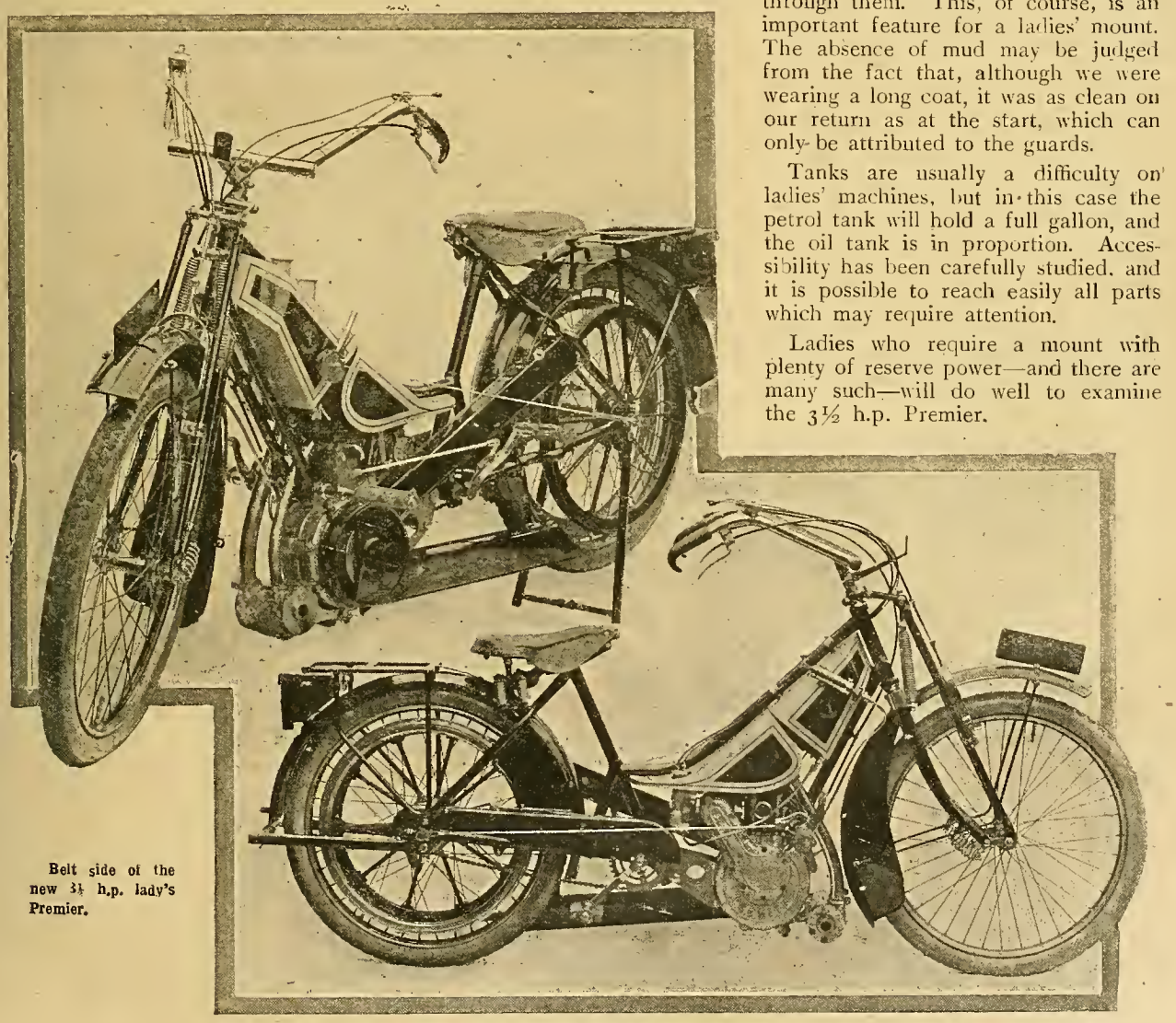
Having started up the engine, we took our seat, and were at once struck by the comfort and the ease with which the controls came to our hands. The machine glided away, and we were soon on the high gear, but deemed it advisable to drop down again to the middle or direct gear on account of the treacherous road surface. The engine pulled beautifully, and we found no necessity for racing the engine when starting up, the heavy flywheels taking up the drive comfortably and easily. As a test for the engine power, we changed into the high gear close to the foot of a fairly steep rise, and were delighted with the way in which the engine picked up and the machine sailed over. This will cause no surprise when we state that the 85 × 88 mm. engine is of identical design to the 3½ h.p. engine fitted to the diamond frame model.

A Clean and Efficient Mount.

We found this mount handy in traffic and, above all, clean, thanks to the wonderfully efficient belt guards, which are formed like tunnels, the belt running through them. This, of course, is an important feature for a ladies' mount. The absence of mud may be judged from the fact that, although we were wearing a long coat, it was as clean on our return as at the start, which can only be attributed to the guards.

Tanks are usually a difficulty on ladies' machines, but in this case the petrol tank will hold a full gallon, and the oil tank is in proportion. Accessibility has been carefully studied, and it is possible to reach easily all parts which may require attention.

Ladies who require a mount with plenty of reserve power—and there are many such—will do well to examine the 3½ h.p. Premier.



Belt side of the new 3½ h.p. lady's Premier.

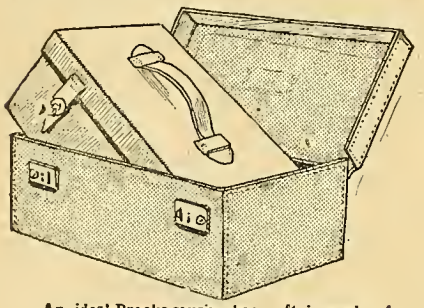
Broadside view showing dressguards over the belt.



TOURING EQUIPMENT.

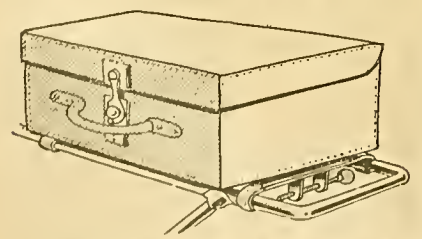
By B. H. DAVIES.

EXTREMES meet. In the accessory world the extremes are represented respectively by the youth with the Norman-arch back, whose kit is contained in a military hairbrush case, flimsily attached to his spring forks, and by the gipsy caravan type of rider, whose handle-bars sag disgracefully beneath his 8in. acetylene flare, his (electrically illuminated) speedometer, his (electrically illuminated) route card holder, his (pigskin cased) first aid outfit (at least, I suppose this is what those triangular handle-bar bags hold, I never had the temerity to open one), his thirteen club badges, his golliwog mascot, his eight-day clock, his

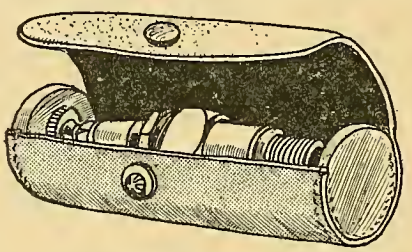


An ideal Brooks touring bag. It is made of stout leather, and has an interior casing to accommodate touring equipment, thus rendering the bag weather and dustproof.

Baby Klaxon, his Hampton Court maze hooter, and other trifles of ironmongery. His carrier stays sway and buckle under the swing of a top case containing his dress suit, panama, and sleeping kit, overlaid by three spare belts, two tubes, and a cover, all shrouded in more pigskin atrocities of various shapes and sizes, and the triangles at the side of the carrier are occupied by gigantic panniers enshrining more tools than a decent fitter would take out of store when he had to dismantle a motor 'bus. I loathe both types impartially; and, as I said, they often meet on the road, when the teeteeing type borrows a big wrench to straighten his front forks after colliding with a road hog perambulator, which was criminally meandering on the wrong side of the road, and the gipsy caravan proprietor has to unlash all his load before he can



Lycett's touring bag with special metal clips for attaching to the carrier. The latter should prove a great boon, as few motor cyclists have not experienced the trouble of leather fastenings breaking.

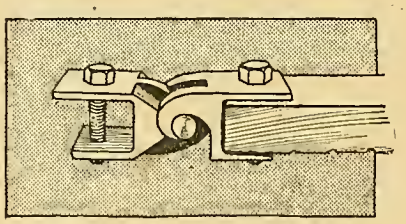


Forward leather sparking plug case. It is a necessary and useful covering to prevent damage to the plug.

unearth "just the very tool for the job." After relashing, his language perfumes the circumambient air like a smoky exhaust.

The Toolkit

I counsel the juvenile and viridescent motor cyclist to deride both these sports, and to select a moderate and practical kit. The toolkit is the real essential, and may consist of a few simple instruments, which are rarely provided by the makers in an ideal form. I like one big spanner, say 8in., and one 4in. ditto. The latter with a screwdriver, a belt punch, a knife, and a belt fastener, will suffice for ninety-nine out of every hundred stoppages, and should, therefore, be kept in a stolen duster in a small push cycle bag strapped on anywhere; either the handle-bar or the side stay of the carrier is a good place. The screw



The Amac belt fastener which is specially suitable for high-powered machines.

driver should be expensive with a fine edge. If it be cheap the blade will fall out, or the handle be too thin to get a real twist on (as when a belt screw is rusted home); if it has a thick edge it is no use for belt fasteners. The combined belt drills and cutters are heavier and somewhat stiffer to use. It is true they do the job very accurately, but so does an ordinary screw drill punch of the correct size for the belt section, provided the user's eye is not inflamed with drink. Of course, if you use a drill punch with an opening for an inch belt on a ¾in. belt, and rest it against the corner of a stone wall, the hole will be out of truth, and the belt will pull through in twenty-five miles.

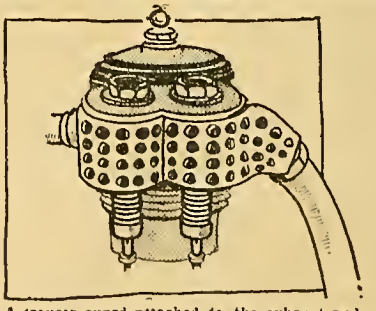
The main tool outfit will pack nicely into the little pannier bags provided by the makers. It is just as well to overhaul the fastenings of these bags. If they are fixed to the carrier by plain straight bolts with nuts about a quarter of a millimetre in diameter, you will ride pursued by a constant jangle until all your tools tumble off. Bent plates with strong bolts and D nuts are, however, absolutely reliable; so

NO NEED FOR A CAMERA TRIPOD.



The patent ball-joint camera attachment marketed by Brown Bros., Ltd., for attaching a camera to the handle-bars.
A. Screw for fixing camera. B. Ball-joint
C. Handle-bars.

is a good home-made bolt, cut off jaggedly with a hack saw, and burred well over its nut. A really good method of stacking the essential spare belt has yet to be devised. I have tried the flat round cases sold for the purpose, but not all of them have strong straps, and it is sufficiently annoying to lose a guinea belt without throwing in a 7s 6d. case. Personally, I like wreathing the belt tightly round the handle-bar or tank, and securing it with its own fastener or a bit of wire; if looped round the tank it will make a fine substitute for knee grips. The spare tube can be carried in the small leather collar



A trouser guard attached to the exhaust and inlet ports, sold by H. Holt & Co.

THE NEW
LODGE
MOTOR CYCLE SPARKING PLUG.

DESIGNED FOR MAXIMUM POWER.

The greatest test for a sparking plug is its use on a motor cycle, and it is of the utmost importance to secure the best possible plug.

The following are the reasons why the Lodge Plug is very strongly recommended as being the best.

SPARKING POINTS.—The sparking points are so shaped that the greatest amount of heat of the spark is given up to the gas.

The shape of the points tends to expand the spark allowing for a very large spark at high speeds and yet giving easy starting. The points are also designed that they absorb the minimum of heat and cannot cause pre-ignition: being made of absolutely pure nickel they will not corrode away.

INSULATION.—The insulation is higher than that in any other plug. To test this make comparative measurements using an electrical insulation meter, and measure the insulation between the terminal and the body of the plug **when hot** and with the cable disconnected.

GAS TIGHT.—The plug is made solid with no packing of any kind, and is absolutely gas tight and will always remain so. To test this cover the outside of the plug with oil when any leakage would at once be apparent by the bubbles.

GUARANTEE.—The insulation will not crack nor is it possible for any part of the plug to come loose. It is for this reason that, however severe the working conditions, the makers can comfortably guarantee the plug for one year.

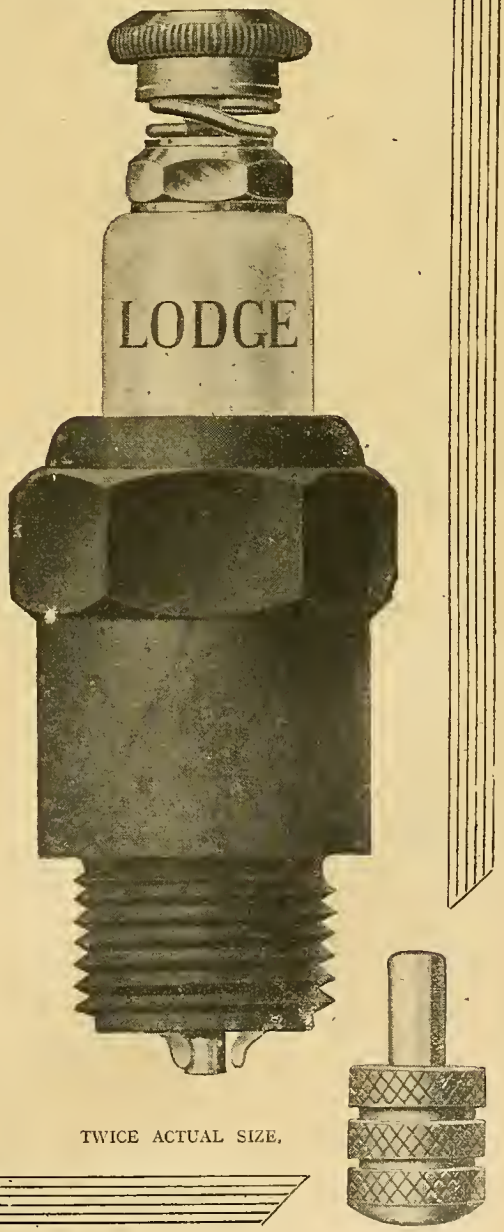
The plug will, of course, last for many years.

The Lodge Plug is supplied with a steel gauge for accurately setting the points.and with a push-on terminal.

The Plug can be bought everywhere, price 4/- net.

When ordering specify "Lodge Motor Cycle Plug," and they are packed in red striped boxes.

CAUTION.—There are some unscrupulous dealers who will offer another make of plug on which they secure a large profit, but if you are convinced that the Lodge Plug is what you want, you will resolutely reject any substitute.



TWICE ACTUAL SIZE.

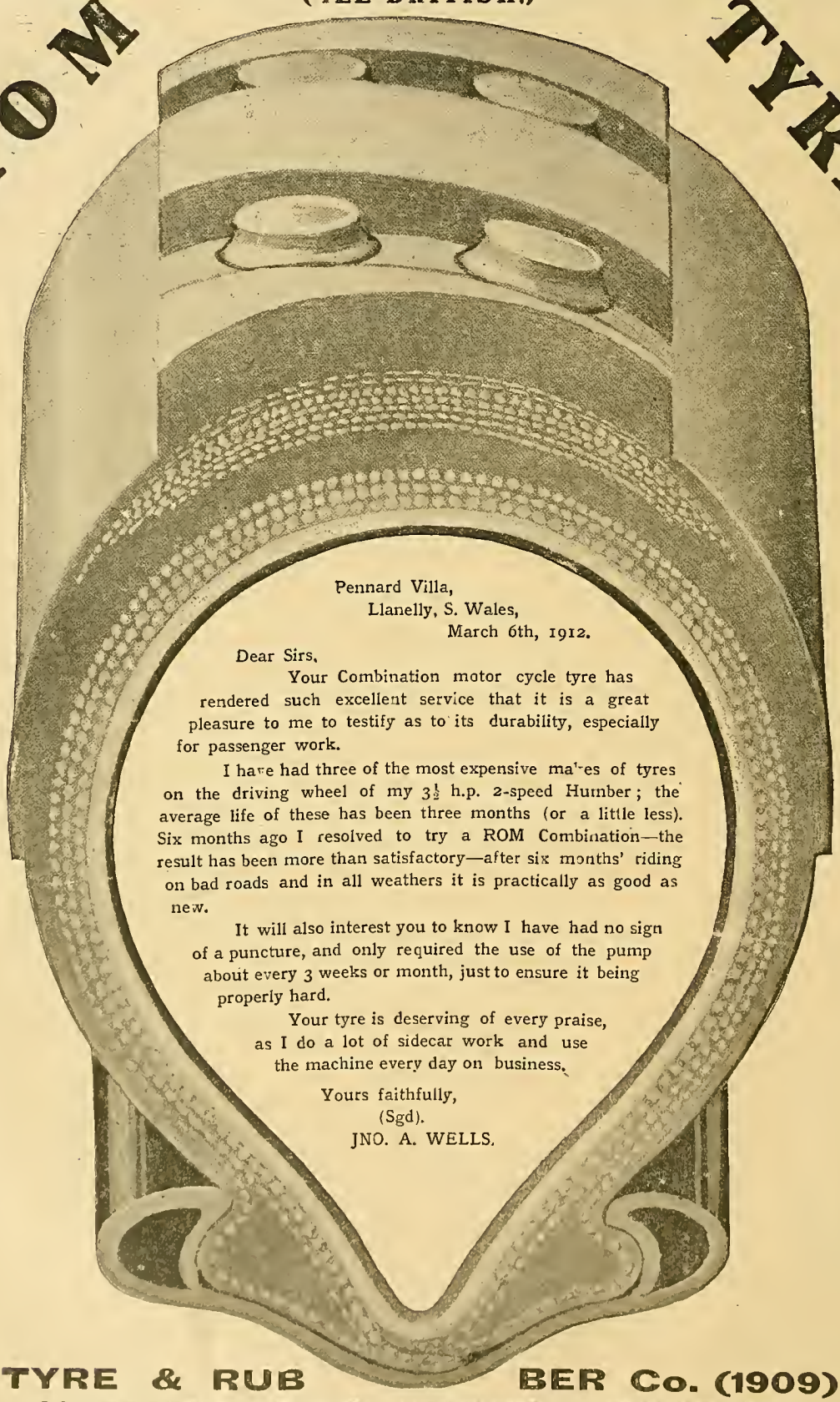
This plug has hitherto been sold at 5/-

NOW 4/- NET.

LODGE BROS. & CO., Dept. E. New St., BIRMINGHAM.

ROM TYRES

(ALL-BRITISH.)



Pennard Villa,
Llanelly, S. Wales,
March 6th, 1912.

Dear Sirs,

Your Combination motor cycle tyre has rendered such excellent service that it is a great pleasure to me to testify as to its durability, especially for passenger work.

I have had three of the most expensive makes of tyres on the driving wheel of my 3½ h.p. 2-speed Humber; the average life of these has been three months (or a little less). Six months ago I resolved to try a ROM Combination—the result has been more than satisfactory—after six months' riding on bad roads and in all weathers it is practically as good as new.

It will also interest you to know I have had no sign of a puncture, and only required the use of the pump about every 3 weeks or month, just to ensure it being properly hard.

Your tyre is deserving of every praise, as I do a lot of sidecar work and use the machine every day on business.

Yours faithfully,
(Sgd).
JNO. A. WELLS.

ROM TYRE & RUBBER Co. (1909) Ltd.,
36, BROOKE STREET, HOLBORN, LONDON, E.C.
TELEGRAMS: ROMDOM, LONDON 'PHONE: 1513 HOLBORN.
B30

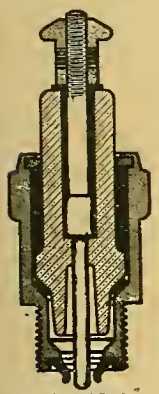
Touring Equipment.—

boxes made for the purpose—if there is a corner somewhere into which the case can be jammed, for these cases are an awkward shape for tight strapping, and a motor cycle has a marvellous knack of casting

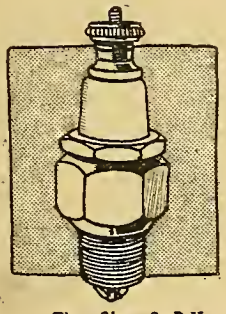


A woollen throatlet sold by Hunt's Stores.

loose any queer shaped objects strapped to its rigid portions. Personally, I reserve the left-hand pocket of my waterproof coat for the spare inner tube.



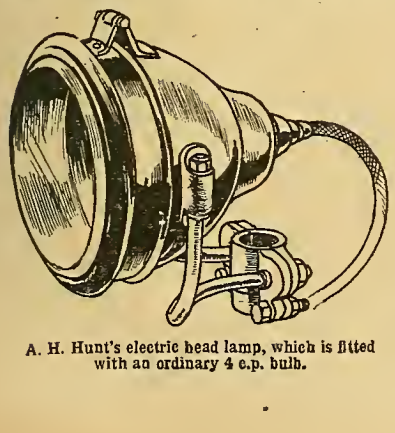
Section of Lodge patent Steatite plug.



The Oleo 2 B.M. sparking plug specially designed to withstand great heat and pressure.

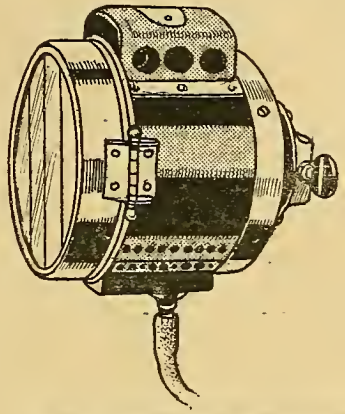
Lamps and Generators.

In the matter of lamps, I find that the extra few hundred feet of illumination procured by very costly sets make very little difference to the speed at which I travel in the dark. Perhaps I



A. H. Hunt's electric head lamp, which is fitted with an ordinary 4 c.p. bulb.

lack the pluck to take full advantage of their light. At any rate, I usually employ a lamp at about a guinea (not including a generator), and find that this enables me to average legal limit on roads I know. Probably, if I had better eyesight, I should use a more expensive lamp and average 30 m.p.h. on roads I do not know, until I got lagged. I use two generators. One costs 5s. 6d., and is a somewhat shoddy affair—it is employed on all-short runs, and serves

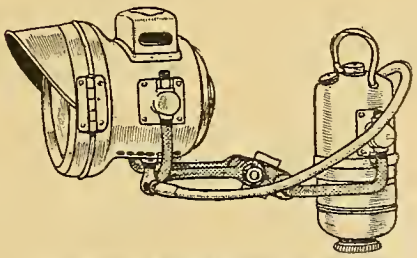


A.B.C. separate generator lamp which has an ebony finish for all-weather use.

as a spare on the rare occasions when I ride all night; the other is a big riddle-grid, which is mounted behind the steering head on long night rides. If you want to be economical with your carbide, and maintain a first-rate light all night, the water valve should be under your hand all the time. I have not yet discovered an efficient automatic generator, either for car or cycle, and I must say I should like to try the Yankee plan, and use a dissolved acetylene cylinder.

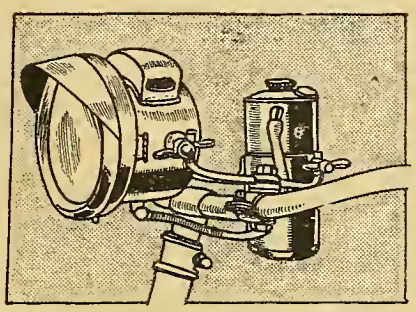
Detachability of Lamps and Generators.

My chief point about a lamp is that it must be instantly detachable. I



The Miller Mangin lens lamp and generator set. The special combined bracket attached to the steering head is a great convenience, as we have proved from practical experience.

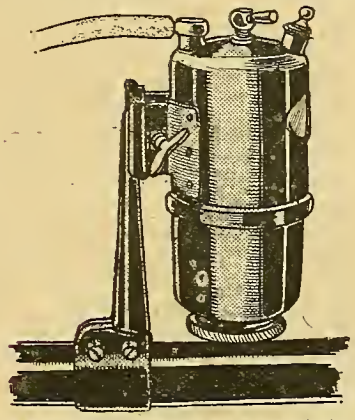
loathe carting round a heavy and costly and bulbous-looking lamp when I only intend to ride ten miles at midday; and some of the modern lamps resemble a Chinese puzzle, and call for three special spanners if they are to be rapidly and accurately attached with their formidable brackets. Nor do I like riding with their huge forked brackets empty; if some *contretemps* sent one sailing over the handle-bar, these forks are guaranteed to arrest one painfully *en route*.



The Lucas lamp and generator set attached by a special bracket to the handle-bar.

Horns and Hooters.

The hooter is a detail on which good men and true have spent as much as £5 between May and September. There is the horn which sheds its twisted mouth and barks grumpily out of an abbreviated socket; there is the horn which slides down the bar and jingles merrily against the A.C.U. badge; there is the horn which suffers from what doctors call aphasia. The main point



A.B.C. generator attached to the top tube by a special bracket. This also has a black finish.

about the horn is its clip. Eschew the cheap horn with soft brass screws—their cheese-heads fall off when you try to tighten them, and leer drunkenly up at you out of the mire. Eschew the large horn—it looks like Johnny Trundley on a Motosacoche. Get a good small horn, with a first-rate clip, and when it loses its voice, just stroke the inside of the

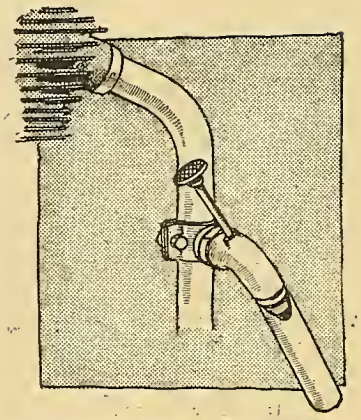


A three-coil horn sold by Brown Bros., Ltd.

reed-tongue with a slip of tissue paper, and all will be well. Exhaust whistles are all right, if considerately used, but there are times and places where it is bad manners to use them; they should therefore be made use of only when necessity requires the removal of a deaf or obdurate carter who is blocking up one's passage in a narrow lane.

One of my first resolutions is to scrap the tyre pump presented with the

Touring Equipment.—

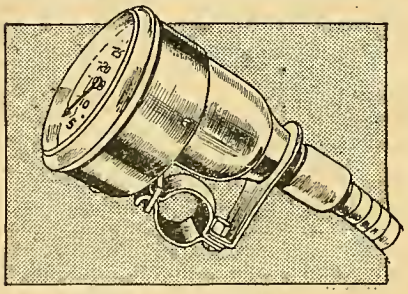


The Garner brass exhaust whistle, showing the convenient position it occupies near the footrest.

machine; in some cases this pump will prove to be of peculiar dimensions. I believe some pumps are made for this purpose exclusively, for nobody outside Bedlam would ever buy them for any more strenuous purpose than inflating a child's toy balloon; but I am pleased to see several makers now give really sound articles. As a man whose tyres are usually on the burst, I always carry a five-shilling pump.

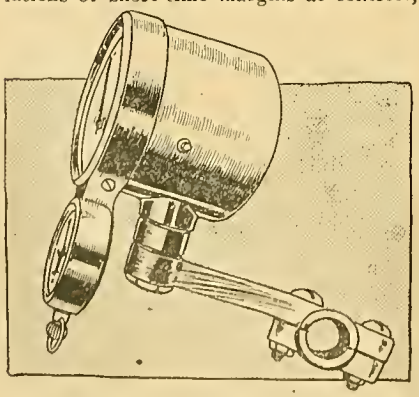
Advantages of Speedometers.

The one luxury I allow myself is a speedometer, which is really almost a



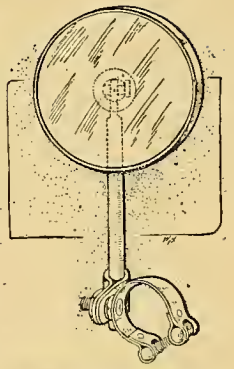
Smith and Son's speedometer and mileage recorder.

necessity. When the road is dull, it provides entertainment; when milestones are missing, it provides information; in reliability trials, it is absolutely indispensable under the horrid modern regulations of short-time margins at controls,



A new Jones combined speedometer and watch, a useful addition to Messrs. Markt and Co.'s range of accessories.

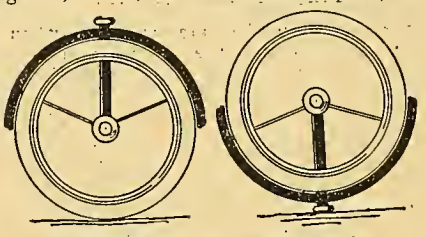
secret or published; but most of all is it invaluable in tuning up. Some riders tell me their trouble is to find a piece of road on which they can test their tunings, for the machine does sixty if they adjust the carburetter. When I am tuning up, I screw the adjustable pulley down to its very smallest diameter, so that the machine cannot possibly exceed perhaps 40 m.p.h.; then any ordinary road provides a good testing ground in the early morning, and at these speeds the machine is easy to hold, and the speedometer readings are exact and legible.



Kerry handle-bar mirror.

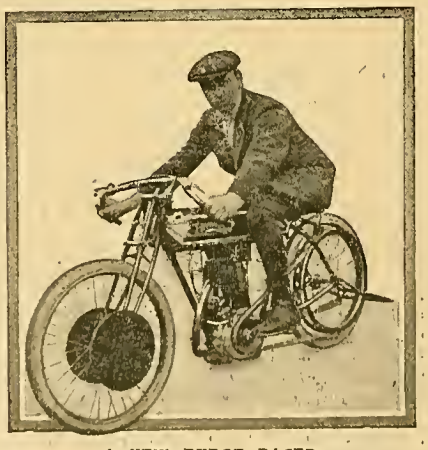
A SIDECAR NOVELTY.

The sketches herewith illustrate a novelty placed on the market by Norman, Ray, East and Co., 36 Woodlands Road, Ilford, E. It is termed the "Stanguard," and, as the name implies, it



The "Stanguard," a name adopted for a combined sidecar stand and mudguard.

forms a combined stand and mudguard (for a sidecar). When in use the guard swings round the wheel and leaves the tyre exposed for repair purposes, and automatically refixes itself when brought to the "running" position. The device is neat, and should have a future for sidecarists.



A NEW RUDGE RACER.

W. F. Guiver, a member of the Brooklands and British Motor Cycle Racing Clubs, and his new Rudge racer built solely for competition work at Brooklands. He will compete at the opening meeting of the B.M.C.R.C. on the 23rd inst.

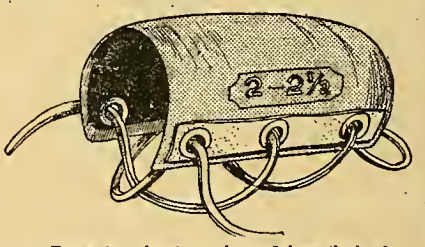
HANDY NIGHT LIGHT.

A neat article is the Sphinx flex jet, which enables repairs to be effected with a great deal of comfort at night, and without removing the gas generator from its bracket. The flexible metallic tubing carries an internal wire which allows it to stand out rigidly and support itself at any angle, and the cap at the generator



A handy portable jet enabling difficult repairs or adjustments to be undertaken at night.

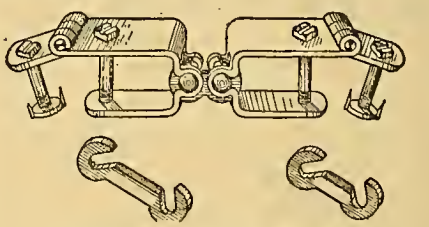
end fits any standard nipple. This naked light permits trivial adjustments to be made without disturbing the lamp. It is advisable to add the caution that the naked light must be kept away from the petrol tank orifices and the carburetter. The flex jet should not be carried loosely in the tool-bag, as, with a small piece of additional rubber tubing pushed on over the burner, it forms a normal connection between the generator and the head lamp, and is thus always ready for use.



Turco tyre hand. A useful method of temporary repair for bad cuts or gashes in covers. It is laced around the rim.

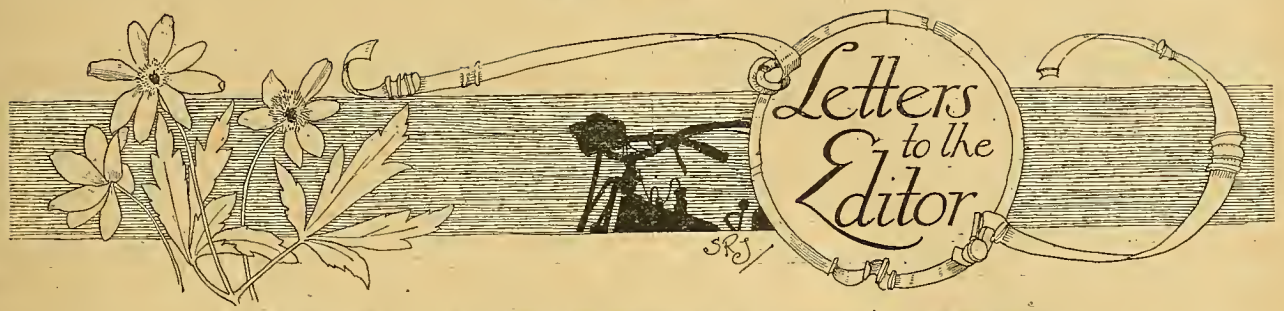
A FLEXIBLE BELT FASTENER.

The detachable and adjustable belt fastener which we illustrate is manufactured by Messrs. Packer and Prentis, Roden Street, Ilford, E. Its chief feature, apart from its detachability and adjust-



The C.Q.R. adjustable belt fastener, with hinged extensions.

ability by means of hooks of different length, is the extra bolt and hinged top plate, which have been introduced to prevent the bolts pulling through. If the plate were merely extended to take an extra bolt without being hinged, it would, of course, destroy the flexibility of the fastener, but, by hinging it and making use of spiked nuts, as illustrated, the flexibility of the fastener is retained. It is sold under the name of the C.Q.R. adjustable belt fastener.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Improvised Variable Pulley Gear.

Sir,—We notice in your correspondence columns on page 246 of March 7th, a letter from one who signs himself "Zedel," suggesting a method of treatment for our pulleys, which we strongly advise your readers not to adopt. We sell this product as a belt pulley, adjustable by hand; and not as a variable gear, to be operated by a kick from the foot, and we should decline to accept responsibility for the failure of any pulley subjected to such abuse.

BLUMFIELD, LIMITED.

Pillion Seats.

Sir,—I should be very glad if Mr. Chas. O. Cox, whose letter was published on March 7th (page 247), would inform us how he and his wife start off, seeing that his machine is fitted with a fixed gear. H. PRITCHARD.

Sir,—Now that the riding season has begun, I have noticed several instances of motor cyclists taking a passenger behind them on the luggage carrier, and it is high time that attention was called to this dangerous practice.

In the first place, luggage carriers are not usually designed to carry the weight of an adult, and in the second place, the back tyres of motor cycles are not strong enough for the purpose.

The number of serious and fatal accidents which occurred last year ought to make riders think twice before carrying a passenger on behind them.

When one thinks of the rider's feelings when the back tyre has burst, with the driving wheel wobbling about, together with his passenger holding on to try and maintain a balance, it is quite easy to see how difficult it is to steer.

G. H. WAIT, M.I.A.E.

Correct Position of Number Plates.

Sir,—At the beginning of the year there was much written in *The Motor Cycle* regarding clean counties, and Cambridge was quoted as being clean. It may be clean as regards traps, but I should like to make it known, through the medium of your valuable paper, how I have recently been treated in the Cambridge Borough Police Court.

Recently, as I was competing in a speed trial organised by the C.U.M.C.C., I stripped my machine and tied my back number plate to my back, the front plate being on the front forks. The police summoned me, and I appeared before the Mayor and one other magistrate, and was fined 10s. with 7s. costs for the purely technical offence of having my number plate on my back. The magistrates, however, were not content with thus heavily mulcting me, but caused my licence, previously clean, to be endorsed with the following words, which I consider do not state my "offence" truly, but exaggerate it grossly: Date of conviction, March 12th, 1912; offence, driving motor cycle without mark; sentence, fined 10s. and costs 7s. G. F. RANDALL.

[We do not think our correspondent can reasonably complain of the treatment meted out to him. The Act says the registration number plate must be attached to the machine front and rear in a vertical position. If he fasten it to his body it can seldom be in a vertical position, and, therefore, not always easily distinguishable. As the licence had to be endorsed, it would have been better to refer to the offence as a contravention of the L.G.B. Order.—ED.]

Hydrogen Peroxide in Acetylene Generators.

Sir,—I notice in *The Motor Cycle* of March 7th, in reply to Mr. A. Renfred Myhill, an article on the above subject. The author would seem to be unacquainted with the elements of chemistry. Three observations I might make. First, is not the oxidisation of hydrogen sulphide to sulphuric acid a questionable matter? Second, how can free sulphuric acid exist in the presence of lime? Chemical action would take place between the acid and lime, and the metal could not be corroded. Third, has not the author altogether forgotten the catalytic effect of the peroxide? KENNETH C. ORR.

Sir,—In view of the articles and letters which have appeared in *The Motor Cycle* for several weeks past, respecting the use of hydrogen peroxide for increasing the luminosity of the acetylene light, it may interest your readers to know that we, some time ago, applied for letters patent, covering the use of sodium perborate for this same purpose. Several of your correspondents have pointed out certain drawbacks attending the use of hydrogen peroxide for the purpose above mentioned. In the first place much has been said as to the instability of hydrogen peroxide, and in this connection we would like to say that hydrogen peroxide is not nearly so unstable a body as appears to be generally believed—at any rate, if the hydrogen peroxide has been properly made. At the same time it cannot be claimed that it can be kept for an indefinite period under all conditions without undergoing some loss of strength, and, of course, the fact of its being a liquid is a disadvantage. Commercial hydrogen peroxide is invariably acid, and, doubtless, as some of your correspondents have pointed out, this is objectionable. Sodium perborate, on the other hand, is quite free from acid, and is perfectly stable, and, being in the form of a dry powder, it is much more convenient to handle and to store than is hydrogen peroxide. Sodium



The Motor Cycle finds its way to all corners of the earth. The snapshot was taken in the far away huts in Northern Nigeria, W. Africa.

perborate contains over ten per cent. of active oxygen, and it is, therefore, about three times the strength of twenty volume hydrogen peroxide. It may, indeed, be regarded as concentrated hydrogen peroxide in a solid form. Perborate, however, as usually met with in commerce, is not very readily soluble in water, but we have overcome this difficulty by modifying the composition of the perborate so that it will readily dissolve in the water which is added to the acetylene generator. Should you, or any of your readers, be desirous of obtaining any further information in regard to this special perborate, we should be pleased to furnish the desired particulars.

B. LAPORTE, LTD.

Military Motor Cyclists.

Sir,—I read the contributions to your valuable paper by "Celeriter" on the subject of the N.A.C.D. with rather mixed feelings. It is only natural that I should do so, as only a year or two back I advocated a formation of motor cyclists under exactly the same conditions, but at that time I was soundly rated and taken to task for my presumption, presumably for thinking of an original and commonsense plan of home defence before our tape-bound officials.

I lay no special claims to occultism, but I could plainly see that the time would come—as it is coming now—when our Government would be glad of men under nearly any conditions.

SCOTT.

M.C.P.A. and Trade-assisted Riders.

Sir,—I have read with interest in *The Motor Cycle* about the formation of the "Motor Cyclists' Progressive Association," and consider that there is plenty of work for it in various directions.

For instance, the association might devote its attention to the trade-assisted amateur. That such a person exists cannot be doubted by anybody who reads the reports of the various competitions and trials this year, one "amateur" having ridden no less than four machines since Christmas in the five following events: London-Exeter, London-Gloucester, Sutton Coldfield, Montanglaust hill climb, and A.C.U. one day trial.

In view of the decision of the Manufacturers' Union not to support the T.T. this year, I hope that the A.C.U. will adopt drastic measures to prevent this unsportsmanlike practice.

J. A. ROCKE.

Licences in Clean Counties.

Sir,—Please insert the enclosed copy of letter in your correspondence columns as a reminder to your readers.

[COPY.] S.V.135.

"To the County Accountant, Bedford.

"Dear Sir,—Enclosed you will find three declaration forms duly filled in, together with a money order to the value of £3. Please issue to each of the persons named therein a motor cycle licence for the year 1912, and forward all three in the enclosed stamped addressed envelope bearing my name.

"In view of the fact that unnecessary police interference and unsportsmanlike traps are both on the increase in London and Surrey, it behoves all motorists residing in these black parts to show their appreciation of the "clean" counties—of which Bedfordshire is one—by forwarding their motor and establishment licences to those who do not use their roads as a means of filling their coffers from the pockets of motorists."

Single-cylinder Class Limits.

Sir,—I note that the Bristol Motor Cycle Club are advertising an open climb for Saturday, April 20th, and their single cylinder touring class is limited to 500 c.c., which excludes several well-known machines.

I should like to point out that during last year many of the best known clubs extended the limit of cubical capacity in their single cylinder touring class to include the machines of several well-known manufacturers who make a single cylinder engine exceeding 500 c.c. The "James" 3½ h.p. engine, 86 × 96 mm., has a cubical capacity of 557 c.c.

It seems only reasonable that clubs, as amateur organisations, should draft their regulations in such a way that owners of any make of machine may compete, and I hope it is only necessary to call attention to this matter for it to be remedied.

Correspondence in the motor cycle press has proved that there are many experienced cyclists who find that the 500 c.c. engine has not a sufficient reserve of power for touring and occasional sidecar work, and in fairness to those manufacturers who are striving to develop the most satisfactory engine for all-round work, such engines should not be barred from competitions.

JAMES CYCLE CO., LTD.,
A. DOUGLAS ARTER, Secretary.

A French View of the Motor Cycle.

Sir,—I read in the number of March 7th an article entitled "A French View of the Motor Cycle"—a reproduction of the naive ideas appearing in an article in the last issue of the T.C.F. journal. Allow me, in the name of the majority of French motor cyclists to protest against this article. Firstly, the author forgets that change-speed gears and variable pulleys first saw the light in England (Gradua, Midget-Bicar, and Rudge). Secondly, that the light motor bicycle as made in France generally has automatic valves, is difficult to start, has pedal bicycle accessories, and is calculated to deter all those who are inclined to try the pastime. On the contrary, all really serious motor cyclists are in favour of greater horse power and reasonable weight—at least 154 lbs. with change-speed gear, etc. The success of the Triumph and New Hudson machines, which are beginning to be seen in Paris, has resulted in no one who has seen one of these English motor bicycles wanting a French one. As to the French voiturettes, not one of them is worth a good sidecar, and, in the opinion of one of the members of the firm X——, are instruments suitable only for lunatics. Would you be good enough to translate this protest and let it appear in your publication, for which I shall be much obliged.

O. DE CARFORT.

Paris.

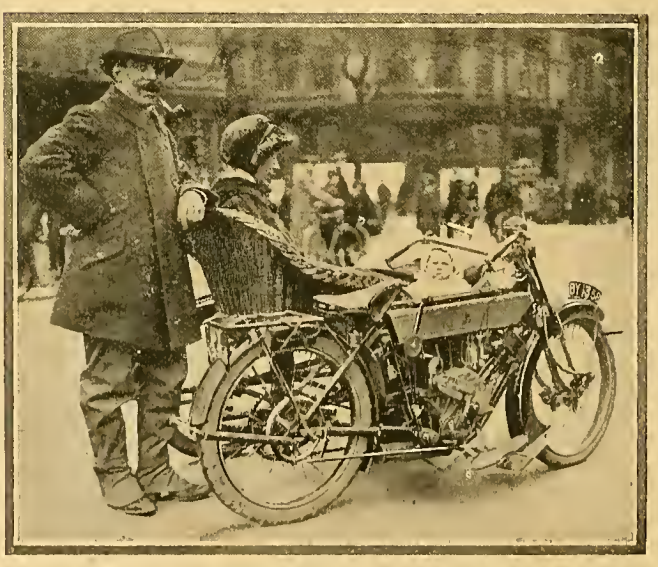
Three and Four Wheeled Cyclecars.

Sir,—Mr. G. J. Allday's contribution to this subject is valuable and of special interest to those of us who have sought a practical solution to the problem of the cyclecar.

As makers of the motor tricycle with two rear wheels, we heartily agree with his conclusions, for his arguments in favour of the four-wheeler may equally be applied to our type of machine, viz.:

(1) Accessibility and interchangeability of tyres.
(2) Rear wheels sharing the weight and driving strain, with consequent prolongation of life to tyres.
(3) Proper road adhesion (with abnormal weight removed from single driving wheel).
(4) Stability.

These advantages are conspicuous in the machine, of which you published an illustration, on March 7th, and which,



THE SIDECAR AS A FAMILY MOTOR.
An owner of a P. and M. sidecar outfit snapped at Tunbridge Wells. It is amusing to observe the tranquil expression of the child in the front of the sidecar.

Harold Townend & Co.,

POLICIES POLICIES

13 & 14, Abchurch Lane, King William St., London, E.C.

Some of the leading Insurance Companies of Great Britain have arranged exclusively for Harold Townend & Co., the following

Comprehensive Motor Cycle Policies.

	INDEMNITIES.
(1) THIRD PARTY RISKS—A complete indemnity against all claims made for personal injuries or damage to property caused by motor cycle, including all Law Costs incurred by or with consent of Insurance Company.	UNLIMITED IN YEAR Up to £250 per accident.
(2) ACCIDENTAL DAMAGE to Motor Cycle and Sidecar, including lamps and rubber tyres when the Motor Cycle is also damaged, but excluding mechanical breakdowns.	Up to value insured.
(3) FIRE, explosion, self-ignition, lighting or acetylene gas, including also accessories and sidecar.	Up to value insured.
(4) BURGLARY, housebreaking, larceny or theft, including also accessories and sidecar if motor cycle also stolen.	Up to value insured.
(5) TRANSIT by road, rail, or inland waterway within Great Britain and Ireland, Channel Islands and Isle of Man.	Up to value insured.
(6) BONUS—If no claim is made 10% is allowed off renewal premium.	

ANNUAL PREMIUMS.

Value of Motor Cycle (including accessories and sidecar if one used.)

Not exceeding		£30	£50	£75
A	Under 3½ h.p.	£2 0 0	£2 2 6	£2 5 0
B	3½ h.p.	2 2 6	2 7 6	2 12 6
C	5 h.p.	2 7 6	2 10 0	2 15 0

Special Notice.—THE ABOVE PREMIUMS INCLUDE USE OF SIDECAR, and are applicable to Motor Cycles used for pleasure purposes, ridden solely by registered owner.

Please Note.—If owner bears first £2 10 0 of each claim the above premiums are reduced by 20 per cent.
" " £5 0 0 " " " " 33⅓ "

ENQUIRY.

Date..... 191...

Please forward me a Proposal Form for Insuring the undermentioned Motor Cycle:

Registered Letter and Number.	Make of Motor Cycle.	If any attachment to Motor Cycle, state in what form.	H.—P.	Present Value, including accessories and attachment (if any).

Name.....

Address.....

.....

If immediate Protection is required, fill in the above particulars and forward with cheque for the premium to HAROLD TOWNEND & CO., 13-14, Abchurch Lane, King William Street, London, E.C., when cover note will be issued pending completion of proposal. Cover also given by wire in case of urgency.

91 37/100 MILES PER HOUR.

Mr. C. R. Collier says :

"Shamrock=Gloria Belts are by far the best."

So are Shamrock=Excelsior Tyres !



26 x 2¼in., per cover **27/-.**



26 x 2¼in., per cover **37/6.**



26 x 2¼in., per cover **52/6**



26 x 2½in., per cover **70/-.**

You ignore Economy, and do not fully enjoy the pastime, unless you use the proved best Belts and Tyres.

Send us your order to-day. All goods supplied from stock.

FULL LIST ON APPLICATION.

THE HANOVER RUBBER COMPANY,

17, Goswell Road, Aldersgate, London, E.C.

ESTABLISHED 50 YEARS.

fitted with a two-seater body, forms a convenient and comfortable runabout. On the other hand, we do not quite agree with Mr. Allday as to a fourth wheel being indispensable, as a three-wheeler of the type above referred to has the following further points in its favour :

(a). Absence of side slip.

(b) Capacity of machine to turn in its own space.

(c) Cheapness and simplicity of working parts (no reverse nor complicated steering gear needed).

(d) Economy of upkeep (not exceeding that of the side-car combination).

(e) Taxed as a motor cycle. A. W. WALL, LTD.

Sir,—In your correspondence columns from time to time appear letters on runabout design, in the majority of cases setting forth the supposed advantages of the four-wheeled design over that of the three-wheeler; these critiques are based on supposed technical reasons, or on experience with the old type of tricar; the writers usually aver they are unbiassed; possibly I am biassed as the result of my experience with the modern three-wheeler. I will give a few practical reasons, not theoretical ones.

I own a three-wheeler with side-by-side seating. There is, contrary to the view expressed generally, plenty of seating room for motoring, but certainly not sufficient for use as a caravan. I don't wish to ape the big car; the petrol consumption is 55 m.p.g.; I can do 55 m.p.h. with two up, climb anything; it has conquered 1 in 3½, is perfectly steady in grease, and, most wonderful of all, will not overturn with one or two up as your correspondents seem to imagine.

Mr. Gilbert J. Allday, in a letter published March 7th, lays down the dictum "that we still have conditions which determine the life of the rear tyre as being, at the best, but a short one"; this is a sweeping statement. I don't know if he has any practical experience of this type. He may be interested to hear that the rear tyre on my runabout, after roughly 1,000 miles running over some of the roughest and hardest roads of the country, combined with hard driving, is hardly in the decrepit condition that he imagines; it is, in fact, hardly marked, the rubbing on the tread has not worn half down at its worst part.

Mr. Allday claims 100 per cent. additional life for the rear tyres of the four-wheeler; that, certainly, is no advantage, as the four-wheeler has 100 per cent. more rear tyres. It has been my unfortunate experience on several occasions to have comparatively new tyres ruined by cuts or bursts; surely there is but half the risk again with half the number of rear tyres.

Mr. Allday certainly much overdraws the squatting in the mud for puncture repairing; would he suggest repairing the punctures on a four-wheeler while sitting in it? Anything that applies to the three-wheeler applies equally to one with four; there are such things as butted tubes.

In conclusion, may I point out that it was a three-wheeler, the A.C., that suggested the idea of the modern runabout; also, notwithstanding the vaunted superiority of the four-wheeler, it has never appeared successfully in any competition promoted for it in this country. The A.C.'s and Morgans have, I think, appeared in every big competition for some time with remarkably successful results.

The reduced weight of the three-wheeler is notorious; its stability is perfect, much more so than the tandem seaters I have tried. My runabout is a Morgan; I have, unfortunately, no interest in it. R.T.A.

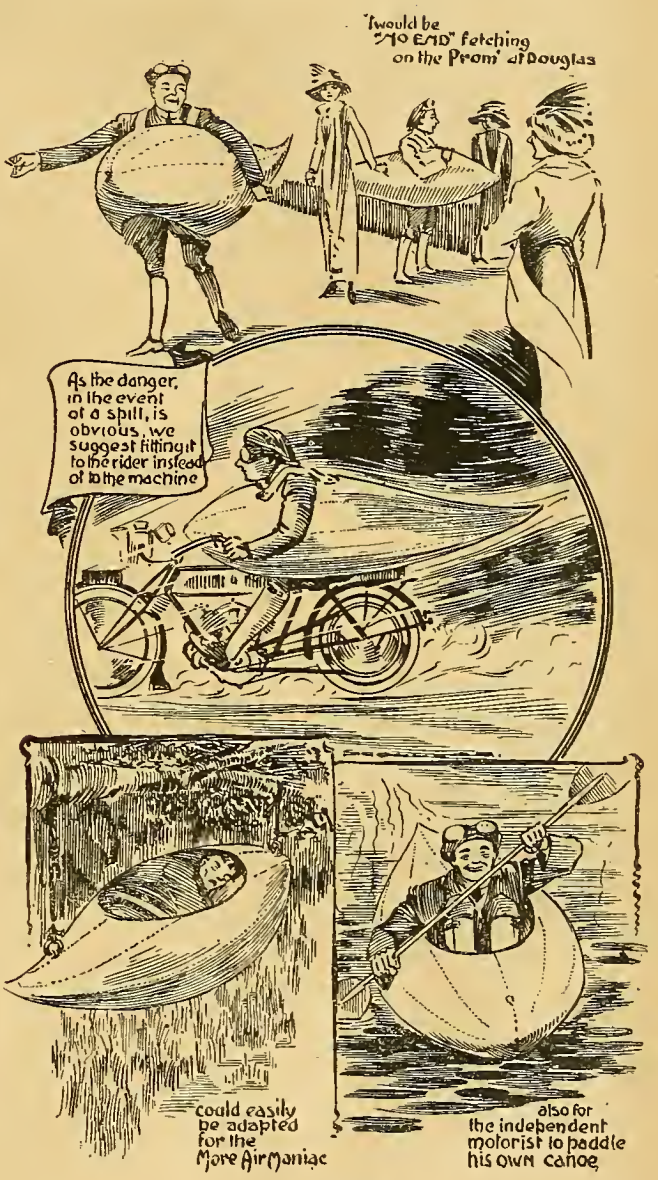
Consumption Comparisons.

Sir,—You certainly raise a subject of great interest in your article on consumption comparisons in your last issue.

The chief reason for the comparatively high petrol consumption of the 3½ h.p. 500 c.c. single-cylinder motor cycle as against the four-cylinder 15 h.p. car is as follows :

The cycle has an engine which, roughly speaking, develops 1 b.h.p. per 100 lbs. weight and the car 1 b.h.p. per 200 lbs., the cycle having just twice the power of the car weight for weight. The cycle is so geared that unless it is climbing a steep hill it is only necessary partly to open the throttle to run at 20 to 30 m.p.h., and the engine is working for the majority of the time under uneconomical conditions. The car engine, on the contrary, would be running on nearly full gas at consequently maximum efficiency.

MORE STREAMLINE NOTIONS.



There is also another advantage for the car. With its four-cylinder engine and even torque a form of transmission can be used which has high efficiency and no slip. The best single-cylinder motor cycle engine has an uneven torque, and consequently a so-called flexible transmission becomes a necessity, this usually taking the form of a V belt which is inefficient, particularly when passed over a small engine pulley.

In my opinion the 500 c.c. engine is too large, and as a standard for solo work, an engine of 350 to 400 c.c. capacity designed to give a steady torque and fitted with an enclosed positive transmission, will in the future, do all that the present 500 c.c. belt-driven machine is capable of under road conditions.

As examples I quote the 2¼ h.p. shaft-driven F.N., which, I believe, can easily average 25 m.p.h. and has a petrol consumption of about 150 m.p.g. and the Douglas which has just achieved such a wonderful result at Montanglaust. The former machine has a shaft-drive and the latter an intermediate positive gear allowing a large pulley to be used for the belt. Both these machines, like the car, have outside flywheels. A.M.I.C.E., A.M.I.E.E.

Sir,—Whilst agreeing that the subject is abstruse, I think that it is not really so mysterious as at first sight may appear.

For instance, a lightweight of, say, 2¾ h.p. that would do 150 miles to the gallon, would be taken as an average. Now compare my average mileage on my 6 h.p. Zenith during 1911—110 miles to the gallon! This is absolute fact. This machine is more than twice the power of the lightweight, and yet it would go about three-quarters the distance that the lightweight would go on the same amount of spirit.

Take the weight of the lightweight as 140 lbs. and the 6 h.p. at 240 lbs., and it will easily be seen that the ton mileage is much greater in the case of the heavyweight.

Then take the case of motor cars, although I fear I may be treading on unfamiliar ground.

I believe that a car of about 10 or 12 h.p. would be doing well if it did thirty miles to the gallon, and yet I have read and heard of cases of 30 and 45 h.p. cars doing over twenty miles to the gallon. All this points to the fact that to gain a certain amount of extra power does not necessitate a corresponding amount of fuel.

It seems to suggest to me that a certain amount of power is lost, and only over a certain point do we get full power from the fuel supplied. Take, for instance, the case of my 6 h.p. Zenith. On one gallon of petrol it was possible for me to go 110 miles; now, if I were able in some way to transform it into a 2¾ lightweight, I could only go a matter of another 40 miles or so, and on this reasoning reduce it still further to, say, 1 h.p., and you may expect to go 200 miles to the gallon.

What I am driving at is that it takes a much greater amount of fuel to develop the initial power; after a certain amount of power is developed, then power is cheaply developed.

As a simile. A waggon standing stationary in the road requires quite an effort to start, and yet when it is moving it requires a comparatively small amount of power to keep it going—even a railway carriage can be kept moving by one or two men, but it would puzzle them to start it.

On the foregoing reasoning it will be gathered that my idea of the whole thing is that the greater the power the less it costs, whether it be motor cycle or motor car.

If you installed an electric plant for driving ten tramcars, and then required to drive 500 cars, you would not have to build a plant fifty times the size.

SYDNEY R. AXFORD.

R.A.C. Warning Signs.

Sir,—I notice from your last issue that the R.A.C. has found it necessary to erect a special sign post at the Midland Railway Company's level crossing on Watling Street.

There is also a very dangerous Midland Railway crossing, although not a level one, on the Bramhall Lane, between Stockport and Bramhall. The condition of this road, for about 100 yards, is such that, if a car goes over it at more than ten miles an hour, it invariably breaks something. I have seen a car lose its silencer going over this small stretch, and many have gone home with broken springs. I often go five miles round to avoid this piece, as it is not even fit to push a good machine over the footway.

There will come a day very shortly when someone will break his front axle and run into the wall. After his death, and the resultant claim for damages, perhaps the road will be repaired.

Look at this road, and you will agree with

CYRIL M. DAVIES.

Necessity is the Mother of Invention.

Sir,—In reply to Mr. J. B. Dall's letter in the last issue of *The Motor Cycle*, I still hold that it is impossible to thaw a generator by holding it close to the silencer when the machine is running on the stand. My experience only dates back for the last nine years, and consists of a 1½ h.p. flat belt F.N., a 2 h.p. chain Humber, a 2¾ h.p. Chater-F.N., a 5½ h.p. Rexette tricar, a 5 h.p. twin Chater Sarolea, a 5 h.p. Bat, and now I use a 1909½ standard Triumph and a 10-12 h.p. Humber car.

With the exception of the 1½ h.p. F.N. and the 2 h.p. Humber, both of which I almost forget by now, any of the above named machines would not emit the exhaust sufficiently warm to thaw the generator, except perhaps after a long run on a sweltering hot day in a summer like we had last year, and then we do not get frost in sufficient amount to freeze our generators.

I have this moment come in from a ten-mile ride on the Triumph, and when I stopped at my house, I verified my statement (that the exhaust when it leaves the silencer was practically cold) by holding my hand close to the exhaust box when the machine was running on the stand, and on another occasion I also verified it with the car.

Perhaps, Mr. Editor, Mr. Dall's machine wants a little doctoring, as its temperature seems up. May I ask how is its pulse? No doubt an aperient mixture to clear out the carbon and soot from the cylinder and silencer would bring its temperature to what I find is normal with my machines.

Thanking you, sir, for the space you have allowed for my letters in my best weekly paper,

(Dr.) SELBY CLARE.

Two-stroke Engines and the A.C.U.

Sir,—In your last issue, I notice that "Fair Play" has opened up a subject of great interest to all riders of two-stroke machines. As he points out not one hill-climb was won by a Scott rider in 1911, I think this will be sufficient proof to the A.C.U. that the special handicap on the Scott is unfair and does not give the rider a chance. All we want is a sporting chance, and when we get that I am sure that the Scott riders will be there. Surely the A.C.U. cannot expect a 3½ h.p. Scott to travel up an incline at a speed about equal to a 5 h.p. Indian; when the average length of a hill is only half a mile the water-cooled machine has not time to show its advantage over an air-cooled engine.

SIR WALTER.

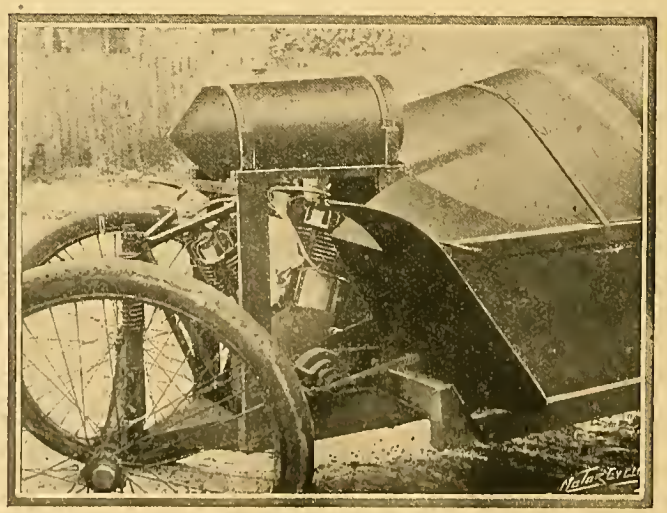
Lancashire Clubs and Competitions.

Sir,—Would it not (considering the number of clubs in this county) be a feasible idea to include one or two open classes in the various club events? In my opinion it would create a good feeling among the clubs, and, being so near together, plenty of assistance would be forthcoming; also the holding of such events would be a good opportunity for getting riders together. A number of inter-club events would probably be held greatly to the enjoyment of members. If two delegates from each club would arrange to meet, I feel sure it would eventually lead to something. If club secretaries would write me (c/o the editor) their views on the matter a meeting could probably be arranged.

R. H. WINTERBOTTOM, trials sec. Burnley A.C.

SUMMARY OF CORRESPONDENCE.

Mr. G. B. Barham, A.M.I.E.E., wishes to thank the driver of the car and the cyclist who so kindly assisted him on the 10th inst.



The Low engine. A feature of this engine is that its remarkable power enables itto give a high road speed for a moderate number of engine revolutions. See page 298.)

THE CIRCUIT DE PARIS.

BY THE A.C.U. DELEGATE.

MY arrival at the Gare du Nord was welcomed with true Gallic hospitality by M. M. Eugène Debailly (President), M. Gaston Buissard (Vice-president of the Auto Cycle Club of France), and M. R. Lecomte (a member of the committee).

The Regulations.

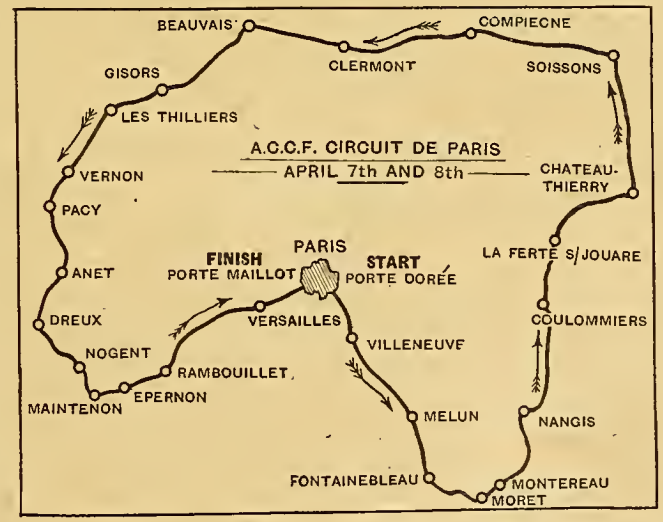
The regulations for the event, which takes place on April 7th and 8th, were discussed at length the same evening at the Café Madrid by Messrs. Debailly, Buissard, Lecomte, Cheilus, Daiur, Compain, C. Plasolles (secretary), and myself. The trial is for motor cycles divided into five classes, arranged according to cylinder capacity, while there is a minimum weight limit, which does not concern English riders, as their machines easily exceed it. Class I., up to 225 c.c.; Class II., single cylinders up to 350 c.c.; Class III., multi-cylinders up to 350 c.c.; Class IV., single cylinders up to 500 c.c.; Class V., multi-cylinders up to 650 c.c.; Class VI., any size engine. Passenger machines: Class I., single cylinders up to 750 c.c. and multi-cylinders up to 1,000 c.c.; Class II., any size engine. Voiturettes: Class I., the same cylinder limits as the above; Class II., for machines with belt transmission and same cylinder limits as above. The weight of passenger and driver must not be less than 150 kgs. (330 lbs.) Any deficiency must be made up by weights.

Cylinders, forks, and frames must be sealed; hubs and crank cases must be stamped. The stamping is microscopic, and does not deface the machine in any way. Tyres must be of standard size. Those fitted to ordinary standard English machines will suffice. Regulation brakes and efficient mudguards must be fitted, and pedals or some description of mechanical starting device. Exhaust pipes and silencers must be fitted so as not to raise dust. Cylinders may not be drilled so as to allow a free exit for the exhaust gases. It will be seen that these rules are not severe, and consequently any standard touring British motor cycle or sidecar combination is eligible.

Now as to the running rules. These are equally easy. The machines are stored in enclosures in charge of an official. Once inside these enclosures nothing of any kind whatsoever may be done to the machine. All replenishments, repairs, or adjustments must be made outside the enclosure during running time. The set speed is nineteen miles an hour, but the going is absolutely free and easy. All that one may *not* do is to leave the route or arrive too early or too late at the controls. If a rider is too early he must wait till his time is up before signing the checking sheet. If he is too late, he loses one mark for each minute behind time. The English rider, therefore, need not be afraid of being bound down by vexatious rules.

The Hill-climb.

There will be a hill-climb at Montanglaust on the old road leading out of Coulommiers. It will, in fact, be a speed trial three kms. in length, of which two kms. are uphill. Performances in this test will not count in the general classification, but will serve to separate competitors in case of a dead heat. Only the difference in time between the first and second men will be published. Entry fees are—non-members 60 francs, amateur members free, trade members 50 francs. Cost of membership to the A.C.C.F.—35, Rue Crussol, Paris—is 20 francs. There will also be an amateur class, cost of entry 10 francs. Amateur entrants will not have the names of their machines published in the official results. Entries close March 31st. Competitors who have lost no marks will be classified according to the results of the Montanglaust speed trial on the formula $\frac{PV + V^3}{C}$. P = weight in kgs. of machine and rider, V = speed in metres per sec., C = cylinder capacity.



The route shown on the accompanying map is a charming one, not too severe, nor too long, but of sufficient difficulty and duration to make it both sporting and interesting.

It has been suggested that competitors should go the whole way by road, and I earnestly hope that the A.C.U. will adopt this suggestion, and send an official to organise the whole trip who could act as interpreter and guide the party as far as the outskirts of Paris. If this idea be adopted, I should suggest that the crossing be made on Good Friday from Newhaven to Dieppe, which entails the shortest road journey, that a stop for the night be made at Gournay-en-Bray or some such convenient place, and an early start be made the next morning for Pontoise, where the officials of the A.C.C.F. would take the English team by the best road to the Porte Maillot, where the sealing of the machines takes place. Thereafter the A.C.C.F. would be our pilots, and conduct us to the Porte Dorée, whence the start is made at 7 a.m. the next day.

The A.C.C.F. will offer a gold medal for the best team performance, one English and the other French, thereby encouraging friendly rivalry between the two countries. Intending entrants should communicate immediately with the secretary of the A.C.U., 89, Pall Mall, S.W.

CURRENT CHAT

TIME TO LIGHT LAMPS.

Mar. 21st	... ...	7.12 p.m.
,, 23rd	... ...	7.15 ,,
,, 25th	... ...	7.19 ,,
,, 27th	... ...	7.22 ,,

Still Climbing!

The next hill-climbing feat by Frank Smith and his Clyno will be an attempt on Tontop, a difficult ascent with eight acute bends ten miles west of Kendal.

Oxford University M.C.C. Hill-climb.

The officials ask us to state that in the all comers' class at the Horsepath hill-climb, Mr. C. P. Symonds (Triumph), though seventh on time, secured second on formula with the figure of merit of 380.

Magnetos.

A number of letters have reached us from readers who have had their 1912 model machines delivered to them with last year's design Bosch magnetos. The explanation is that the new type waterproof magneto was not to be ready for delivery to manufacturers in large quantities until the spring.

M.C.C. Inter-team Competition.

The committee of the Motor Cycling Club have commissioned Mr. F. J. Jenkins, 35, Loveday Road, Ealing, W., to take charge of the inter-team competition for *The Motor Cycle* Challenge Cup. The date of this event is June 15th, and honorary secretaries of motor cycle clubs will shortly receive particulars of the contest and an entry form; in the meantime they would do well to bring the question of competing before their respective committees.

The Circuit de Paris. Latest Arrangements.

A sub-committee, consisting of Messrs. A. J. Moorhouse, W. Cooper, F. A. Hardy, Hal Hill, W. G. MacMinnies, and E. M. P. Boileau (the A.C.U. delegate), recently met and discussed the arrangements regarding the sending of a party of English riders to compete in the above event. Mr. Boileau reported the result of his visit to Paris, and laid before the committee a translation of the rules and a map of the course. It was decided that the party should leave Charing Cross, at 11 a.m. on Friday, April 5th. Those who desired to travel by road should catch the boat leaving Dover at 1 p.m. It was estimated that the cost, including travelling expenses, living expenses, and the cost of transit for the motor bicycle would be about £7 10s. for the three days. The headquarters in Paris would be, it was suggested, the Hotel St. Petersburg. The secretary of the A.C.U. is now in possession of full particulars, and those desiring to take part in this, the first international reliability trial, should send in their names, without delay, to 89, Pall Mall, S.W. It is proposed the party should return to England by the train leaving the Gare du Nord at 9.20 p.m on the Monday.



Trial in South of France.

The Marseilles Motor Club is organising a reliability trial—Marseilles to Nice and back—on Easter Sunday. Total distance, 196 kilometres. The competitors will be divided into four classes.

Class 1.—Engines under 300 c.c.
Class 2.—Under 400 c.c.
Class 3.—Under 500 c.c.
Class 4.—Over 500 c.c

The results will be based on the difference in average speed between each control and over the total distance. Two cups and numerous prizes will be awarded. The entrance fee is 15 francs. and entries should be sent to the Motor Cycle Club of Marseilles, 14, Cours Belzunce Marseilles.

SPRING NUMBER

Touring Equipment.
Testi g Brake Horse-power.
Essex M.C. Hill-climb.
Climbin r Honister Pass.
Buying Second-hand Machines.

M.C.C. Land's End and Back Run.

Competitors in the above run who have not arranged for accommodation should do so at once either at the Central or others hotels in Penzance. We understand the official quarters, the Union Hotel, have all their accommodation booked, and the town is likely to be very full at Easter.

The Motor Cycle in Ceylon.

The pastime in Ceylon is advancing by leaps and bounds, so we understand from a correspondent, who says that for hairpin and S curves the Ceylon roads would be very hard to beat. Many of the up-country roads are a succession of bends and curves every few yards. Riding under such conditions must be exciting, to say the least.

American Motor Cycles in Canada.

It is feared that the price cutting in connection with the sale of American motor cycles in Canada will have some influence on the sale of British made machines. Canada being so close to the American border, buyers are apt to be influenced by American ideas. Up to the present British-made machines have experienced a good run in Canada wherever it is possible to follow the pastime.

Australian Long Distance Record.

When the news was received last week regarding the Australian long distance road record of G. Patterson, jun., the makers of the New Hudson machine were under the impression that he used a 3½ h.p. model. A further cable has since come to hand to the effect that he was riding a 2¾ h.p. with three-speed Armstrong gear, which makes the performance more meritorious.

Motor Cycle Paced Races at Easter.

Following the paragraph in *The Motor Cycle* of February 22nd, the secretary of the S.C.C.U. Meet at Herne Hill on Good Friday was besieged with applications from riders anxious to compete in the four-cornered motor cycle paced match, the ultimate selection being as follows: C. H. Bartlett, Olympic champion; H. H. Lee, winner N.C.U. 100 and S.C.C.U. six hours; S. F. Bailey, Surrey Cup winner; and Mitchell, the holder of all motor cycle paced records from two to twenty miles.

On Easter Monday, at Canning Town, the Eastern Counties Cycling Association is including a series of motor cycle paced matches in their programme, and it is very probable that C. H. Bartlett and S. F. Bailey will ride revenge matches.

Northern League Disbanded.

Official notification has been received by the A.C.U. that the Northern League has been disbanded. It appears as if the Yorkshire clubs are now friendly towards the Union.

English-Dutch Trial.

The following entrants for the above trial have sent their entrance fees, which we have pleasure in acknowledging. Their names are: W. Cooper, G. B. McKechnie, F. C. Wasley, and H. C. Few.

Removal of Central Tramway Standards.

The West Bromwich Town Council, as a direct result of the representations of the R.I.A., has resolved to remove the existing tramway standards from the centre of the High Street, and re-erect them at the side.

Dangers of Honister.

C. R. Collier is reported to have said to his passenger that his climb of Honister was "the maddest thing I have ever attempted," that "the grade is no road," and that if many more attempts were made "there is sure to be a nasty accident."

A.A. and M.U. Scout Prevents Suicide.

An A.A. and M.U. patrol, stationed on the Warwick-Kenilworth Road, recently discovered a man lying in a state of collapse. Finding that it was apparently a case of attempted suicide by taking laudanum, the patrol obtained an emetic of salt and water, and administered it to the man, and afterwards took him to a doctor. The man was charged at the Warwick Police Court on the 7th inst. with attempted suicide, and was committed to the sessions.

R.I.A. Activities.

The Yorkshire (West Riding) Centre of the R.I.A. is devoting special attention to the Ripon and Harrogate Road. Harrogate being one of the largest touring centres in the West Riding, the road is consequently among the most important in the county. Efforts are to be concentrated to obtain an improvement in the large number of narrow bends and dangerous places that at present exist. A special inspection of the whole route was made by the Centre Committee on the 15th inst. A fully detailed scheme will now be formulated and representations made to the proper authorities upon the matter.

The T.T. Race Fund.

It has again been decided to start the Tourist Trophy Race Fund. All motor cyclists are cordially invited to subscribe towards this fund, which already amounts to about £18 17s. 6d. Below is a list of donations to the fund, and other amounts will be acknowledged in these columns as they are received:

	£	s.	d.
H. P. E. Harding	7	0	0
C. H. Hitchen	5	0	0
J. W. F. Tranmer	1	0	0
W. W. Hall		2	6
L. Newton Vigard		5	0
Hugh Gibson		5	0
The Motor Cycle	5	5	0

Further donations should be sent to the secretary of the A.C.U., 89, Pall Mall, S.W.

FUTURE EVENTS

Mar. 23.—B.M.C.R.C. Race Meeting.
„ 23.—Herts. County A.C. Open Quarterly Trial.
„ 30.—Derby and District M.C.C Open Hill-climb.
April 5-8.—N.W. London M.C.C. & Herts. County A.C. Joint Trial and Open Hill-climb (Yorks.) and Ladies' Competition.
„ 8.—Westmorland M.C.C. Open Hill-climb at Brigsteer Brow.
„ 13.—Oxford M.C.C. Hill-climb.
„ 13.—Liverpool A.C.C. Open Reliability Trial.
„ 20.—B.M.C.R.C. Race Meeting.

Bristol Open Hill-climb.

The Bristol B. and M.C. will hold its second annual open hill-climb on April 27th. There are nine events arranged, and a class is specially set apart for amateurs.

B.M.C.R.C. Race Meetings.

Twenty-nine new members were elected at the last committee meeting of the above body. Particulars and entries for the race meeting on Saturday next are given on page 319. The next meeting after this will be on April 20th. The races on this occasion will be a three-lap race for machines up to 500 c.c., a five-lap cyclecar handicap, and a one hour race for all comers, restricted to solo machines.

Next Saturday's Races at Brooklands.

We hear that one or two new engines of great power and embodying novel ideas will probably make their initial bow at Brooklands next Saturday. The cyclecar race will also be full of interest, as it is the first track event in which this class of vehicle will compete. We hope it will be a success.

Auto Carriers Ltd. wish to deny a rumour that has circulated that they were building a special engine for the cyclecar race.

A.C.U. One Day Trial.

It is proposed to hold the annulled A.C.U. one day trial on April 24th, preferably on a course in the Midlands.

Lost at Sea.

A consignment of Singer motor cycles *en route* for Bombay was on board the *Oceana* when she foundered last Saturday.

Herts County A.C. Open Trial.

An open reliability trial will be held on Saturday next. A good entry has been received, and the course, with slight alterations, will be the same as that used by the club on the occasion of its last reliability trials. The start will take place at 10 a.m. from the Salisbury Arms Hotel, Barnet, the length of the course being 100 miles.

Night Trial Results.

The results of the night trial held by the Purley and District M.C.C. on the 9th inst. are: 1, D. S. Ainger (1908 Triumph), Ralph Cole's Challenge Cup and silver medal; 2, R. Charlesworth (3½ Zenith sc.), medal; 3, E. J. Webster (8 Matchless sc.). E. M. Oliver (2¾ Humber) and W. G. Fowler (Rudge) were disqualified on technical grounds; the former made best score, and the latter would have taken third prize.

Abolition of Toll Bars.

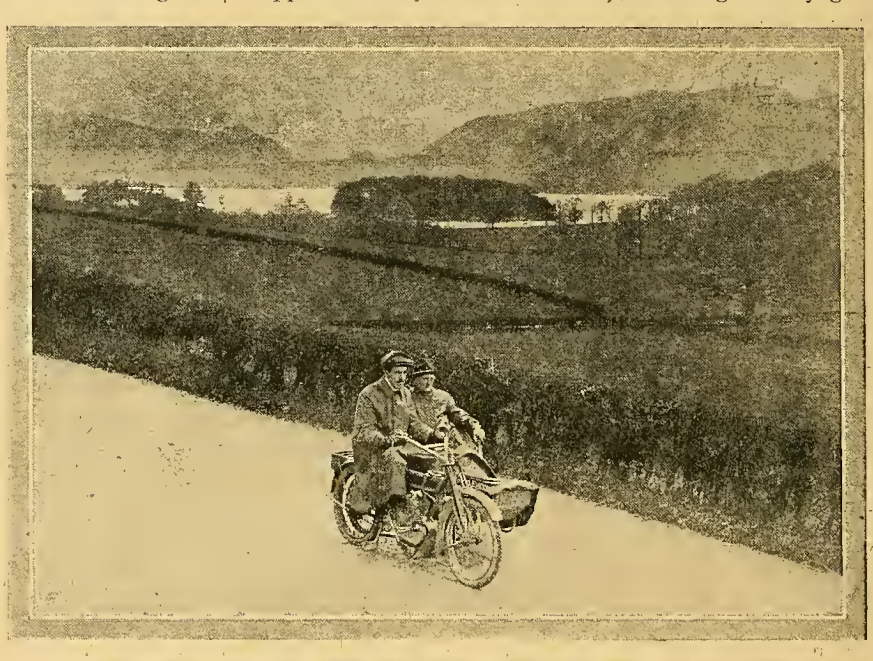
We are informed, on absolutely reliable authority, that negotiations are being carried on between the Middlesbrough Corporation and the owners of the toll bars, which still exist in the Middlesbrough district, for the abolition of these relics of the past, and that in a very short time all five toll bars will cease to interfere with traffic on the roads. Middlesbrough is in an unenviable position, for on all the roads out of one side of the town there are toll bars—five in number—whilst on the road to South Bank, a distance of under three miles and one of the worst roads in the country, there are no less than three.



General view of the assembly at the foot of Aston Hill for the Essex M.C. Hill-climb last Saturday.

ANOTHER CLIMB UP HONISTER PASS.

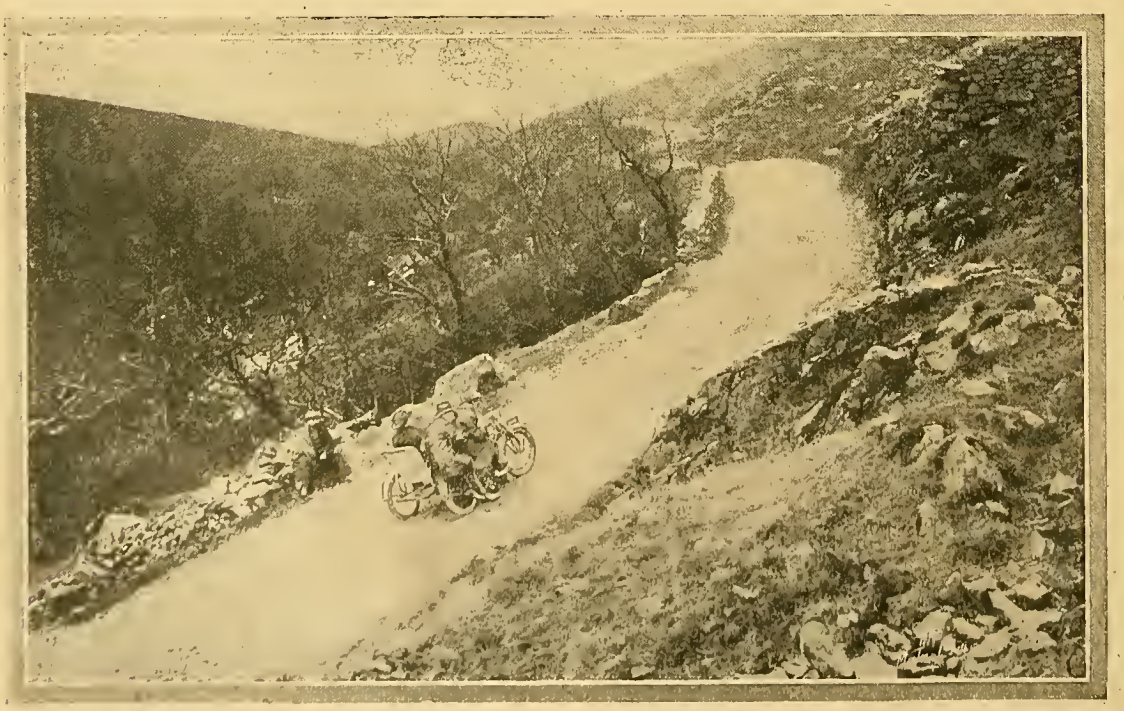
ON Saturday last, C. R. Collier arranged to make an attempt on Honister Pass with a standard 8 h.p. Matchless and sidecar. Accordingly the Cumberland County M.C.C. made arrangements similar to those made for Frank Smith when he performed the wonderful feat of climbing the pass with his Clyno and sidecar with passenger on the 9th inst. The club are always glad to welcome to the hills and dales their comrades from the South and Midlands. Having assembled at Quirk's Garage at 2.30 p.m. and met C. R. Collier on his 8 h.p. Matchless and sidecar, the party then rode out to Honister, where the most remarkable epoch in the history of that remote region was completed.



C. R. Collier leaving Keswick for Honister Pass, which he successfully climbed with a passenger from the steepest (Buttermere) side from Gatesgarth.

The Descent.

At the top of the pass we met many more members of the Cumberland and Westmorland Clubs who were anxiously waiting in the mountain rain for our arrival. C. R. Collier descended the pass with F. S. Whitworth as passenger, and I followed on my machine to start them from Gatesgarth, the bottom of the pass. We skidded and rolled from side to side until eventually we reached the starting point. The members waiting on Hill Step in the meantime examined the state of the road, and considered it to be in normal condition, and the opinion was expressed that the machine would stick fast when it got its wheels into the loose shale. However, for the moment this was forgotten as a speck appeared away down the valley, which gradually got nearer and resolved itself into the Matchless, C. R. Collier, and his 11 stone passenger. Quickly they drew nearer until it was observed that their speed was abnormal for such a road. They travelled up the



C. R. Collier (8 h.p. twin Matchless sidecar) ascending Honister Pass by the old road from Borrowdale with three up. The two passengers are members of the Cumberland County M.C.C.

Another Climb up Honister Pass.—

pass at a speed verging on 20 m.p.h., swerving from side to side with the front wheel often at an acute angle from the line of direction. At the bridge about 300 yards below Hill Step the bottom gear was engaged, and the pace slackened to about 14 m.p.h. Could the road possibly be held at this pace? was the question on everyone's lips. Nearer came the machine, swerving and rolling, with the passenger performing wonderful balancing effects until the loose shale was encountered. Through this it ploughed from first the inside of the road to the outside, where yawns an unguarded drop of 100 feet over a precipice to the stream below.

Showers of Stones.

Upwards still it rushed, and after a moment of tense excitement Hill Step was reached. Round flew the driving wheel in the deep shale, and showers of stones scattered upwards and outwards in all directions, the speed alone carrying the machine and its load over the awful loose surface. Once over the Step the machine leaped forward, and the spectators yelled themselves hoarse. From there to the top of the pass the pace was accelerated and all went well, and a marvellous climb was accomplished. Collier then returned to Hill Step to examine the scene of his exploit.

I understand that the machine used was a standard one, which had recently been sold to a private individual. The gears, verified by the Cumberland Club, were 5 to 1 and 9⅞ to 1. The conditions throughout were most unfavourable, as it rained in real Lakeland fashion. Yet Collier, surely the impersonation of coolness and *sangfroid*, rushed up the pass at a pace simply frightful and nerve shattering to onlookers.

The old road on the Borrowdale side was then visited, and, starting from Seatoller, Collier invited two passengers to accompany him. These two were G. N. Gilbanks and J. Wallace-Moffet (Carlisle). Moffet took the carrier seat, and got a bumping such as he hopes he will never receive again. However, away the machine sped with its load and successfully reached the summit, and this performance, we think, must vie in interest and difficulty with that recorded on the Buttermere side.—W. B. LITTLE, Captain Cumberland County M.C.C.

THE MOTOR CYCLISTS' PROGRESSIVE ASSOCIATION.

AS mentioned in our issue of last week, the M.C.P.A. carried the day at the A.C.U. private members' meeting. That body, however, is not going to stop short at this point. It has other and more important work to do, and it means to do it. Very soon, if we mistake not, the M.C.P.A. will prove its worth and the effect of its efforts will very shortly be evident.

The *fiasco* of the one-day trial shows that there is much need of reform in the A.C.U., and here is a chance for the new committee. Why should it not appoint a permanent committee of management consisting of the principal officers of the Union, to whom the staff is directly responsible? These would form a small body of picked men of the A.C.U. who would meet together at frequent intervals and watch the interests of the Union week by week.

The Competitions Committee has done good work in the past, but in our opinion it has not gone far enough. It has worked out the outline of various trials and competitions, but has left the actual carrying out of these too much to the staff. Now on future occasions, we suggest, those of the Competitions Committee who can officiate during these trials, or who can keep in touch with them from their inception to their completion, should be absolutely responsible for their being successfully run.

The M.C.P.A. has been formed at a time when its services are badly needed. Its method of action is to be heartily approved, since, unlike other people who are not strong enough to effect reforms from within, who have separated from their parent body and have either founded a rival organisation or have ploughed the lonely furrow, the members of the M.C.P.A. have set to work to put their own house in order, and, unless we be mistaken, its chambers will be swept and garnished and its whole organisation reformed before many weeks be past.

That urgent and complete reform is needed is only too well apparent, but, unless we misjudge them, the new committee will stand no nonsense and will let nothing hinder the progress of reform. Moreover, the newly-elected body has good leaders, and good leaders are essential to a conquering army.



Start of the Hull and E.R.A.C.C. 100 Miles Non-stop Reliability Trial held last Saturday. **(See page 320.)**

M.C.C. LAND'S END AND BACK RUN.

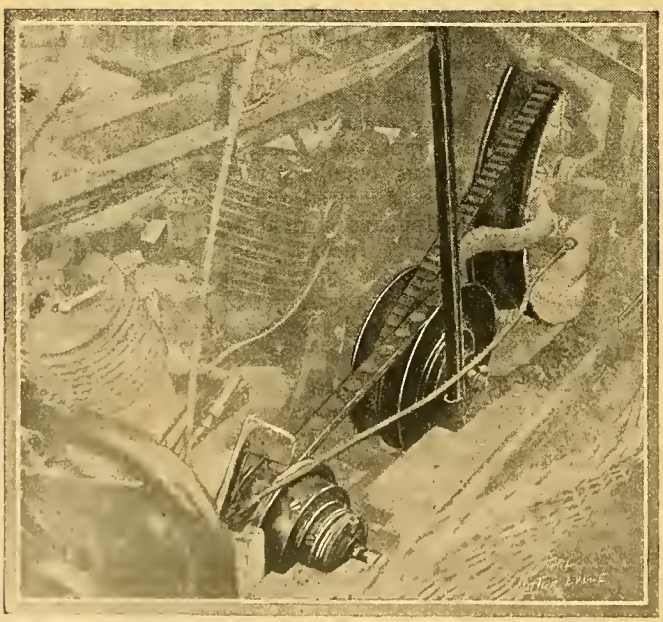
The following additional entries have been received for the M.C.C. Land's End and back run, which will take place on April 6th-8th:

F. S. Procter (7 Indian sc.)
P. W. Moffat (2¾ Douglas)
H. R. Whitmore (3½ Rudge)
A. M. C. Scott (3½ Triumph)
S. F. Garrett (3½ Premier)
G. Boswell (3½ Ariel)
E. A. Babington (6 Bat)
H. C. Mills (3½ Premier)
H. Gibson (3½ Bradbury sc.)
C. Q. Roberts (3½ Rover)
J. Robertson Brown (——)
F. W. Ehlvers (3½ Triumph)
R. C. Davis (——)
H. G. Slingo (5-6 Clyno sc.)
N. O. Soresby (3½ Rudge)
G. L. Fletcher (2¾ Douglas)
P. Tippett (3½ Humber).

Entries at single fees close to-morrow, the 22nd, to Mr. Edwin Gwynne, White Lodge, Crediton Road, West Hampstead.

A SIMPLE VARIABLE GEAR.

MR. J. S. TRITTON, of the National Physical Laboratory, Teddington, has invented a simple form of variable gear, which he has, we understand, provisionally protected. It is fitted to a belt driven 1910 5-6 h.p. Clyno sidecar machine. Not that Mr. Tritton is a believer in belt drive on passenger carrying motor cycles, but he has wisely fitted it to his own mount so as to give it as severe a test as possible. The gear is known as the "Differo," as it depends on the differential action between two belts for its working. The gear itself is extremely simple. A bracket is carried under the motor cycle bottom bracket which supports a spindle on which the expanding pulley is pivoted. On the pulley shaft midway between the two outer flanges is a flange capable of sliding laterally thereon along a feather. If the pulley be pushed forward by means of the gear lever the one belt sinks down and the other rises and the gear



J. S. Tritton's Differo gear, showing expanding pulley on counter-shaft and operating lever.

ratio is lowered, if it be pulled back a higher gear is obtained. The spindle on which the gear is pivoted has a helicoidal groove cut in it in which a pin running through its bearing engages. This allows the whole gear to have a slight lateral movement, just sufficient, in fact, to ensure perfect alignment of the belts, as the gear is pushed forward or backward by means of the control lever. In actual practice the gear works admirably. The control lever works easily, and only one short movement is required to come down from the highest to the lowest gear, consequently no time is lost if a sudden change down be required. Any belt stretch is taken up by the two belts equally, and as the belts are always in line the wear on them is decreased.

DUBLIN & DISTRICT HILL-CLIMB.

This competition took place on the 18th inst. (Bank Holiday) on a hill leading off the Blessington Road, which owing to its bad surface proved rather severe for the low and medium powered machines. Results:

CLASS A.—Under 340 c.c.

J. P. Guinn (2¾ Douglas) failed.

CLASS B.—Under 520 c.c.

Rider and machine.	Time.	Formula.
T. E. Green (3½ Rudge) ...	1m. 29⅕s. ...	126.81
J. Healy (3½ Rudge) ...	1m. 31⅖s. ...	114.58
J. I. Harvey (3½ Rudge) ...	1m. 37⅕s. ...	145.21
R. H. Taaffe (3½ Triumph)...	1m. 42⅖s. ...	149.18

CLASS C.—Exceeding 520 c.c.

B. B. Harvey (8 Bat) ...	1m. 17⅕s. ...	204.6
C. B. Franklin (5 Indian)...	1m. 23⅗s. ...	139.4
T. J. Dumphy (7 Indian)...	1m. 54⅖s. ...	307.9

IRISH MOTOR CYCLE UNION.

The Ulster and Dublin centres of the Motor Cycle Union of Ireland met, in conference, at Dundalk, on Saturday evening, to discuss matters relating to the Union. Mr. R. G. Lindsay, the president of the Ulster centre, presided, and Mr. R. McCann acted as secretary of the conference. It was decided to revive the annual inter-city contest between Dublin and Belfast, but on lines somewhat different from previous events. It is to take the form of a reliability trial between the two cities. The date of the event was fixed for Saturday, June 1st, to start from Belfast.

SIX DAYS' SIDECAR RIDE.

A. Butler, whose photograph recently appeared in these pages with sidecar carrying papers for the *Sportsman* to Gloucester, has recently accomplished a six days' ride on a 3½ h.p. A.S.L.-Precision motor cycle and Comfy sidecar, thereby creating a record, beating the previous distance ridden by Oliphant on a Premier by 113 miles. Before starting, Mr. Butler's machine was sealed by *The Motor Cycle*, and he established his distances by sending us his checking book, in which the accomplishment of each section is witnessed and the time booked by various people, such as newspaper publishers, motor agents, policemen, etc. He also sent postcards day by day to our offices, and of these thirty-nine were received from different places on the road. Mr. Butler claims to have made his ride of 1,459 under the legal limit. His machine was a 3½ h.p. A.S.L. fitted with Precision engine, U.H. magneto, Amac carburetter, Rom tyres, Stanley belt, L.M. plugs and F.R.S. lamp.

HILL-CLIMB IN S. AUSTRALIA.

THE annual hill-climbing contests of the Motor Cycle Club of South Australia were held on Greenhill Road on February 10th. There was great enthusiasm amongst the members, and the hill, which is 4 miles 148 yards long, was lined with spectators. G. Patterson, jun., who is touring the world partly for pleasure and partly to demonstrate New Hudson motor cycles, gained first place on formula in the open event. There were three contests, the first open to all members, second open to amateurs only, and third passenger class. The first two events were decided on formula and the passenger class on fastest time, the combined weight of driver and passenger to be not less than 20 stones. The grade of the hill varies from 1 in 8 to 1 in 25, average 1 in 14. The results were as follow:

OPEN CONTEST.

	Weight. lbs.	Time. m. s.	Points on formula
1. G. Patterson, jun. (2¾ New Hudson)	324	8 46	401
2. N. K. Torode (3½ Triumph)	363	7 28	362
3. A. Carnell (3½ w.c. Lewis)	366	7 56	324
*H. H. Ragless (3½ Triumph) ...	320	7 26⅗	321

*Fastest time.

AMATEUR EVENT.

1. H. W. Crowle (3½ Triumph) ...	318	8 23⅖	252
2. C. R. Churchward (3½ w.c. Lewis) ...	386	9 19	247
3. R. Barr Smith, jun. (7 Indian) ...	363	8 44	232

PASSENGER CLASS.

1. A. E. Young (3½ w.c. Lewis sidecar)	15m. 10s.
2. W. Sampson (7 Peugeot forecar)	17m. 15s.

THE ESSEX M.C. OPEN HILL-CLIMB.



F. W. Barnes (8 h.p. Zenith and sidecar) passing the timekeeper at the foot of the hill.

ESSEX boasts no hills worthy of the name, so the Essex Motor Club had perforce to search other counties for a suitable gradient on which the powers that be would allow a hill-climbing competition. Our dear old friend Aston Hill, near Tring, was found, and so well was the secret of the venue of the competition kept that not a single competitor made the ascent before the event was run off. It had rained very heavily in the night, and those who journeyed to Tring by road found patches of grease at frequent intervals, and soft, rutty places, which rendered the going far from pleasant.

Thanks to the courtesy of Cass's Motor Mart, Warren Street, Tottenham Court Road, we were enabled to reach the scene of the competition on a 4 h.p. three-speed Quadrant, which took every hill with a vigour that was altogether enjoyable, and ran as smoothly as the most blasé connoisseur could wish. The car class was down first on the programme, but, owing to the fact that the heavier vehicles might cut up the road, the motor cycle passenger class and the remaining motor cycle classes were run off first. The surface of the hill was in good condition, save for the ruts which are always to be found thereon. The passenger class for machines not exceeding 1,000 c.c. was thrown open to cyclecars, but none of these vehicles were entered.

Passenger Class.

Barnes made the most sensational performance in this section of the event, while Applebee, on the Scott, and W. Pratt did extremely well. The results in this class were decided on A.C.U. formula:

	Rider and machine.	Time.	Fig of merit.
1.	F. W. Barnes (6 Zenith and sc.) ...	1m. 7⅕s. ...	78.6
2.	W. Pratt (3½ P. and M. and sc.) ...	1m. 39⅕s. ...	96.5
3.	D. S. Kapadia (8 Rex-Jap and sc.)	1m. 27⅖s. ...	126
4.	F. A. Applebee (3¾ Scott and sc.) ...	2m. 13⅘s. ...	127
5.	B. A. Hill (7 Indian and sc.) ...	1m. 20⅗s. ...	130

Hill had the bad luck to lose valuable time at the summit through a slipping clutch.

CLASS A.—For machines not exceeding 275 c.c.

The honours for this class fell to the S.I.A.M.T., the new Italian lightweight which made its *début* at the last Show, since it gained first and third places. Holloway (Premier), of whom more will be heard later, also put up a good performance. Results:

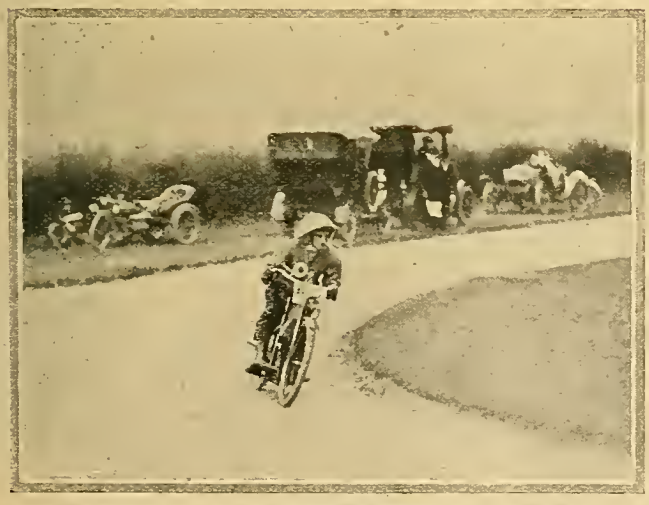
1.	C. R. Marshall (2¼ S.I.A.M.T.) ...	1m. 3s.
2.	R. Holloway (2½ Premier) ...	1m. 9s.
3.	F. C. Scales (2¼ S.I.A.M.T.) ...	1m. 14⅗s.
4.	N. D. Slatter (2 Alcyon) ...	1m. 15⅕s.
5.	Lieut. R. H. K. Hope, R.N. (2½ Levis)	1m. 36⅘s.
6.	F. W. Applebee (2 Centaur) ...	1m. 38⅗s.

CLASS B.—For machines not exceeding 350 c.c.

Zeniths, it will be seen, distinguished themselves in this class, as Weatherilt carried off the gold medal. Mundy, who took second place, rode an absolutely standard machine with lamp, pedals, and upturned handle-bars. Results:

1.	P. Weatherilt (2¾ Zenith) ...	1m. 4s.
2.	R. G. Mundy (2½ Singer) ...	1m. 6s.
	*W. Bashall (2¾ Humber) ...	1m. 6⅗s.
3.	W. A. Jacobs (2½ Singer) ...	1m. 7⅘s.
4.	J. P. Legrand (2½ Singer) ...	1m. 9⅕s.
5.	H. C. Newman (2½ Ivy-Precision) ...	1m. 11⅘s.
	*A. Bashall (2¾ Humber) ...	1m. 13⅗s.
6.	F. E. Pither (2¼ Humber) ...	1m. 14⅖s.
7.	F. W Applebee (2¾ Centaur) ...	1m. 15⅘s.
8.	G. L. Fletcher (2¾ Douglas) ...	1m. 16⅘s.
9.	N. D. Slatter (2 Alcyon) ...	1m. 17⅖s.
10.	C. Pearson (2¾ Douglas) ...	1m. 24⅗s.
11.	F. C. Dear (2¾ Douglas) ...	1m. 25⅘s.
12.	J. S. Holroyd (2½ Motosacoche) ...	1m. 33s.
13.	W. Aslen (2½ Grandex) ...	1m. 40s.
14.	C. S. Franklin (2½ Singer) ...	1m. 43⅖s.
15.	Miss Hammett (2¾ Douglas) ...	1m. 53⅖s.
16.	T. E. Sear (2½ Motosacoche) ...	1m. 55⅘s.

*Signifies disqualified for excessive noise.



Miss Hammett the only lady competitor, taking the first corner on her 2¾ h.p. Douglas.

Disqualified for Noise.

It is a pity that certain machines had to be disqualified through noise, especially in cases where they did well, viz., the Bashalls' Humbers, which made splendid ascents, and Elce's Rudge in the class with which we are about to deal, but it is the only way in which pressure may be brought to bear upon the manufacturers to pay more attention to silencing.

CLASS C.—For machines up to 500 c.c.

In this class there were some interesting and exciting incidents. Holloway was impeded on his first attempt, but on his second try he roared up to the summit in splendid



W. Cooper starting E. H. Lee (5 h.p. Indian).

form, sitting his Premier as if it were part of him, and taking the top corner in a manner which evoked murmurs of approval on all sides. Cook and Gray, mounted on Rudges, both swerved in the ruts; B. Patterson (Brown) pulled up abruptly in the middle of a good ascent through a fouled plug or choked carburetter; South, another Rudge rider, switched off as he took the curves; Graham Dixon, on a single-speed New Hudson, took his corners particularly well. Oliphant (Premier) rode without a contact breaker cover, and was brought to a standstill at the first bend through the ring on which the cams are fixed coming off. Oldman (Bat) appeared to suffer from too high a gear and came up slowly. Result:

1.	R. Holloway (3½ Premier)	0m. 49⅗s.
	*W. H. Elce (3½ Rudge)	0m. 54⅘s.
2.	H. C. Newman (3½ Ivy-Precision)	0m. 55⅗s.
3.	H. G. Dixon (3½ New Hudson) ...	0m. 55⅘s.
4.	S. R. Cook (3½ Rudge)	0m. 56⅖s.
	*Vernon Taylor (3½ Rudge)	0m. 57s.
5.	G. T. Gray (3½ Rudge)	0m. 58⅖s.
6.	H. V. Smytheman (3½ Ivy-Precision)	0m. 59⅖s.
	T. Weatherilt (3½ Zenith)	0m. 59⅖s.
8.	W. D. South (3½ Rudge)	1m. 0⅕s.
9.	G. Griffith (3½ Rudge)	1m. 1s.
10.	H. E. Parker (3½ N.L.G.)	1m. 2⅗s.
11.	W. O. Oldman (4 Bat)	1m. 3s.
12.	F. A. McNab (3½ Trump-Jap) ...	1m. 5⅘s.
13.	G. L. Fletcher (2¾ Douglas) ...	1m. 16s.
14.	E. Gwynne (3½ Rudge)	1m. 18s.

CLASS D.—For machines not exceeding 750 c.c.

Barnes again proved the worth of the Zenith-Gradua, and made a splendid ascent. Lees made a picturesque climb with one legging half detached and flying out in the wind. Newman came up well wearing a weird headgear. Result:

1.	F. W. Barnes (6 Zenith)	0m. 50⅖s.
2.	R. Holloway (3½ Premier)	0m. 52⅗s.
3.	H. C. Newman (3½ Ivy-Precision)	0m. 53⅕s.
4.	H. G. Dixon (3½ New Hudson) ...	0m. 53⅘s.
5.	V. Taylor (3½ Rudge)	0m. 54⅕s.
6.	W. D. South (3½ Rudge)	0m. 55⅖s.
7.	E. H. Lees (5 Indian)	0m. 56⅗s.
8.	H. V. Smytheman (3½ Ivy-Precision)	0m. 58⅕s.
9.	E. Gwynne	1m. 18s.

CLASS E.—For machines up to 1,000 c.c.

This provided one or two exciting incidents. Moorhouse took the second bend rather too close in and then pulled up suddenly with a broken chain. Hal Hill's rear tyre, which had previously given trouble, collapsed at the second corner, sending him all over the road. But clever manipulation saved a nasty spill. Barnes and B. A. Hill both made splendid ascents and rode in fine form. Results:

1.	B. A. Hill (7 Indian)	0m. 48s.
2.	F. W. Barnes (8 Zenith)	0m. 48⅕s.
3.	E. H. Lees (5 Indian)	0m. 54⅖s.
4.	H. G. Dixon (3½ New Hudson) ...	0m. 54⅘s.
5.	D. S. Kapadia (8 Rex-Jap)	1m. 7⅕s.
6.	E. Gwynne (3½ Rudge)	1m. 10⅕s.

Excellent Organisation.

The classes were run off promptly, thanks to the excellent offices of Mr. W. Cooper, who officiated at the start. Mr. R. Selz did excellent work in working out the formulæ, Messrs. J Salmon, W. Whittal, and Andrews were invaluable as marshals, while Mr. J. A. Macdonald worked hard at the scales at Boxmoor Station. Mr. E. J. Bass acted as hon. organising secretary, Messrs. A. G. Reynolds and J. W. G. Brooker acted as judges, Mr. A. V. Ebblewhite took the times at the foot, and Mr. J. H. Burley officiated in a similar capacity at the summit. A report of the car class will appear in next Friday's *Autocar*.

In each class a gold medal was awarded to the first competitor and a silver to the second, while in some classes medals were given for members and novices as well. The prize list, therefore, is a remarkably large one.

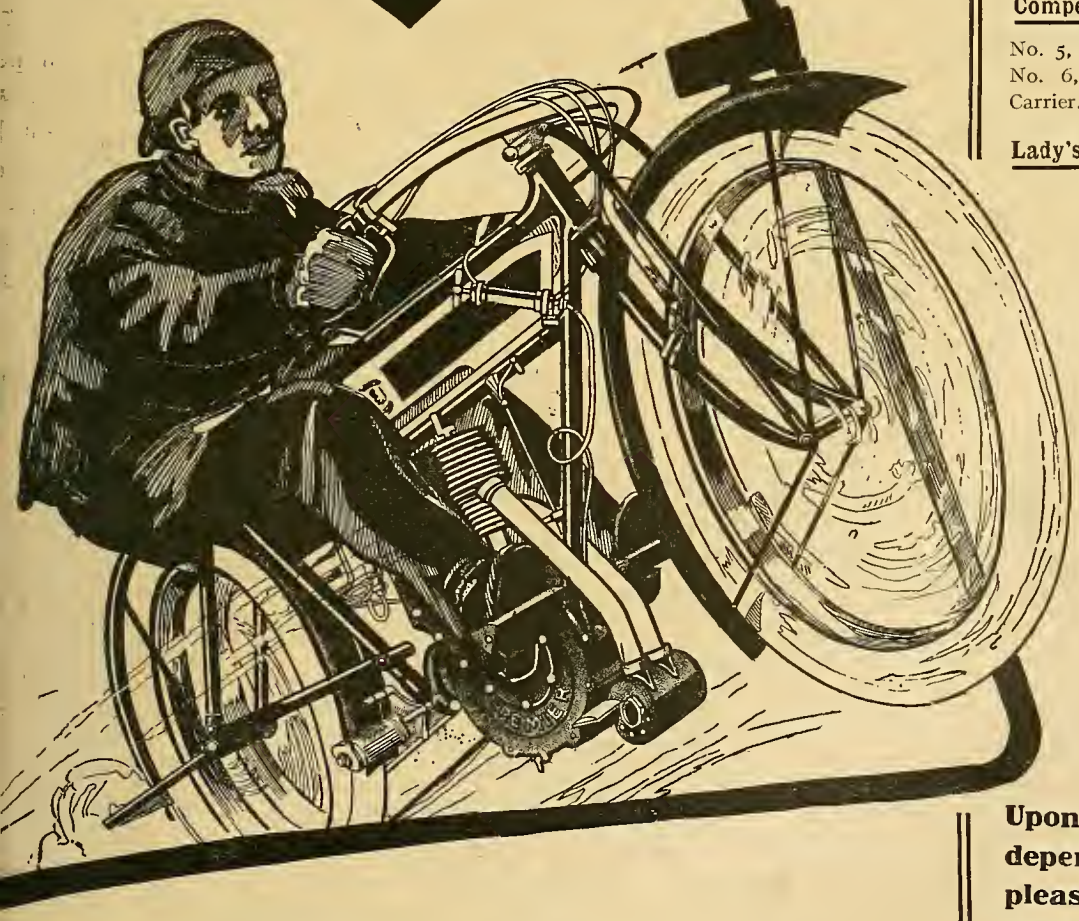
The Leicestershire Centre of the R.I.A. are arranging a practical demonstration on April 22nd, to be attended by motor cyclists and other road users, of the greatly reduced risk of accident that would accrue if all other forms of road traffic would, upon their own initiative, carry reflex rear lights. Road users are invited to attend, and the hon. sec. to the centre (Mr. S. C. Winks, 3, Sweetbriar Road, Leicester) will gladly forward further details.



W. Pratt (3½ h.p. P. & M. and sidecar) making a good ascent.

MIER

ORIGINALITY and DEPENDABILITY



1912 Models.

3½ h.p. Type.

Standard Tourist, **£47 10s.**
Extras: £7 7s. for Premier Free Engine Clutch. £10 10s. for Armstrong 3-speed or Millennium 2-speed gears.

Competition Models.

No. 5, with dropped bars.
No. 6, with flat bars and Carrier. **£47 10s.**

Lady's Model.

With Premier Free Engine Clutch, £60, and £63 with Armstrong 3-speed gear.

2½ h.p. Type.
Standard Model,
£36.
Extras: Premier Free Engine Clutch, £7 7s.,
Armstrong 3-speed,
£10 10s.

3¼ h.p. Type.
Standard Model,
£52 10s.
Extras
as 3½ h.p. Type.

Upon your choice depends a season's pleasure—take no risks—buy a Premier

"Motor Cycling at its Best"—*Vide Daily Press.*

In answering this advertisement it is desirable to mention "The Motor Cycle"

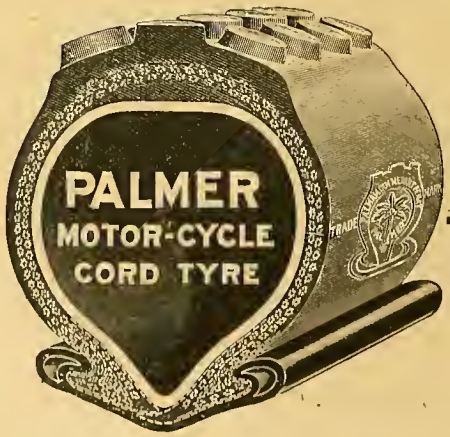
HONISTER PASS CLIMB

like all other severe trials necessitated the use of the most reliable of all tyres.

PALMER CORD MOTOR CYCLE TYRES

were fitted to Mr. F. Smith's 5-6 h.p. twin Clyno and sidecar which is the first and only motor cycle with passenger to successfully climb Honister Pass. PALMER CORD MOTOR CYCLE TYRES, like the famous Cord Motor Tyres, come through the severest tests with flying colours.

Send for Price List of the three grades of Palmer Motor Cycle Tyres and Privateer Tyres.



The Palmer Tyre, Ltd.,
119, 121, 123,
Shaftesbury Avenue, W.C.

Motor Cycle Tyre Dept.:
103, St. John St., Clerkenwell,
London, E.C.

In answering this advertisement it is desirable to mention "The Motor Cycle."

B.M.C.R.C. MEETING.

The following entries have been received for the Spring meeting of the B.M.C.R.C., at Brooklands, on Saturday next, the 23rd inst. The first race will start at 1 p.m. :

1 P.M.—THE THREE-LAP SIDECAR SCRATCH RACE.

T. A. Carter (2 Matchless)	C. R. Collier (2 Matchless)
J. T. Bashall (2 Bat-Jap)	C. F. Hunter (2 Zenith)
H. A. Collier (2 Matchless)	W. W. Smith (1 Rudge)
B. Alan Hill (2 Indian)	W. L. T. Rhys (2 Zenith)
F. W. Barnes (2 Zenith)	S. T. Tessier (2 Bat-Jap)

1.30 P.M.—100 MILES ALL-COMERS' RACE.

CLASS A (275 c.c.).

R. Holloway (1 Premier)	H. Martin (1 Martin-Jap)
N. D. Slatter (1 Alcyon)	

CLASS B (350 c.c.).

H. Martin (1 Martin-Jap)	W. Bashall (2 Humber)
J. Harrison Watson (2 Humber)	A. E. Woodman (2 Humber)
A. Bashall (2 Humber)	S. Wright (2 Humber)

CLASS C (500 c.c.).

P. Brewster (1 Norton)	S. Russell Cooke (1 Rudge)
W. O. Oldman (2 Bat-Jap)	W. D. South (1 Rudge)
A. P. Maurice (1 Premier)	M. J. Stretch (1 Rudge)
O. C. Godfrey (1 Indian)	Vernon Taylor (1 Rudge)
N. A. Ayres (1 Singer)	S. T. Timson (1 Rudge)
S. C. W. Smith (1 Singer)	Stanhope Spencer (1 Rudge)
G. E. Stanley (1 Singer)	P. J. Wallace (1 Rudge)
Howard Smith (1 Triumph)	L. Wallace (1 Rudge)
J. R. Haswell (1 Triumph)	E. B. Ware (1 Rudge)
W. L. T. Rhys (1 Triumph)	C. T. Newsome (1 Rover)
W. H. Elce (1 Rudge)	H. Millidge (1 Rover)
W. F. Guiver (1 Rudge)	

CLASS D (750 c.c.).

R. L. Printz (2 Bat-Jap)	Hal Hill (2 Bat-Jap)

CLASS E (1,000 c.c.).

F. W. Barnes (2 Zenith-Jap)	A. G. Miller (2 Matchless-Jap)
A. Moorhouse (2 Indian)	

CLASS C (with sidecar).

G. Griffith (1 Rudge)	W. W. Smith (1 Rudge)

CLASS D (with sidecar).

S. T. Tessier (2 Bat-Jap)

CLASS E (with sidecar).

T. S. Carter (2 Matchless)	H. A. Collier (2 Matchless)
J. T. Bashall (2 Bat-Jap)	S. R. Axford (2 Zenith-Jap)
B. Alan Hill (2 Indian)	G. F. Hunter (2 Zenith-Jap)

5.10 P.M.—THE NEW-COMERS' RACE.

L. N. Palmer (1 Bedelia)	H. Martin (2 Morgan-Jap)
S. H. Edmunds (2 Autotrix-Jap)	O. C. Godfrey (2 Rollo-Jap)
G. Wadden (2 Autotrix-Jap)	H. Ward (2 Bedelia)
	E. D. Tate (2 Sabella-Jap)
	W. Ward (2 Bedelia-Jap)
	J. Robinson (Sabella)

INTER-CLUB RELIABILITY TRIAL.

THE South-East London M.C.C. and Woolwich, Plumstead and District M.C. inter-club team trial on Saturday last was remarkably successful, the Woolwich Club being the winners by a margin of twenty marks. Starting from the Fox, Keston, the first point of interest was Cudham Church Hill, which was in very good condition. Here the only competitor to fail was F. G. Simmons (3½ F.E. Triumph), who pedalled and "konked" out just after the second bend. The rest took the hairpin excellently, while of the sidecar machines J. W. Woods (6 h.p. Enfield two-speed) and S. Browne (3½ h.p. James two-speed) were the best. Taking the hairpin to Green Street Green, the competitors went by way of Riverhead, Bessells Green, and Westerham village to Westerham Hill, where F. G. Simmons was again unfortunate, and H. A. Collier (8 h.p. Matchless and sidecar two-speed) knocked at the top, but did not succumb. From here the main road was taken back to the start, where the competitors turned to cover the course again. On the second ascent of Cudham Church Hill F. Roberts (3½ h.p. Rudge) took the hairpin too fast and ran into the bank, while on Westerham Hill W. Davis (3½ h.p. Rudge) stopped with a frozen carburetter and unconcernedly set fire to it to get going again. The following were the performances on Cudham Church Hill.

S.E.L. M.C.C. TEAM.

1. N. Daintree (5 h.p. Chater-Peugeot two-speed). Excellent on both rounds.
3. E. H. Paul (3½ h.p. P.V. twin two-speed). Excellent and very quiet.
5. G. Brown (3½ h.p. Zenith). Excellent.
7. F. G. Simmons (3½ F.E. Triumph). Failed each round.
9. F. Roberts (3½ h.p. Rudge). Excellent, very fast.
11. S. Browne (3½ h.p. James and sidecar two-speed). Excellent. The way this machine with sidecar and passenger ascended the hill, and gained full marks was remarkable. It is, we are informed, the first single-cylinder sidecar machine to go up this hill.

W.P. AND D. M.C. TEAM.

2. A. J. Galley (5 h.p. M.O.B.M. two-speed). Excellent on both rounds.
4. W. Davis (3½ h.p. Rudge). Excellent.
6. J. W. Wood (6 h.p. Enfield and sidecar two-speed). Excellent; reported to be the best sidecar performance.
8. R. E. Guest (6 h.p. Matchless and sidecar two-speed). Excellent.
10. H. A. Collier (8 h.p. Matchless sc. 2-speed). Excellent.
12. J. Tassell (8 h.p. Matchless and sidecar two-speed), Excellent.

Nine of the competitors came through without loss of marks, while the time was remarkably regular, S. Browne on the first round being only five seconds out, and J. W. Wood only six seconds out for the two rounds.



Birmingham M.C.C. Opening Run. Members and friends grouped round the Old Maypole, on the Alcester Road.

CLUB NEWS.

Maidenhead and District M.C.C.

This newly-formed club held its first run on the 10th inst. to Arms Hill. The attendance was good, and the run much enjoyed, despite the bad condition of the roads.

Isle of Wight M.C.C.

The first general meeting was held at Newport on the 5th inst., Dr. C. G. Thompson in the chair. The officers and committee for the ensuing year were elected, and the membership, already totalling fifty, promises well for the success of the new club. It has been decided to affiliate to the A.C.U.

Ilkley and District M.C.C.

A breakdown competition was held at headquarters on Tuesday, March 12th, for a prize, consisting of a motor cycle accessory, offered by Mr. Stell.

After a keen competition the winner proved to be Walter Robinson, who located and rectified the two faults in two minutes three seconds.

Hull and East Riding A.C.C.

A non-stop run to Seamer and back was held on the 16th inst., the route being through Beverley, Driffield, and Hunmanby, returning through Bridlington, a total distance of 100 miles. Eight members started. J. F. Walton (3½ Rudge), J. E. Emerson (3½ Norton), A. E. Tuton (3½ Bradbury), and J. Gascall (6 Clyno and sidecar) made non-stops.

Batley and District M.C.C.

The annual general meeting took place on the 29th ult., at headquarters, and the following officers were elected: President, Dr. Lee Potter; hon. treasurer, Mr. E. A. Golby; hon. secretary, Mr. Joseph Hazzlewood, 36, Commercial Street, Batley. The first event of the season will be a run to Blubberhouses, and a speed-judging competition will be held in conjunction.

Cardiff M.C.

At the last meeting of the committee the following competitions were arranged, in addition to the open hill-climb and open speed trial in July: April 5th, opening meet at the Speech House, and hill-climb; April 13th, speed-judging trial; May 11th, club hill-climb; May 27th, twelve hours' reliability trial.

A challenge trophy has been presented to the club by Mr. R. Bevan, and a cup by Mr. A. Williams, the chairman.

Llanelly and District M.C.C.

A meeting was held at the Thomas Arms Hotel on the 14th inst., and it was unanimously resolved to form a motor cycle club, Mr. Sydney D. Morris in the chair. About forty members were represented, and the following officials were appointed: Captain, Mr. Tudor Thomas; vice-captain, Mr. S. D. Morris; hon. treasurer, Mr. E. M. Williams, G.P.O.; hon. secretary, Mr. J. Bryn Morgan, 24, Park Street, Llanelly. Motor cyclists in the district are cordially invited to the next meeting on April 1st, at 8 p.m., Thomas Arms Hotel.

Bristol M.C.C.

A lecture on "Speed and Power," by Mr. McMinnies, was given before the above club on the 14th inst. On the 23rd inst. an inter-team match will be carried out with the Exeter Club, at Bridgwater; meet at headquarters at 2.30. On the 30th inst. the spring competition will take place; the event will be about sixty miles non-stop over a circular course, starting from Keynsham at 2.45.

Western District M.C. (London).

The club runs for this week-end are to Staines on the 23rd inst. and to Reigate on the 24th inst. Mr. Raworth, the designer of a 2½ h.p. petrol motor attachment to ordinary push bicycles, has been invited to meet the club at the top of Reigate Hill between noon and 12.30 to demonstrate the device. On the 31st inst. the first competition of the season, a reliability trial, takes place for the N.S.U. gold medal over a course of 104 miles.

Coventry and Warwickshire M.C.

On Friday evening, the 15th inst., the annual general meeting was held at the King's Head Hotel, Coventry, when the secretary's report and balance sheet were presented. The report of the year's work proves that the Coventry and Warwickshire Motor Club is an active body, doing good work in the interests of motorists generally. The balance sheet shows a handsome balance of £275 odd.

Mr. M. J. Schulte was elected president for the ensuing year, and the following vice-presidents were added to the list: Messrs. John V. Pugh, A. H. Bush, and C. H. Elson. Mr. G. Smith was re-elected hon. secretary, with Mr. A. Elson as assistant secretary. Mr. A. Wright was also re-elected as hon. treasurer. The following names were added to the committee: Messrs. H. Belcher, B. S. Gorton, J. W. Roebuck, A. E. Dover, F. S. Pountney, H. Lister Cooper, and E. A. Isherwood.

It was resolved to contribute twenty guineas to the R.A.C. touring guide scheme under certain conditions.

The next day, Saturday, the opening run and speed-judging competition was held, members meeting at the residence of the new president, Mr. M. J. Schulte, "Hill Crest," Kenilworth. Over sixty assembled. The competitors drew lots for the speeds they were to average at the start, and the "hare" car—a 12 h.p. Humber—with Messrs. H. Belcher and G. Smith aboard, laid a tortuous trail of about twenty-five miles among the lanes.

Tea was subsequently taken at the Golden Lion Hotel, Stratford-on-Avon, when the results were announced:

Motor bicycles: 1st, H. Lister Cooper (Triumph), ½m. slow; 2nd, B. S. Gorton (Rex), 5¾m. fast; 3rd, V. A. Holroyd (Rudge), 11½m. slow.

Cars: 1st, E. J. Hardy (Rover), 5½m. slow, and J. Bachelor (Triumph sidecar), 5¼m. slow, tie; 3rd, G. T. Mills (Rover), 5¾m. slow.

Particulars and entry forms for the open reliability trial on May 4th will be ready very shortly, and will be posted to all motor cyclists interested in the event.



Members and friends of the Coventry and Warwickshire M.C. assembled for the opening run at Hill Crest, Kenilworth, the residence of Mr. M. J. Schulte, the new president.

HUNTS Ltd.

The City & West End Motor House,
117, Long Acre, London, W.C.

RELIABLE ACCESSORIES AT LONDON'S LOWEST PRICES



THE HUNT "ANTARNISH."

A non-greasy, weatherproof, and INVISIBLE Lacquer for applying to the plated parts of Motor Cars, Cycles, etc., and also to bare clean steel, brass, or any other metal.
Price per tin, 9d. Postage 3d.



THE HUNT "ROSCO" CYLINDER PAINT.

Keeps the engine cool, prevents overheating, produces a smooth dead black surface. Unaffected by heat or water.
Price per tin, 6d. Postage 2d.

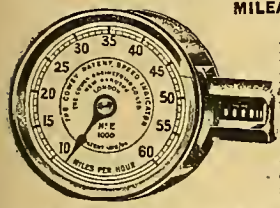
THE HUNT "COVEROLE." For Repairing Leaky Petrol Tanks, Pipes, Unions, etc.

DIRECTIONS:

For Worm Unions.—Paint the treads and cone liberally with Coverole, screw up tightly, and give a final application to the outside.

For Cracked Pipes, etc.—Smear a piece of paper, canvas, tape, or similar material with Coverole, and wrap tightly round the pipe. Price 1/- Postage 2d.

THE COWEY SPEED INDICATOR AND MILEAGE RECORDER (Guaranteed).



Registers a speed up to 60 miles per hour. Mileage recorder registers up to 10,000 miles, then automatically starts again. The indicator can be easily attached by any motorist, and once fitted requires no attention or adjustment whatever. It will continue to render good service as long as it is attached to the cycle, for it is constructed throughout of the best and most suitable materials by expert British mechanics at Kew Gardens.
Price, in Nickel, 84/-, carriage paid.

THE HUNT DRIP FEED LUBRICATOR.



For inserting in existing oil pipe. Adjustable to any number of drips. Oil can be forced through by pump if desired
Price (plated) 5/6, postage 2d.

THE HUNT Valve Spring Remover.



By means of the compound action the stoutest spring is easily raised by a slight turn of the winged nut, leaving both hands free.
Price 2/6, postage 2d.



THE HUNT "ACME" WATCH AND CASE.

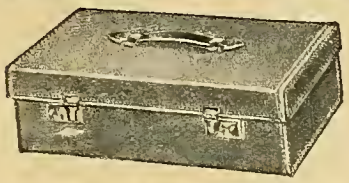
These Watches are constructed to stand vibration. Each watch guaranteed for 12 months. To clip on handle-bar. Very neat. Made in Aluminium. Complete with Ingersoll Watch.
Price 8/6, postage 2d.
Case only, 3/6

THE HUNT ALL METAL SWITCH.



The design of this Switch is so extremely simple that there is nothing to it to get out of order; the contact is quick and definite for both make and break. The whole of the [illegible] is made out of heavy sheet brass, well finished and nickel-plated: the terminal is insulated with extra large ebonite washers, and the fixing clip is attached by a bolt and a nut passing through the sides of the metal case, thus ensuring a reliable attachment to the handle-bar.
Price. One Way 2/3. Two Way 2/9, postage 1d.

THE HUNT NEW MODEL COMPACT VALISE.



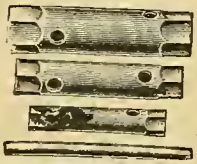
Length, 18in.; width, 11in.; depth, 6in. Manufactured of finest cowhide. Strengthened inside with strong hide-covered metal bands, and at the bottom with two wood batons which prevent bag being chafed by carrier. The inside is lined with a strong twill, and the outside is fitted with two spring lever locks and handle. The bag is strongly riveted throughout, and it is impossible for it to lose its shape. The handle enables it to be also used as a Suit Case. Fitted with two leather straps 48×1½in. for attaching to carrier. The motor cyclist can carry sufficient clothing inside this case to last him for a fortnight's tour. On arriving at his hotel, the bag can be taken to his room as an ordinary portmanteau. Finished in dark nut-brown leather. Price 30/-.

THE WESTWOOD specially prepared Repair Bands.



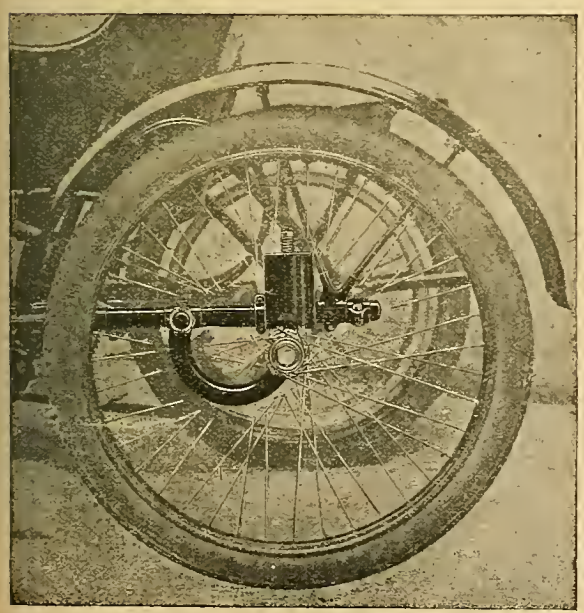
For use on outside of cover after same has burst or been gashed. The outside edges are tucked inside rim, i.e., between rim and cover.
Price 1/-, postage 2d.
Ditto for inside, 8d.

THE HUNT Motor Cycle Box Spanners.



Containing six sizes, with tommy. English manufacture. Guaranteed.
Sizes ¼, ⅜, ⅜, ⅝, ½, ⅝in.
Price 2/6 set, postage 3d.

Make your passenger comfortable by fitting a



GLORIA
SIDECAR

to your Motor Cycle.

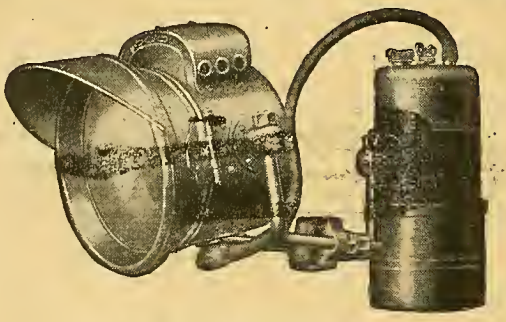
This sidecar is beautifully roomy and luxuriously upholstered, but the patented device of spring suspending the wheel is the feature which makes this car a mechanical triumph. In addition the body work is hung on Cee Springs so that no road shocks are felt, and the rider of the motor does not feel the vibration usually inseparable from a Motor and Sidecar outfit. It is eliminated by the Gloria Suspension.

Booklet describing this and other unique features post free.

Gloria Cycle Co., Ltd., Coventry.

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HIGHEST GRADE

The World's Most Reliable Acetylene Motor Cycle Lamp.



The "P. & H." Acetylene Headlight Set ..... No. 125.

A powerful projector Lamp fitted with a Roni Non-carbonising burner, special Mangin Lens Mirror, and best plate glass bevelled Convex Lens. Has special Bracket, suiting Lamp Bracket or Ball Head, upon which the Lamp can be reversed if required. Special Generator with adjustable Bracket, of the highest quality and efficiency, complete with best grey rubber Tubing. Can be attached to cycle in three ways.

Height.	Weight.	Front.	Lens.	Best Finish.
7in.	2¾ lbs.	5¼in.	4½in.	Plated on Brass.

Price ..... complete ..... 1 : 7 : 0

Or if without Generator .... Price .... 0 : 17 : 6

¶ —We recommend this Headlight to all who desire a perfect "Light" equipment without being asked to pay a high price for it.

¶ —Reliability is the outstanding feature of the "P. & H." products. See the name is on your Lamp and you're safe from lamp troubles.

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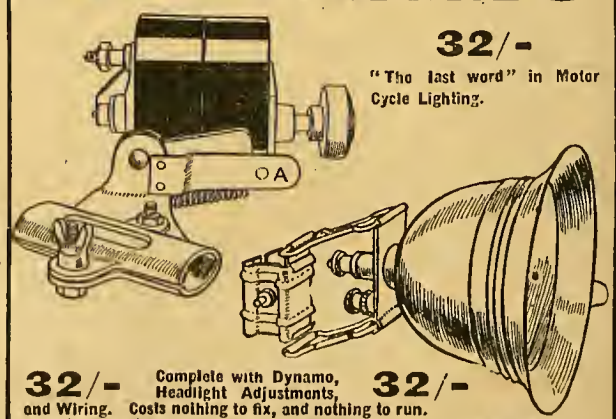
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Club News.—

Purley and District M.C.C.

The night trial, one of the most successful competitions the club has so far organised, was carried through on Saturday, the 9th inst., mostly in heavy rain. The schedule speed of 15 m.p.h. was too slow for Olsson (Trump-Jap), who "toured round comfortably" and arrived at all the controls too early. The route was *via* Dorking and Bury Hill to Worthing, then by the inland road to Brighton, and home *via* the main Brighton Road and Reigate, total distance 113 miles. The best performances were put up by E. M. Oliver (2¾ h.p. Humber), D. S. Ainger (Triumph), W. G. Fowler (Rudge), and H. B. Willoughby (Rudge), but the actual awards will not be known until next week. The rain and the heavy roads caused several failures on Bury Hill, and Arundel seemed an unlucky place, for most of the competitors began to lose ground at this control for various reasons. Tomkins (Rover and sc.) punctured, Axford (8 h.p. Zenith and sc.) had lamp trouble and ran into Worthing over an hour late with an electric torch for head light, Kemp (6 h.p. Zenith and sc.) ran out of petrol at Arundel, and Symonds (Triumph) sacrificed his chance of winning by stopping to transfer some of his own supply to Kemp's tank. Willoughby took a toss on the vile road between Worthing and Brighton, and Gaskins (Rudge) had his magneto driving pinion come adrift near the foot of Handcross, whilst D. H. Ebbutt (Precision) broke his exhaust valve near the same place. Everybody finished somehow or other, despite the long delays which fell to some of the unfortunates. The secret controls, of which there were six, were arranged by Mr. Brett with the assistance of several willing helpers, three of whom were not members of the club nor even motor cyclists, but showed themselves immensely interested in the contest.

Sussex M.C.C.

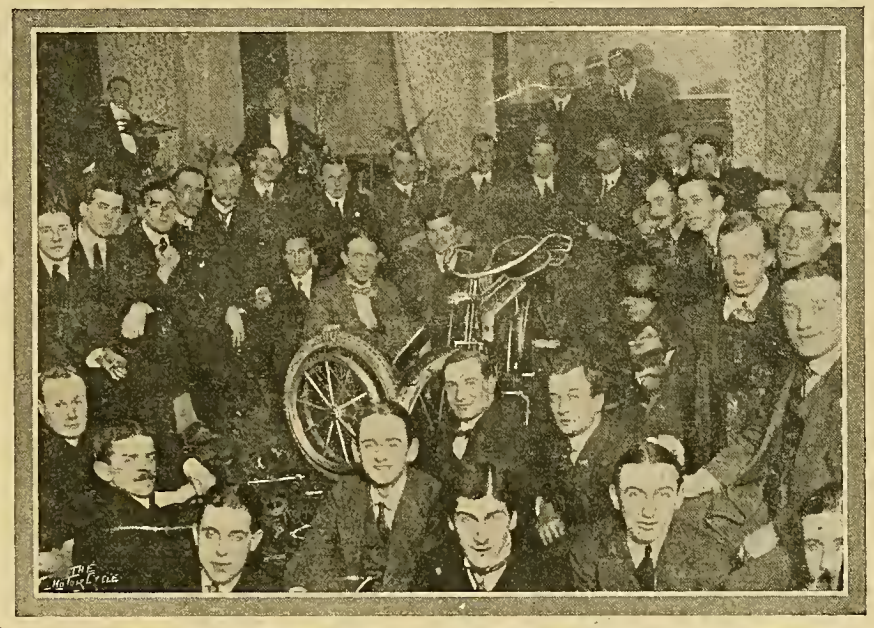
At the meeting held at the Fountain Hotel, Worthing, on Saturday, the 9th inst., the following runs were arranged: March 17th, at 10.30 a.m., starting from Old Shoreham Bridge, to Lewes; March 23rd, at 2.30 p.m., to Horsham; March 24th, at 10.30 a.m., to Midhurst.

Kingston and District M.C.C.

A meeting was held on the 8th inst. with the object of forming a motor cycle club for Kingston-on-Thames. Intending members are asked to write to Mr. A. Strutt (hon. secretary *pro tem.*), Chesfield Road, Kingston-on-Thames, Surrey.

Leeds M.C.C.

At the annual general meeting of the above club, held in the Grand Central Hotel, Mr. Rowland Winn presiding, the following officers were elected for the coming year: President, Mr. Rowland Winn; hon. secretary, Mr. G. B. Corner; hon. treasurer, Mr. J. H. Gash. The president announced the probability of a new and interesting competition, and the committee are arranging an attractive list of events. The membership of the club is now about 100.



A new Manchester Club. This amateur body recently arranged a supper, after which a Triumph clutch machine was dismantled by a representative of the makers.

Manchester Amateur M.C.C.

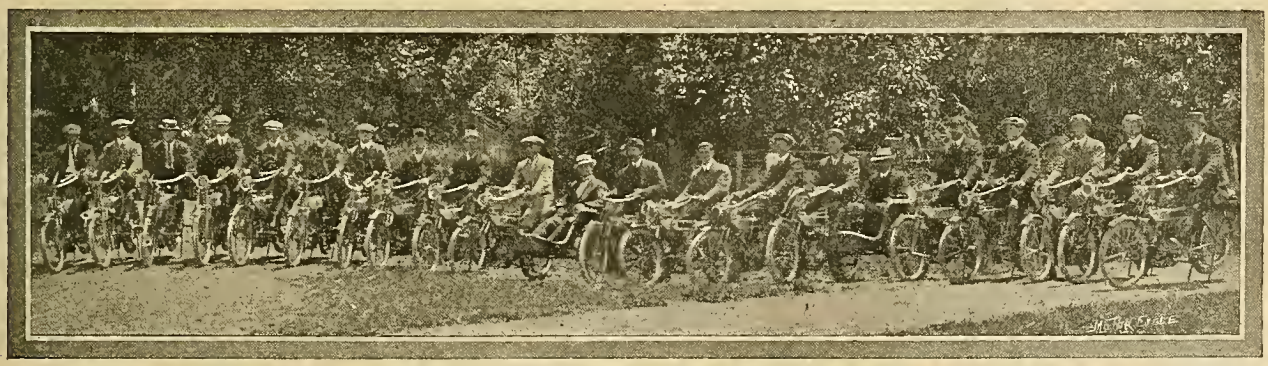
A very successful hot-pot supper was held on the 11th inst., at the Moslev Hotel. A demonstration of the dismantling of a Triumph machine, by the Triumph Cycle Co., was much appreciated by the forty-four members and friends present. The photograph shows the scene during the dismantling of the engine.

Portsmouth and District M.C.

As a meeting held at the King's Hotel it was decided to form a motor club. Mr. F. Tappenden, 18, Albert Road, Southsea, was elected hon. sec. and treasurer.

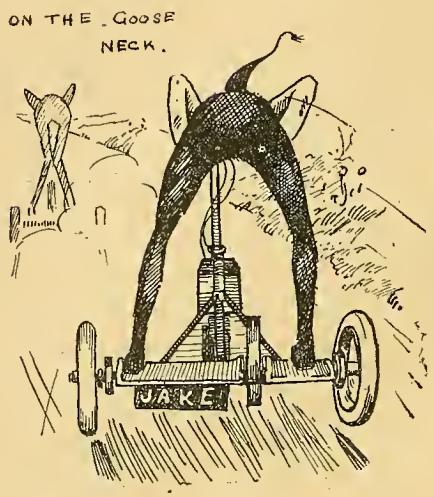
Finsbury Park C.C. (Motor Cycle Section).

The first run will take place on the 24th inst. to Windsor. Other events will be announced later. All letters should be addressed to Mr. R. G. Barrett, 54, Florence Road, Stroud Green, N.

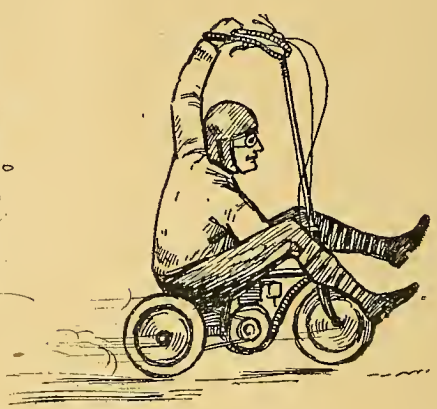


A long row of Bradbury riders in New Zealand. The photograph affords a striking instance of the popularity of British made motor cycles in our colonies.

WHY NOT? A T.T. Race for Motofrips.





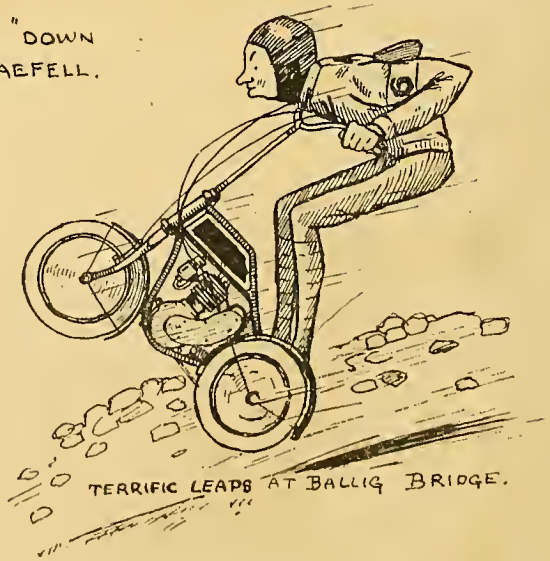


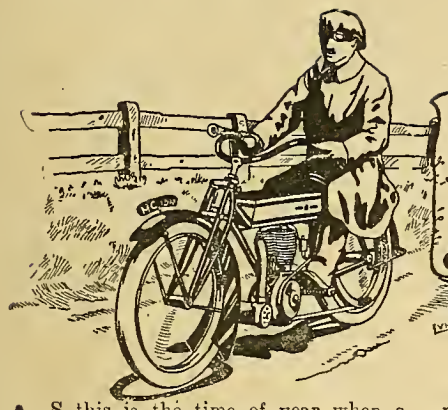












BUYING SECOND-HAND MACHINES.

AS this is the time of year when a change of mount is most frequently made, it is naturally a time which more than any other sees a great many novices buying their first machine; and a word or two of guidance in the purchase of second-hand machines will, I hope, justify the space that they occupy. First of all, however, it must be argued, and, in fact, it often is, that the best thing a beginner can do is *not* to buy a second-hand machine at all, but a new one, as by that means he avoids all likelihood of coming in for troubles thrown upon him by the carelessness of his predecessor in the saddle. Those who uphold the "new machine" policy urge that there is no likelihood of its suffering serious damage, inasmuch as tumbles are more likely to take place when the machine is standing still than when it is running, and that anyhow, if it came to a case of running

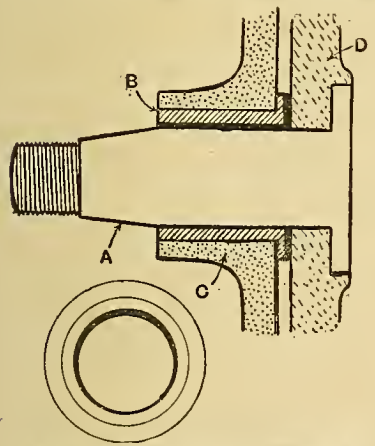


Fig. 1.—Showing how wear, indicated by solid black, develops in crankshaft plain bearings. The smaller section shows how a worn shaft lies in its bearing.

A, crankshaft
B, bush
C, crank case
D, flywheel

head on into a wall, the age or newness of the machine is not likely to be of much consequence; but the probability is that replacement of the damaged parts can be made just as effectively to a new machine, and also just as cheaply, as to the old one.

The same advocates sometimes go so far as to say that it is a real mistake to learn on a second hand machine because it may have an old type of carburetter, coil and accumulator ignition, and an automatic inlet valve, concerning all of which a lot of information will be gained which will be very little practical use when the rider graduates to an up-to-date machine. These arguments are all very well in their way except the last, which scarcely holds good, because the very great majority of machines on the second-hand market to-day are, as it were, "fitted with all modern conveniences," and differ only in detail from 1912 mounts.

Advantages in Purchasing a Second-hand Machine.

Personally, I strongly believe in the wisdom of learning to handle a motor cycle before throwing one's leg over £60 worth of spotless enamel and glittering nickel plate. The great advantage of obtaining intimate knowledge of a machine that has seen a good deal of wear is that one can perceive easily how such wear has been caused, where it takes place, and what steps can be taken to prevent it developing in a new machine. The latter will also suffer considerably by the constant undoing of those nuts and bolts which hide sources of information from the enquiring eye. The second-hand machine can, however, be handled with some impunity without suffering serious depreciation thereby.

It is not only novices at the game who are interested in second hand machines, for there are a great many motor cyclists who rarely, if ever, purchase a brand new mount, but remain, as it were, always a year or so behind the times, thus following their favourite hobby with perfect satisfaction and at a reduced cost.

Where to Look for Faults.

The following tips, based on many years of experience, may be of service to those who contemplate buying a second-hand machine. Points to which they should direct their special attention are as follow:

The engine is naturally the part which is examined first, and, although it is of vital importance, it certainly should not be allowed to overshadow other points, which, though not equally so, nevertheless require careful investigation. The first thing that one naturally goes for is the compression, which can be tested by turning the engine over by means of the belt pulley. If there is any doubt about the integrity of the seller, it may be worth while to ascertain whether there is any compression on *every* upward stroke. I know of a case where the compression of a 4½ h.p. De Dion voiturette consisted of a chair spring, but tricks of this nature are very unusual. However, it is always as well to be on the safe side. In testing compression, turn the pulley over as slowly as possible, as, if revolved sharply, the engine will show quite tolerable compression, even if the piston, rings, and valves are all badly worn. The next thing to look for is wear in the running parts. Alternately pulling and pushing the engine pulley from side to side will indicate lateral play in the main crankshaft bearing whilst shaking it in a vertical plane will give some idea of its journal wear (fig. 1). The same remarks apply to plain and ball bearings.

Wear on the big end of the connecting rod and the gudgeon pin can easily be detected by rocking the pulley very quickly backwards and forwards, and so reciprocating the piston up and down a very short stroke. Any shake that is in the bearings can thus not only be distinctly felt, but also, if listened for, heard as well. The practised hand can in fact quite easily detect at which bearing the play is developed.

The crankshaft should be tested for straightness, and this is easiest done by observing the pulley when the engine is being run on the stand. Bent shafts are by no means so uncommon as many people would imagine, and when they occur, even to a very slight extent, they are capable of giving more trouble than almost anything else.

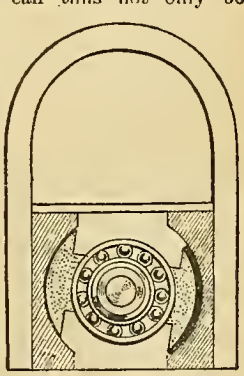


Fig. 2.—Sketch showing how wear in the armature bearings of a magneto affects the clearance (shown solid black) of the pole pieces.

Inspect the Timing Gear.

As regards the valve gear it is certainly desirable to have a look at the timing pinions. As this involves taking off the magneto sprocket, and possibly other things as well, it may not always be possible to do this, but if the gear can be seen so much the better. If not, the only thing to do is to ascertain that it gets, and has been getting, plenty of lubrication as if not the profile of the cams may have worn sufficiently to affect the power of the engine to an appreciable extent, and also back lash develops in the teeth of the pinions which serves to set up noise. Lateral wear of tappets and guides can easily be measured. Although this does not have much effect upon the power it makes a considerable amount of difference in the external

Buying Second-hand Machines.—

cleanness of the crank chamber, and as the proffered machine will be fairly sure to have been polished up assiduously this is generally the only guide as to whether the engine is clean or dirty in actual use.

If the tappets be not fitted with any means for adjustment the amount of clearance between the base of the valve stem and the tappet heads should be noted carefully. This should amount to about the thickness of an ordinary visiting card; if there be more, new tappets will be required.

Wear of the Magneto.

If a magneto be fitted this should be tested for wear by removing the chain or gear case and feeling for shake in the armature shaft (fig 2). Although magnetos are wonderfully well made as a rule, they are frequently neglected and wear is easily set up on the driving end of the armature spindle. Quite a small amount of slackness at this place will cause trouble and should be carefully looked for, as it is essential for the proper working of this mechanism that the armature should run perfectly centrally between the pole shoes of the magnets. The contact breaker platinums should be examined to see how much is left of them. The fibre foot of the rocking arm should also be inspected, as this will by no means last for ever. In like manner shake between the pin of this rocking arm and its fibre bushing should also be looked for. The bushes not infrequently swell and hold up the rocking arm, and the pin or fibre may have been reduced too much.

If the ignition be by coil and accumulator a test of the working of the former can easily be made by working the contact blade with one's fingers or by turning the engine round and holding the terminal of the high-tension cable about one eighth of an inch or so from some part of the engine. The condition of the accumulator terminals will show whether the battery has been well looked after, but it should also be carefully examined for signs of bent or broken plates, and for paste having become detached from the grids.

Carburetter Faults.

The principal things to look for in the carburetter are that it does not leak nor flood when the machine is standing still, and that the throttle and air slides work freely in their barrel. The only fault likely to be found in the petrol and oil tank is leakiness, and this should certainly be looked out for.

On the cycle part of the machine inspection should be directed towards the bearings on the front and back wheels, and also specially to the articulations of the spring forks and the tightness of the steering head. All these can easily be felt by shaking the wheels slightly from side to side with the machine jacked up on the stand, and in the case of the spring forks by holding the front wheel between the knees and pulling up the handle-bars with one's hands.

If the transmission is by belt the engine pulley should be examined for that "step" formation which is caused by belt slip and long continued use (fig. 3). If the pulley be adjustable the outer flange should be quite free from sideplay. The truth of the belt rim may also be investigated, and if it be clipped to the wheel spokes or fastened directly by short spokes to the tyre rim, any signs of the clips or spokes having loosened should be looked for.

Condition of Sprockets and Chains.

In chain transmission the condition of both sprockets and chains is important, and the way in which the chain rides on the sprockets when the engine is turned by pulling over the back wheel gives a good indication of whether they are at all out of pitch. If in good condition the rollers should go fairly and squarely down to the bottom of the gaps between the teeth, the sides of which, if polished very bright, will indicate that the user of the machine has been careless in aligning the back wheel after chain adjustment. It will be noticed, of course, that, although chain drive is extremely efficient, it is only so when the alignment and conditions of chains and sprockets are thoroughly good. If the chain be old and much used it may easily get so out of pitch as to make the transmission very inefficient indeed, and to get good results it will then be necessary to replace both chain and sprockets, an item of expense by no means negligible.

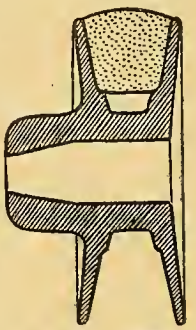


Fig. 3.—Showing how a "step" gets worn in the groove of a fixed pulley.

The condition of a bevel transmission is best obtained by jacking up the back wheel and feeling the back lash which has developed in the teeth. A small amount is unavoidable, but if there is sufficient to allow a point on the tyre of the back wheel to move through an arc of more than about two-thirds of an inch when turning the wheel with engine at rest, the wear is probably sufficient to demand a new pair of pinions, or at least to set up a good deal of noise.

Change speed gears in whatever position they be fitted require very careful inspection, but there are so many kinds in popular use to-day that it is impossible to do more than touch upon the general way in which possible faults should be looked for.

Clutch gears, or those in which the counter-shaft carries two driving chains, which may be coupled up one after the other to it, by means of clutches, generally show most signs of wear on the expanding clutch rings themselves, and upon the mechanism which is used to operate them. If, when the gear pedal or lever is forced right home, there is any tendency to slip, which is often the case after a season's wear, the difficulty can be met by fitting new operating bars. Ease of running of the gear can be tested by putting it into neutral position and pulling the back wheel over. Ill-use may have affected the expanding rings and prevented them showing a disposition to contract when out of engagement. A gear of this sort should run as freely as the pedal gear on a push bicycle, and if there is any noticeable friction it should be enquired into.

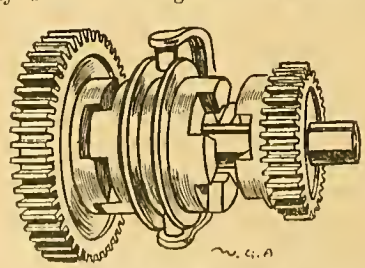


Fig. 4.—Sketch to show how, if the lever or pedal be badly adjusted, the dog clutches do not completely engage.

Positive counter-shaft gears should principally be examined for wear in the teeth of the pinions, which may easily be done by feeling the amount of back lash when turning the engine over by means of the back wheel. Undue noise from a gear of this sort, which can be thoroughly lubricated, is a sign of over wear. Ascertain that the high gear, low gear, and free engine positions of the quadrant lever or pedal correspond with the position of the dog clutches in the gear box, and that these clutches are fully engaged with one another when the lever is in its respective notches (fig. 4). If the operating lever can be pushed beyond these notches in both directions the probability is that the gear has been brutally used and the dog clutches become badly worn. Wear in the bearings of the primary gearshaft can easily be felt by shaking both the driving and driven parts of it.

Hub Gears.

As these are of the epicyclic type, points to look for are absence of friction in the free engine and top gear positions, back lash between the belt rim and the road wheel caused by wear on the teeth of the internal pinions, and the condition of the brake bands. The latter may have had all their adjustment used up, in which case they will require their linings replaced. Back lash can best be felt by holding the tyre with one hand whilst moving the belt rim with the other. Lash, in some gears, even when new, is rather a large amount, owing to the number of trains of pinions through which the drive is transmitted. On a two-speed gear, however, movement of a 19in. belt rim should not be greater than an arc of about an inch. Ascertain that the gears are firmly and positively engaged when the lever or pedal is operated, and that in mid-positions there is no grating as if both gears were trying to engage at once.

Free running of the multiple surface metal-to-metal clutches, which are used both in hub gears and hub clutches, should be ascertained by spinning the back wheel, or attempting to do so when the clutch is disengaged. Holding the belt rim and pulling on the tyre will go some way towards showing if there is any likelihood of slip taking place.

The same remarks apply to gears and clutches intended for application to the engine-shaft. In all cases, the points to be looked for are wear on the gearshaft bearings and back lash in the teeth of the pinions.

When it comes to examining tyres, the prospective buyer is, one must admit, treading on rather difficult ground,

"Distinct from all Others."

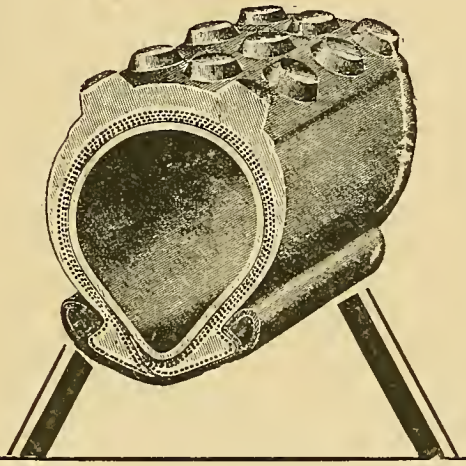
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	Covers.	Butted Tubes.		Covers.	Butted Tubes.		Covers.	Butted Tubes.
24 x 2	23/9	9/3	26 x 2	35/-	10/6	26 x 2¼	46/-	12/9
			26 x 2¼	36/-	12/9	26 x 2½	47/6	14/3
26 x 2	25/6	10/6	26 x 2½	37/-	14/3	26 x 3	50/3	
			28 x 2¼	37/9	13/9	28 x 2¼	48/-	13/9
26 x 2¼	26/6	12/9	28 x 2½	38/9	15/6	28 x 2½	50/-	15/6

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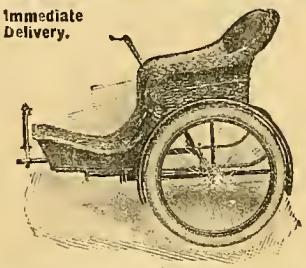
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1912 MODEL SIDECARS

Immediate Delivery.



The Hunt 1912 Model Sidecar. Upholstered wicker chair, cushion, detachable clips, 26×2¼ tyre. A strong and reliable sidecar at a popular price, stocked to fit all motor cycles, price £5/15.

Millford Sidecars. All models on view, stocked to fit all motor cycles; prices from £6/6.

Chater-Lea Sidecars. All models on exhibition; prices from £8

Sidecar Bodies. Wicker, upholstered in leather cloth, with cushion; price £1/10. Various designs on view.

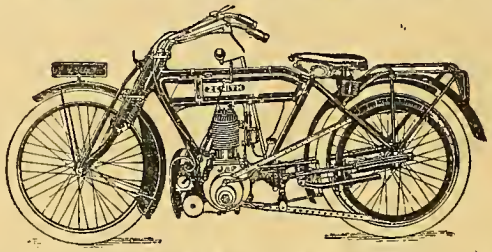
CLOTHING.

North Road Overalls.

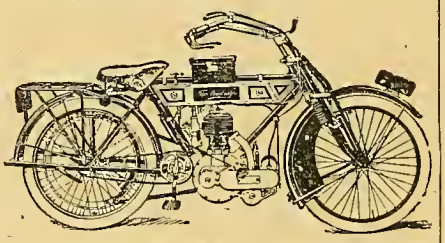


These meet a long-felt want. They can be instantly slipped on over the ordinary trousers. They fasten round waist with a leather strap and buckle. Being made in one piece, they are a great protection to the stomach, also it is impossible for the rain to drive in as with the ordinary overalls. Made in three lengths—short, medium, and long. Shaped to go over boot. Patent side fasteners.

Price, quality No. 1, 16/6 per pair, postage 6d.
Price, quality No. 2, 13/6 per pair, postage 6d.



1912 Model 3½h.p. Zenith, with the Gradua gear, price £55/13; 1912 Model 6h.p. Zenith, with the Gradua gear, price £70/7.

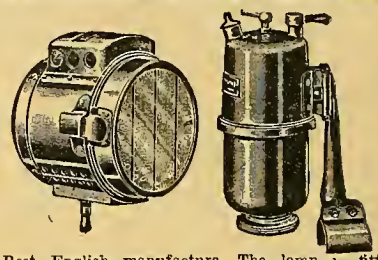


1912 Model 3½h.p. Bradbury, price £48; 1911 Model 3½h.p. Bradbury, price £44; 1911 Model 3½h.p. Bradbury, with 2-speed gear, price £50.

The Hunt Magneto Knife.
A useful little tool.



FILE: For smoothing down Platinum Points to secure even contact GAP-GAUGE For setting Platinum Points correctly. KNIFE The utility of which every motorist will appreciate Price /-. Postage 1d.



Best English manufacture. The lamp is fitted with genuine Bausch and Lomb lens, Bray's Rcni burner, fitted in adjustable socket for focussing, flare front, door hung on specially constructed hinge. These projectors are specially constructed to concentrate the light right ahead, and to show any obstacle much farther than the ordinary acetylene head lamp. Special attention has been paid to the construction, all parts being either riveted or screwed, no solder being used. The generator is on the well-known drip feed system, and is fitted with either top tube or fork bracket. Weight of lamp and generator 3 lbs. 12 ozs., lamp only 2 lb. 4 oz., generator only 1 lb. 14 oz. Size of lamp lens, 3¼in., front 4¼in.; height of generator, 7¼in. Finished in best nickel plate. Price of set, complete with armoured connection and generator fitted with top tube bracket, 30/-; if fitted with fork bracket, 27/6; lamp only, 18/6; generator only with top tube bracket, 10/6; ditto, with fork bracket, 8/-.

An extra large 2-way generator can be supplied to feed two of these lamps, fitted with top tube bracket. Price 16/-.

The Hunt Hellesen Dry Cell.

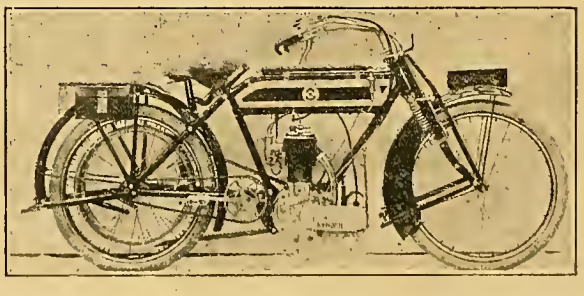


No corroding terminals. No acid. No charging. Always ready, clean, and dry. The "Flash." Height 6½×4¼×2¼in. Approx mileage, with single-cyl. engine 1,500. Price 6/6. The "Flight" ditto. Height 5½×5½×2½in. Price 6/6. The "Midget" emergency ditto. Height 5¼×4¼×1¾in. Will run approx. 300 miles. Price 4/4. Postage 6d. extra.

THE KYNOCH

FULL OF UP-TO-DATE FEATURES.

RELIABILITY, COMFORT, SPEED.



The **Essential Features**, and many others are embodied in the Kynoch.

NOTE a few items in the Specification: Engine 3¾ h.p., 85x88, Bosch 1912 Waterproof Magneto, B. & B. Carburetter, Automatic Sight Feed Lubrication, Stand both wheels. Handle-bar Control throughout, Druid or Saxon Spring Forks, 2¼in. Dunlop Tyres, Dunlop Belt, Brooks Saddle. Price List and Specification on application to—

KYNOCH, LIMITED, 20, Bucklersbury, LONDON, E.C.
Works WITTON, BIRMINGHAM.

London Agents. R. LAWSON & CO., 225 and 375, Edgware Road, W., and 50, High Street, Putney, S.W.
ANGLO SAXON MOTOR & CYCLE CO., 31, Newgate St., E.C.

Buying Second-hand Machines.—

because a cover may look good for quite a long distance ten minutes before it gives up the ghost altogether. The feel of the rubber and its appearance should, however, give one a fairly good idea of its quality. If the cover is old it will probably have a number of minute cracks lying between the bead and the tread. The latter should, of course, be examined for cuts and gashes, especially those which are more than superficial and go in sufficiently far to let water get into the fabric. As a matter of fact, tyres can only be properly examined if looked at both from the outside and from the inside. As an examination of the inner tubes and inside of covers means removing the tyres from the rim, which is inclined to cause some little trouble, they will probably have to be taken on trust.

An Exhibition Run.

Accessories may be assayed more or less at a glance, but it is quite worth while to ask to have the head lamp lighted so as to prove both it and the generator at the same time. A speedometer is certainly reliable, but will not stand abuse. If out of condition it will show its three principal faults quite clearly, viz., shakiness of the indicating hand, noise, and stiffness. Spinning the front wheel for a few moments will give a tolerably good idea of its working. The condition of the driven pinion is worth passing attention. This will not by any means last for ever, especially as it is rarely set properly in pitch.

It is not every seller of a motor cycle who will allow the prospective purchaser a solo run on the road. If there is no sidecar, a short run on the carrier is likely to be as informative as to the general behaviour of the machine as anything. Failing this, the seller should be asked to give an exhibition which should include as stiff a hill as possible, and a burst of speed on the level. In the former case, get the rider to climb the hill as slowly as possible. This will bring out clearly any knock that the engine possesses, much better, in fact, than a rush up the hill would. After this, ask for an exhibition of fast climbing. In the matter of speed the buyer is the best judge of what he himself requires, but it is as well to keep as sharp an ear as possible for the rattle that worn parts always set up. A demonstration of slow running on the level should be asked for, as in many ways it is an even more seaching test than a speed burst.

In purchasing a second-hand sidecar, appearance may be taken as the best guide as to value. Don't forget, however, to look for end play in the sidecar wheel bearing, and for signs of "give" in the stub axle and frame. Viewed from behind, the sidecar wheel should be exactly vertical and parallel to the rear wheel of the motor cycle. Any tendency for the two wheels to converge upwards may be taken as a clear proof of weakness in the sidecar axle or bad alignment of sidecar and motor cycle. The alignment of the springs is worth a glance, as in the cheaper sidecars their temper is often rather an indefinite quantity, and if they are on the dead side they nearly always manifest a tendency to sag sideways. Play in the spring shackles is of very little moment, provided wear has not taken place to such an extent as seriously to weaken their strength and that of the pins on which they turn.

Assistance of an Expert Friend.

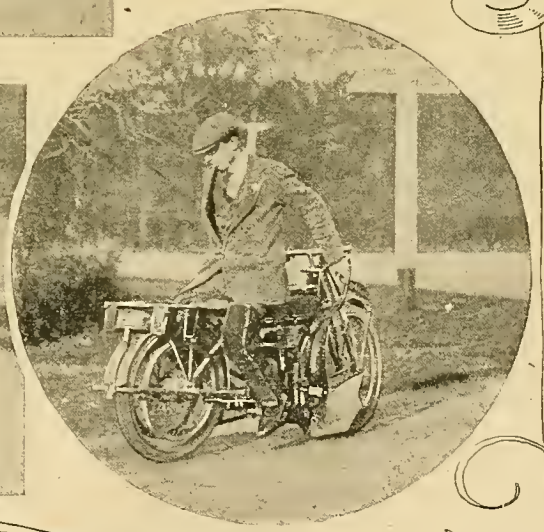
Finally, if you have any doubt about your ability to judge between a good machine and a worthless one, get your most expert motor cycling friend to go with you, but do not hesitate to use your own eyes and ears as well as his. If you are a "lone hand," do not pretend to more knowledge than you have got. The man who, not being one, poses as an expert is obviously lacking in commonsense, and, as such, is more easily taken in by a shrewd seller.

Lastly as to payment. Don't trust a total stranger, and don't expect him to trust you. Make use of *The Motor Cycle* deposit system, and think twice or three times about a seller who demurs at your suggesting it, but if both parties are decided that they can do without it, don't offer your cheque by way of payment and feel insulted if it be refused. If you have the cash in the bank you can get it out just as easily as anyone else and go prepared to purchase with the cash in your pocket, which saves any amount of misunderstanding. W.G.A.

TRICK RIDING ON A MOTOR CYCLE
(see next page).







(1) The above change of position might appeal to long distance riders who get cramped.

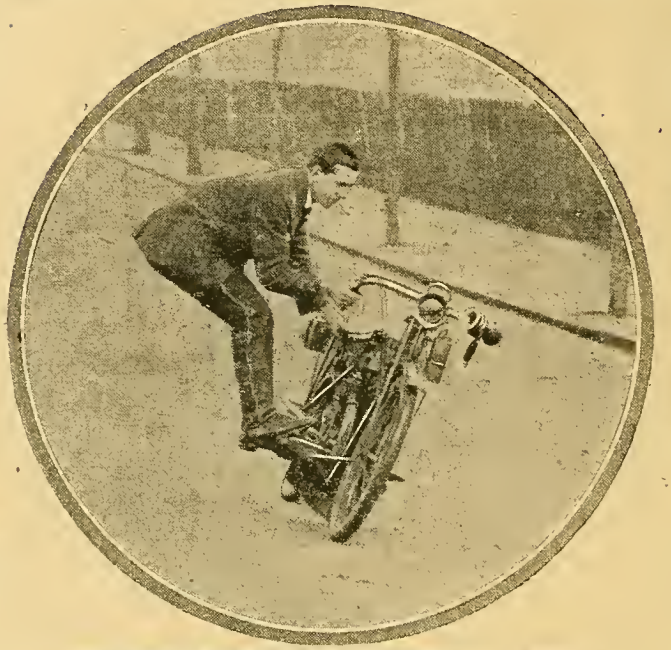
(2) To lessen wind resistance—and a useful position for a military scout.

(3) Riding backwards with the engine actually running.

The clever motor cyclist depicted is A. Milner, of Birmingham, whose mount is a 3½ h.p. three-speed James.

TRICK RIDING ON A MOTOR CYCLE.

THE accompanying illustrations show a few methods of riding a motor cycle which are, fortunately, rather unusual, and while the ordinary, common, or wayside motor cyclist may admire, he will not be likely to wish to imitate, for while they are interesting as showing what can be done by a skilled performer, we do not think they serve any useful purpose, or that they are desirable on the public roads. Mr. A. Milner, the rider, has been a trick cyclist on the stage, and a member of the Olympian Troupe, which at one time toured the music halls. He commenced trick riding as a boy, when he often incurred his father's anger by collecting crowds outside his place of business, and was deservedly corrected in the orthodox manner.

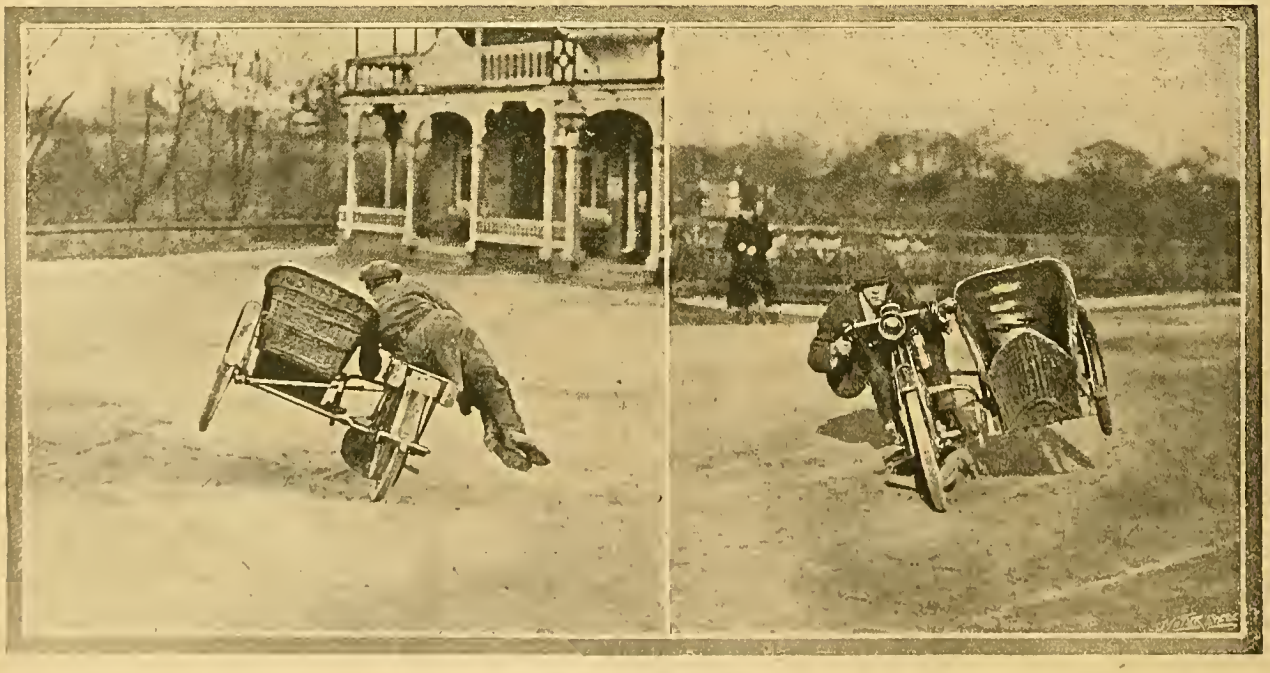


A daring position which should dispel any supposition that a motor cycle is difficult to ride.

Mr. Milner's first mount was a bone-shaker which once belonged to his father, his second a pneumatic-tyred safety. It was upon the latter that, stirred to emulation by some trick-riding which he saw on the stage, he first set about practising for himself; but previous to this he had learnt to ride on the driving wheel only of an old high bicycle, for which he gave the large sum of half-a-crown, the backbone of this machine having got broken.

Mr. Milner created something of a sensation at the Sutton Coldfield Trial, recently held from Birmingham to Banbury and back, by running alongside his mount and springing on to the saddle with his feet, when another man would be content to sit, but we do not think he rode down Sunrising in that way.

Mr. Milner has been the possessor of thirty-three motor cycles, and he speaks very highly of his present mount, a 3½ h.p. James, fitted with the Armstrong three-speed hub. This machine will fire steadily while Mr. Milner goes through the performances shown and cuts figures of eight and circles while at the same time climbing over his machine. He has had one narrow escape of an accident. On this occasion he was trying to stand on his head, slipped, and caught his shoulder on the saddle. Just at this moment a runaway horse appeared and a collision was narrowly avoided. "All's well that ends well."



JUGGLING WITH A RIGID SIDECAR.

(1) One way of taking a corner. (2) The sidecar as an aid to balance. The rider really assumes a greater angle than this, the footrests practically touching the ground once or twice, but not within the range of the camera lens.

Ride with an easy mind!

YOU CAN, IF YOU HOLD THE

"UNION" UNLIMITED POLICY

OFFICIALLY SANCTIONED and SUPPORTED
by the Auto Cycle Union, and issued by the

Liverpool Victoria Insurance Corporation, Ltd.

Head Office: 43-49, Holborn Viaduct, LONDON, E.C.

THIS POLICY COVERS ALL RISKS AND INCLUDES A

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and several other attractive and unique features.

Full particulars on application to the Head Office, or any Branch Office of the Corporation.

All contingencies covered for private motor cars and Business Vehicles.

THE L.M.C.

New 4 h.p. Two-speed Model

L.M.C. Engine, 89 × 92, **IDEAL** for Sidecar. Handle Starting, Sprung Footboard.

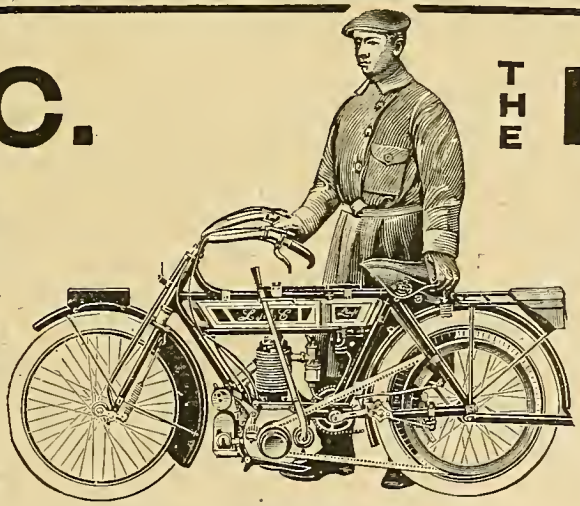
NON-STOP. FULL MARKS

Sutton Coldfield A.C. Reliability Trial,

17th February, 1912.

104 starters, but only 24 made Non-Stop Runs and secured full marks.

THE L.M.C. for Reliability.



3½ h.p. Touring L.M.C. Model.

NOTE THE LOW SADDLE POSITION.

THE L.M.C.

3½ h.p. Touring Model.

Variable Gear, Free Engine, Footboard Starting Device.

"JUST PERFECT" for solo touring. Low frame. Last mail advises latest Colonial success.

South Canterbury M.C.C Hill-Climb, Timaru, N.Z.,

28th November, 1911.

J. CLYMA, 3½ h.p. L.M.C. Touring Class. **FASTEST TIME** and third on formula.

The L.M.C. for Speed.

See 1912 complete Catalogue (free on application) for Record of Successes in all parts of the World.

3½ h.p. Touring Model from **£48** L.M.C. Free Engine Sets, **73/6** Spares for "Original" Quadrants.

Makers: THE LLOYD MOTOR ENGINEERING CO., Ltd.,
132, Monument Road, BIRMINGHAM.

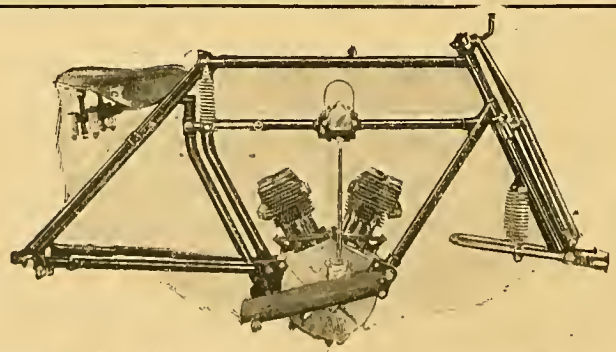
This Spring choose a Spring frame

BEST AFTER BAT TESTS

The "BAT" Spring Frame has stood the test of time. It was the first and is the only frame sprung both fore and aft which has been so tested. Minor improvements have been effected as the evolution of the motor cycle advanced, so that now the "BAT" SPRING FRAME is absolutely the last word in shock-absorbing devices as applied to motor cycles. It is eloquent of the difficulty that manufacturers have experienced in designing a really practical spring rear frame that nothing has yet been produced to seriously rival the "BAT" for giving the maximum comfort to the rider with the maximum of efficiency in the machine itself.

As the "BAT" makes motor cycling comfortable to the young and the less young in a manner in which no other can do—as it absorbs all road shocks and interposes a buffer between them and the rider as well as the vital parts of the motor—

IT MUST PROVE THE BEST INVESTMENT FOR 1912.



The Improved "BAT" Spring Frame for the 1912 Models.

The Catalogue explains fully. Write for it.

THE BAT MOTOR MFG. CO. PENGE, LONDON, S.E.

Camping and the Motor Cycle

By J.S.F.

HAVING read various descriptions from time to time in *The Motor Cycle* of motor cycle camping holidays, it has occurred to me that it would be of general interest to give my experience of the pastime, and describe how to set about acquiring a suitable outfit from the purely motor cyclist point of view.

I have only taken up camping in conjunction with motor cycling during the last year, but the fact that I have had a very large experience of this method of spending a holiday—alike by walking, boating, yachting, in permanent camps, and with and without tents in various parts of the world—may make my opinion of some value.

So far as my present readers are concerned, I need only give details to meet the requirements of a motor cyclist, but my former experiences have helped me very much in getting together an equipment which for compactness, lightness, and convenience will take a lot of beating. This outfit has been evolved rather than designed, and each trip provides me with fresh ideas.

In the first place, my machine (with which, on these trips, I use a sidecar whether I have a companion or not) is a 7 h.p. fixed engine Speke and Ramsden. As this make is not now on the market, I shall not be accused of axe grinding when I say I would not part with my machine for quite a lot. In spite of having considerable power at my disposal, I recognised at the start that the most important problem was to reduce weight as much as possible.

Weight Reduction.

The tent was the first item for consideration, and I ultimately decided on a Canadian type, with jointed poles, weighing 9 lbs. This tent is not uncomfortable for even three to sleep in, and has amply sufficient capacity for two. Cooking gear came next, and I at first used an acetylene stove. The troubles with this, however, such as giving out in the middle of preparing a meal, water choking the burner jet, etc., were so numerous that I discarded it after three trips for a pocket Primus outfit weighing 2 lbs. This I found eminently satisfactory, and I can stew a rabbit on it in a way that would make a "chef" of the "Ritz" envious—although "I ses it as hadn't ought."

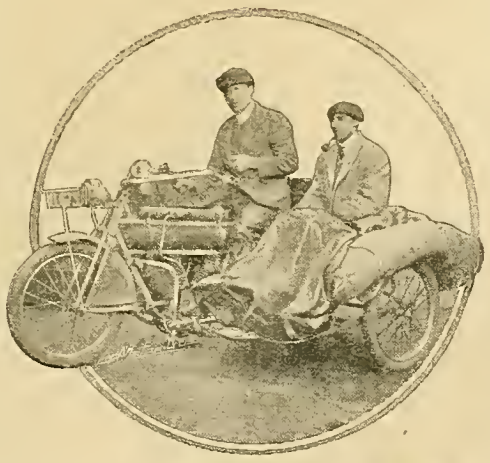
For pans I obtained a set of four in aluminium weighing 12 ozs. Two of these are stewing and two frying pans, the latter forming lids for the former, and there is one handle common to the lot. For packing they all nest into the largest. For water I used the usual canvas bucket.

Next comes bedding. For my part, I have much faith in personal comfort, and object to sleeping on the "hard" when it can be avoided. I therefore make use of a regulation army palliasse and pillow, which I fill with hay at the nearest farm. This has advantages and disadvantages. The first consist of more comfort and no necessity for blankets under one, therefore less weight to carry. The latter—if one arrives late on the ground, or a farm is not near, hay may be difficult to obtain, and also the hay has to be returned or disposed of in some way so as not to leave the ground in an unsightly condition. Besides these, I carry a ground sheet and three blankets. If I have a companion the allowance of palliasses and pillows is doubled, and an extra blanket has to be carried. The total weight of bedding for myself and companion is 30 lbs. This can be reduced very considerably by using eiderdowns instead of blankets, but as I have not yet tried these I cannot speak for them.

The Charm of a Nomad's Life.

One of the essential charms of a nomad holiday is to be able to pitch camp at any place which takes one's fancy, and without pre-arrangement. This may be ten miles from or actually in a village. It is necessary, therefore, to carry supplies of food, which should always be kept up to a certain minimum by replenishing *en route*.

For my part, I take 2 lbs. sliced bacon, 1 lb. castor sugar, ¼lb. tea, 1 lb. oatmeal, one tin condensed milk, salt, and 1 lb. beef dripping. To insulate these comestibles from vibration puzzled me a good deal at first, but I overcame the difficulty by using canvas bags for the bacon, tea, and oatmeal, and lever lid tins for the milk and dripping. I have recently attached a basket to the back of the sidecar. This I have found a great advantage, as in it can be placed a loaf of bread, fresh meat, butter, etc., without unpacking the larger kit. If I am absolutely vague as to the destination, I pick up these articles as I go along and early in the day, but, as a rule, one knows fairly well where one intends to stop, and then the provender is collected in the last village.



J.S.F. and his motor cycle and sidecar loaded with camping kit.



The enthusiastic camper does not confine his hobby to the summer months.

This may sound a lot of paraphernalia to carry about on a motor cycle, but it is wonderful into how small a compass it can be packed. The means of disposing it depend on the accommodation available, and this must vary.

My tent rolls up into a bundle 12 inches by 5 inches, and packs, together with cooking gear, food supplies, plates, knives, cups, bucket, etc., into an old suit case which happens to fit the space between the sidecar seat and the frame. The tent poles (in three pieces each about 2ft. long) are strapped with fishing rod to the sidecar axle and front stay.

The rugs and bedding (which are the most cumbersome items) are rolled in a canvas, which forms a cover for the motor bicycle, and is strapped to the sidecar above the mudguard. This leaves my carrier on the motor free for a case containing night wear and a change of garments in case of a wetting. As I remarked before, I believe in comfort, and I therefore sleep in pyjamas. *Verb. sap.*

Total Weight Carried 85 lbs.

The total weight of the equipment for two people works out as follows: Suit case mentioned, 28 lbs.; bedding, etc., 30 lbs.; poles, 2 lbs.; personal clothing, 25 lbs.; total, 85 lbs.

Besides the items mentioned above, there are numerous odds and ends which make for happiness. About 20 to 30 yards of good light cord enable one to dry bedding, etc., even if the ground be wet. It is a good plan to use the motor cycle gas generator for illuminating the tent. If it be advisable to remain two days or more in any one place, it pays to obtain a soap box to use as a store cupboard and table.

A Holiday Under Canvas.

Pitch camp as near a stream as possible—it makes washing, both personal and otherwise, easier. See that drinking water is reasonably accessible. Carry a small rifle; it is often possible to obtain permission to shoot rabbits, which not only helps the pot but adds to the sport of the outing. Fix on the outside of the equipment case a list of the essentials it should contain. Always check these after packing and before starting; anything forgotten means expense or discomfort, or both. Never pitch camp directly under trees, as no tent which can be conveniently carried on a motor cycle will withstand the large drops falling from trees during a heavy downpour of rain, the result being a fine spray which falls over all the occupants of the tent and soon causes great inconvenience. A description of a typical outing may be of interest.



A contrast—the camp in summer.

Bowdenism

(The science of simple control.)

Invaluable Advice.

If your controls are wrong you are bound to be in trouble. Therefore, before starting the 1912 season, give them a thorough overhauling.

¶ See that the control levers are working freely, but yet remain fixed in any desired position. Examine your brakes carefully.

¶ See that the wire mechanism is in good condition. Take up any slack in the inner wire by screwing out the adjustable stop. (An invaluable spare which permits the replacement of broken wires on the road without soldering is the Bowden Adjustable Wire Coupling. You **must** carry one. Price complete 1/3)

¶ Do not start the season without Handlebar Magneto Control. Both your hands are available for steering, and the levers will not jolt from the required position. Complete, 8/6 to 11/6.

¶ You know the value of Extra Air as an engine cooler, a petrol economiser, and a brake. The Bowden Extra Air Inlet fits to the induction pipe without soldering, and shuts right down when not required. Prices, 11/- to 13/-.

¶ If you have inverted levers a Hold-up Clip to release compression will save you a lot of trouble. Prices, 3d. and 6d.

¶ A few Spring Steel Clips (to hold one, two, or three wires) will keep your wires neatly in position. 1d. each.

What about a Bottom Bracket Gear, designed to fit existing machines of approximately 3½ h.p.?

Bowden Two Speed Gear

BOWDEN WIRE, LTD.

Pratt Street, Camden Town LONDON.

BLUEMEL'S



MODEL S
For Motor Cycles.

THE BLUEMEL MASCOT PLUG

can be relied on to continually give maximum power to the engine.

Its tough Steatite Insulation and perfectly

Gas-Tight Enamel Joint

are the two features of its construction which lift it "out of the rut"—make it reliable and the most efficient Plug made.

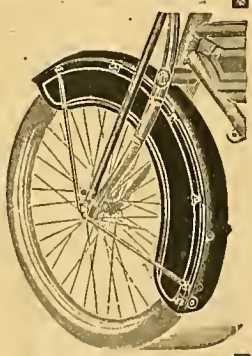
PROOF.

THE MASCOT PLUGS are fitted to Deasy, Rover, Lanchester, Maudslay, Sheffield-Simplex, Iris, Straker, Sunbeam, and Commer Cars.

Of all First-class Motor Agents

PRICE 3s. 6d. EACH.

MOTOR CYCLE SIDE GUARDS



Made of strong light metal, splendidly enamelled to suit colour of machine, and with simple fittings for quick attachment or removal, these side-guards are an extremely effectual protection.

Complete in sets of two pairs, one upper and one lower.

Write for List, Motor Cycle Dept.,

C. W. BLUEMEL & BROS.,
Wolston, near COVENTRY.
LONDON DEPOT: 37, Great Eastern Street, E.C.

A POSITIVE Guarantee against Puncture

This in brief is the Atlas Puncture-Proof Inner Case. You can run even on a burst tyre.

Saves money, worry, time. Adds considerably to the pleasure of the Motor Cyclist. Write for Booklet—sent free.

ATLAS NON-PUNCTURE INNER CASE SYND. Ltd.,
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HONISTER PASS CONQUERED

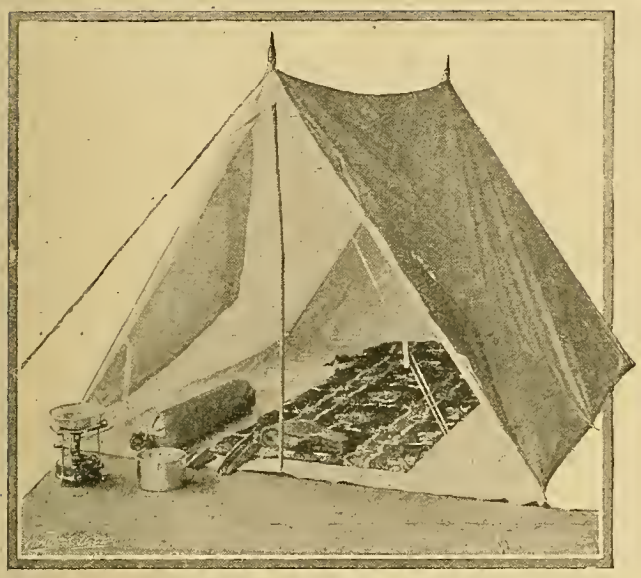
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ON

WAKEFIELD "CASTROL."

Mr. Hugh Gibson (3½ h.p. Bradbury and Sidecar). Mr. Vernon Taylor (3½ h.p. Rudge).

Both exclusively used Wakefield "Castrol."
C. C. WAKEFIELD & CO.,
27, Cannon Street, London, E.C.
C.D.C.

Camping and the Motor Cycle.—



A complete camping outfit by Messrs. John Piggott, Ltd. It includes tent for two people; weight about 5 lbs., 7ft. 6in. x 4ft. x 4ft. 4in. high, waterproof ground sheet, sleeping bag, Balaklava helmet, nest of aluminium saucepans, frying-pan, and Primus stove. The long rolled up package represents the tent complete, stowed away. The tent is held normally by pegs shown at the entrance.

In my case, the bicycle and camping are merely incidental to fishing—a means to an end—but the procedure is the same when camping is "it."

One day last year I started from Leeds at about noon for a stream in Cumberland, about forty miles west of Newcastle-on-Tyne. The distance is about 130 miles *via* Newcastle, where I had arranged to pick up a friend. This friend failed me so far as the holiday was concerned, but persuaded me to stay the night with him. I reached my destination at about 10.30 the following morning, having picked up steak, vegetables, eggs, bread, etc., at the last village—five miles from my pitch. With leave from my farmer—three miles beyond the pitch—I harked back and fixed up the tent, got out the cooking gear and arranged the larder. I then made my first mistake, for which I paid later on.

A Day's Fishing.

Instead of going to the farm again and filling the bedding with hay, I started in at once after the elusive trout. Getting back to camp at about two o'clock, I cooked three trout and had lunch. After a smoke I washed the dishes and repeated my former mistake. I fished till about 6 p.m., and, considering the state of the water, did fairly well, creeling nine. I then cooked supper and got things ready for turning in. At this time I was cooking with acetylene, and the process took at least twice as long as it should do, and now does.

I turned in about 9 p.m., and slept fairly well at first, but towards morning I began to find the ground harder and harder, and at 5.30 I was cooking porridge. After absorbing this I fished for about an hour, bathed, had a good breakfast of bacon and eggs, and made sure of a comfortable night by gathering hay at the farm. Having aired the bedding and made all snug, I went for a run of about fifteen miles to see a waterfall, which was a disappointment owing to the scarcity of rain.

Visitors to my Camp.

I intended fishing after dinner (stewed steak with plenty of vegetables), but, in spite of being five miles from the nearest village and only one house within three miles, I had so many visitors that I did not get on the water until the evening. My visitors were much interested in the equipment, but did not appear to credit my statement when I explained that it could all be carried quite comfortably on the motor cycle. The idea of anyone being content to camp out in the wilds absolutely solus seemed beyond them. I slept so comfortably that night that I felt quite ashamed of myself on waking up and finding it was 8 a.m. After a pleasant day's fishing (not much sport, but hot and comfortable), I packed up, burnt all rubbish, and started homeward at six o'clock. I camped that night alongside a convenient haystack south of Durham, and reached Leeds about eleven o'clock on the Tuesday.

And so to work.

As described, the proceedings may read tame, but the writer knows his limitations, and funks attempting to describe the attendant charms. A man with even less of a poetic temperament but a great deal more command of language would be able to write in glowing terms of the feelings of fitness and virtue consequent on early rising, fresh air, and the morning dip. He would probably further enlarge upon the sense of freedom due to absence of the conventions, the glorious vistas of sylvan and river scenery on opening the tent door at sunrise, the gorgeous appetite enhanced by spending day and night in the open and the odours from the pan, and the pioneer feeling of discovering new country.



Eddie Hasha (7 h.p. 8-valve Indian). The photograph was taken on the new three-lap track at Los Angeles, where Hasha recently set up new records. The ride is standing on the portion of the track from which the men get a start before ascending the 50° banking, which is easily discernible in the picture.

Questions & Replies



A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Inland Revenue Licence.

Q. A and B, having paid the £1 revenue tax for 1912, exchange motor bicycles, and transfer the numbers from one to the other in legal form. Can each be legally compelled again to pay the £1 tax in the same year, having only one machine in his possession?—A.A.S.

There is no need to take out a fresh local taxation licence. The £1 tax enables the one who takes it out to keep one motor bicycle at a time; it does not matter how often he changes his mount.

Hill-climbing with a Sidecar.

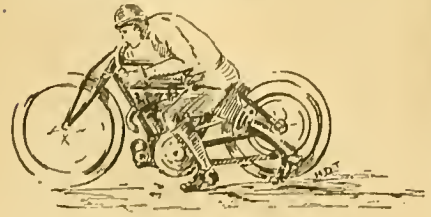
Q. I have a 1911 Scott and intend to use it with a sidecar. Would the machine pull a Canoelet sidecar well? That is to say take sidecar and passenger up Fitzjohn's Avenue or Netherhall Gardens.—B.T.

The machine in question would take a sidecar quite well and would negotiate Fitzjohn's Avenue with the greatest ease, but it might have a little difficulty with Netherhall Gardens. It would be advisable to write to the makers and ask if the gear fitted is sufficiently low to take a gradient of 1 in 7.1, which is the officially surveyed gradient of the last mentioned hill.

Magneto Cut-out.

Q. The new Bosch magneto has no terminal for a magneto cut-out. I propose to attach wire of cut-out to the h.t. terminal of plug. Presuming this will act all right, is it likely to do any damage to the magneto or cause misfiring?—W.M.

If you write to the Bosch Co. they will supply you with a contact breaker cover on which a terminal for the magneto switch is fitted. This would be rather better than attaching your switch wire to the plug terminal, the result of which would probably be to get a spark jumping from the earth terminal to the switch through the handle-bar when the switch was in the "off" position.



Pictures without Words. No. 1.

The Scott as a Weight-carrier.

Q. I am considering buying a 1912 Scott motor cycle, and I should be very much obliged if you will answer me the following questions: Has the Scott more troubles than a four-stroke motor cycle? What gradient does the Scott climb with a rider weighing about 220 lbs. and loaded with luggage for a long run.—M.C.D. (Koddaba, Egypt).

The machine you refer to in your letter is an excellent one, and we have no hesitation in recommending it. We do not think you would have more trouble than with a four-cycle engine. The machine would climb a hill of 1 in 5, or even worse, with this load without difficulty, and with the standard gear.

Timing Exhaust Valve.

Q. Will you be good enough to tell me the exact position of the piston in the cylinder when the exhaust valve commences to open?—H.F.

What you should aim at is to ensure the valve closing at the right point, which is, in most cases, when the piston is at the top of the exhaust stroke, or just after. If you set the valve to close dead at this point you can turn the engine back; note when the valve has begun to open, insert a spoke in the cylinder and this will tell you how far down the piston is when the valve begins to open. It should be about one seventh of the length of the stroke from the bottom, *i.e.*, when the flywheels have revolved through 135°.

Sunderland to Southampton.

Q. What should be the exact power of a motor cycle with 72 mm. bore and 75 mm. stroke? Which is the best motor cycle route from Sunderland to Southampton to avoid all big towns? How long would it take to travel with the motor in question?—R.M.

If the engine is a modern one it should develop nearly 3 h.p. The exact power we cannot give; this could only be obtained from a brake test. Your best route would be as follows: Sunderland, Durham, Darlington, Northallerton, Boroughbridge, Wetherby, Ferrybridge, Doncaster, Retford, Tuxford, Newark, Grantham, Stamford, Kettering, Northampton, Towcester, Brackley, Oxford, Abingdon, East Ilsley, Newbury, Whitchurch, Winchester, to Southampton. It would take you two days to cover the journey comfortably.

Registration and Licence.

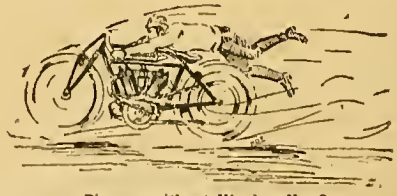
Q. I have an 8 h.p. Rexette tricar. What licences am I supposed to take out for it, and is it registered as a motor cycle? Is weight taken into consideration on a three-wheeler?—R.A.M.

You will have to pay £1 local taxation licence, but must register as a motor car, which also costs £1. The fact that it is over 3 cwt renders it a motor car as regards registration, but the fact that it has not more than three wheels renders it a motor cycle as regards local taxation licence.

A Magneto Query.

Q. About last October I had trouble with the magneto rocking arm of my twin sticking and followed your advice to readers in previous issues to increase slightly the size of the hole in the fibre bush in which the stud of the rocking arm fits, also to clean the stud. The machine has been stored during the weather in a dry shed, and I find, on examination, that the rocking arm is again immovable, in fact it sticks so badly that firm pressure with the fingers will not move it. Can you suggest a remedy to prevent this occurring again? It appears to me that the slightest dampness must affect the fibre bush to a considerable extent.—X.Y.Z.

In more obstinate cases the cure is to take a taper three cornered tool, such as the tang of a small file, and gently ease the hole in the fibre, inserting the file-tang on both sides. With the spring of the rocking arm or bell crank disconnected the arm should be sufficiently free to fall by its own weight. If it will not do this, the hole must be eased till it does A better method would be to obtain a small reamer a fraction larger than the stud on the arm and pass it through the hole. Sticking of the arm is about the only thing that ever causes trouble with a magneto.



Pictures without Words. No. 2.

Cold Vulcanising.

Q. Could you give me any particulars of cold vulcanising? I have tried two patches on a red inner tube, and I don't think them a success. After three days I can pull patch off; it is not so secure as an ordinary patch. Do you think a tread can be fitted in this way to be a success?—SOLUTION.

A process of cold vulcanising at present in use is called the Ara. A small outfit costs 25s., and it is quite satisfactory. Although the instructions read somewhat complicated, the work is quite simple. The great thing is to put everything out ready in order before commencing, and with a watch handy on the table the times for vulcanisation can be properly adhered to. The address of the firm which supplies the outfit is Ara, Ltd., 100, Long Acre, W.C.

A Twin for Sidecar and Solo Work.

Q. Can you tell me if the 6 h.p. Enfield sidecar motor cycle is: (1.) A thoroughly reliable combination? (2.) An expensive machine in upkeep? (3.) If the motor cycle is a satisfactory mount for solo work? (4.) If too heavy for solo work, would you recommend me some machines which would better suit me for solo and sidecar work? My passenger and I weigh together 25 stones, and I should occasionally want to take luggage as in touring. I fear a belt drive for sidecar work. I would probably do more solo than sidecar driving, yet if I had to make my choice would rather have a machine a little unwieldy for solo riding than one under-powered for sidecar work. Can I hit off the happy mean?—F.R.L.

(1.) The machine is thoroughly reliable. (2.) It is not expensive to keep up. (3.) It will be quite satisfactory as a solo mount, and not heavier than other powerful twins. (4.) As far as we can gather from your letter, we think it would suit your purpose admirably.

Darlington to Pwllheli.

Q. Please tell me the best route to take between Darlington and Pwllheli (N. Wales). I have done this ride a few times and have always gone *viâ* Wetherby, Leeds, Huddersfield, Oldham, Manchester, Altrincham, Chester, Conway, etc.—J 355.

We should recommend the following route: Darlington, Scotch Corner, down Leeming Lane, towards the end of which you branch off to Ripon, go through Ripley; before reaching Harrogate go through Blubberhouses, Skipton, Gisburn, Clitheroe, Whalley, Preston, Ormskirk, and Liverpool, cross by ferry to Birkenhead, go through Chester and Rossett, where turn left for the road joining the Holyhead Road near Corwen, then branch off for Bala and go through Festiniog to Pwllheli, or, if you prefer it, go *viâ* Conway. The distance is nearly 220 miles. Your old route contains far too many towns to suit the average rider. Another alternative is to go through Wetherby and straight down the Great North Road as far as Doncaster, then go through Tickhill, Worksop, Chesterfield, Baslow, Bakewell, Buxton, Congleton and Northwich, to Chester.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"Southern" (Lewisham).—Albion and Roc gears with sidecar.

"R.B." (Andover).—3½ h.p. Ivy-Precision with and without three-speed gear and free engine.

"E.L.L." (Basingstoke).—Mabon variable gear on 3½ h.p. Triumph and sidecar.

"W.S.W." (Lowestoft).—Bowden and Mabon gears on 3½ h.p. standard Bradbury.

"R.F." (Banbury).—Binks carburetter, Rom tyres, Lomax band, Atlas inner case, and Morgan Runabout.

"L.D." (Godalming).—4 h.p. Rex de Luxe.

"H.J.C." (Wimbledon).—Morgan Runabout, with regards reliability and running costs.

"A.M.H." (Hinckley).—3½ h.p. two-speed Alldays and sidecar, also G.W.K. cyclecar.

"J.O." (Edgbaston).—3½ h.p. 1911 Zenith-Gradua with sidecar.

"G.D.M." (Moneymore).—4½ h.p. Excelsior, with Villier clutch and sidecar.

"F N" (Southampton).—1908 or 1909 four-cylinder F.N.; reliability and speed over long distances.

"F R.L." (Roscrea).—3½ h.p. and 6 h.p. Zenith-Graduas. 3½ h.p. two-speed Bradbury, and 6 h.p. Enfield with and without sidecar.

CLIMBING RED BANK, GRASMERE.



A gradient steeper than Honiste[r] Pass, but of good surface. The motor cyclists are F. Smith (5-6 h.p. Clyno sidecar) and W. B. Little (3½ h.p. Rudge).

An Improved Chain Belt.

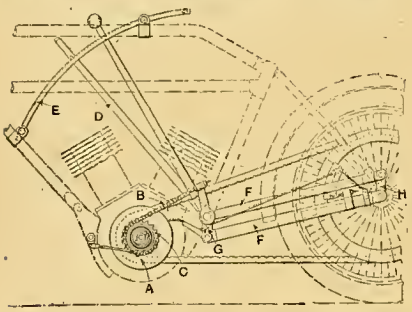
This chain belt comprises a series of built-up links A connected by hooks B. The links A comprise side plates C D, formed of sheet metal and bent over to receive leather or other friction pads E.



The plates C D are connected by rivets F, the two upper of which are engaged by the hooks B.—H. S Yoxall and C. W. Thorneycroft, No. 2,538, 1911.

The Matchless Variable Gear.

A variable pulley having a movable flange A is used, the flange being operated by a chain B passing round a sprocket C



and connected to a lever system D, working in a quadrant E. With this pulley is employed a belt tensioning device which comprises duplicated frame members F

PATENTS

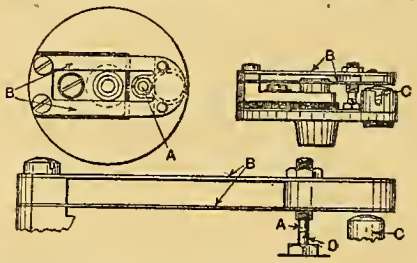
BY

ERIC W WALFORD, F.C.I.P.A.

connected together by depending links G H. The rear wheel is carried at the lower end of the link H, and the link G is extended on the opposite side of its pivot to form a hand lever, also working in the quadrant E. By operation of the lever D, the lower stay is moved in relation to the upper, providing an adjustment for the belt.—H. A. and C. R. Collier, No. 6,857, 1911.

A New Bosch Contact Breaker for High Speed Engines.

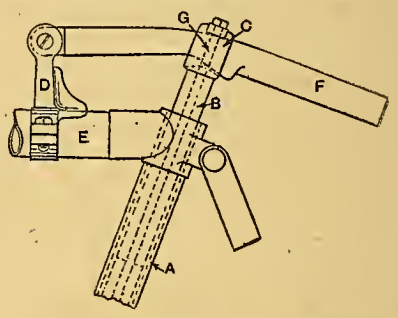
At high engine speeds the ordinary contact-breaker blade may work erratically



owing to the centrifugal action. In this case the blade moves endwise, the movable contact A being mounted on a pair of spring arms B which run parallel with one another, and is moved endwise by means of a button C which is actuated by a cam. As the blades are parallel the movable platinum contact A travels towards or away from the fixed platinum contact D in a straight line, so that arcing when the contacts senarate is prevented.—R. Bosch, No. 29,678, 1911.

A Spring Seat-pillar.

Working in the frame tube A is a spring seat-pillar tube B, the upper end of which is forked at C. A bracket D is clipped to the top tube E, and pivoted to this is the seat arm F, which is adapted to fit in the forked end C of the tube B, and carry the



saddle at any suitable point. The stem F is slotted for the passage of a rod G, which operates the adjustable spring mechanism of the tube B. The exact construction of this latter feature of the device forms the subject of an earlier patent, No. 19,991, 1909.—J. Smith, No. 29,069, 1911.

Lubricating Oils.

We are informed that the use of Sternol A. oil is gradually, but surely, increasing among motor cyclists.

The Easter Demand.

Excelsior motor cycles are in great request this year, and the makers, Messrs. Bayliss, Thomas and Co., Coventry, inform us that the demand has greatly exceeded their expectations.

A Tyre Guarantee.

Messrs. John Piggott and Co., who are marketing the J.P. rubber-studded cover illustrated on the 22nd ult., are issuing a printed guarantee with each cover with conditions as to measuring distance, horse-power to be used, and weight to be carried to which the guarantee applies. Readers who contemplate purchasing these covers can obtain copies of the guarantee on application to 117, Cheapside, E.C.

Catalogues Received.

The catalogue of Messrs. Gough and Co., Park Road, Hockley, Birmingham, is used to illustrate and describe motor cycle saddles in many forms, various types of tool-bags, spare belt carriers, and telescopic luggage carriers.

The latest catalogue of Gloria sidecars, the excellent springs and neat attachment of which created great interest at the last Show, is to hand. Applications for copies should be made to the Gloria Cycle Co., Ltd., Coventry.

A leaflet describing the 3¾ h.p. Sun-Precision motor bicycle. This machine follows standard lines throughout, and is made by the Sun Cycle and Fittings Co., Ltd., Birmingham.



Acetylene Gas Tubing.

A sample of acetylene gas tubing has reached us from Mr. J. Atkinson, Rubber Works, Summer Row, Birmingham. This tubing has a canvas insertion between the layers of rubber, which makes it impossible to burst the tubing, and gives it very much increased life. The thickened ends are carried for some distance along the tube which it is claimed prevents cracking.

Equipment.

The following description of the accessories used by the machines which were successful in climbing Honister Pass on the 9th inst. may be of interest:

Frank Smith's Clyno had Palmer tyres, B. and B. carburetter, and Bosch magneto. He used Price's Huile de Luxe.

Hugh Gibson's Bradbury had B. and B. carburetter, Bosch magneto, and Clincher tyres. The engine was lubricated with Wakefield Castrol.

Bert Haddock's A.J.S. had Hutchinson tyres, Amac carburetter, and U.H. magneto.

Vernon Taylor's Rudge had Lyso belt, Hutchinson tyres, Senspray carburetter, and Eisemann magneto. He used Wakefield Castrol.

A Weighty Catalogue.

Fifteen tons of paper were, we understand, used to print the new edition of Gamage's Motor List, which is just published.

Tyre Reliability.

One of the John Bull cross grooved covers illustrated on page 262, March 7th, was incorrectly described. The one on the right was a new cover, the one on the left having covered 12,000 miles.

An Effective Road Clearer.

Messrs. Seabrook Bros., 57, Great Eastern Street, E.C., have lately introduced a bell with revolving gongs. It is very loud in tone, and should be an effective road clearer which is not offensive to the general public.

Wulfrunas in London.

Harrods, Ltd., Brompton Road, S.W., have a sample of the Wulfruna motor cycle fitted with Thornton two-speed gear, in their showroom, and will be pleased to demonstrate the machine and the gear to interested readers.

Trade Announcements.

On November 16th, last year, we published a photograph of a G.N. Runabout with its owner, Mr. Cecil Whitehead, at the wheel. Mr. Whitehead has now decided, owing to the interest taken in the publication of this illustration, to join the firm of Godfrey and Nash, the makers of the G.N. Runabout. We are asked to publish this information, as Messrs. Godfrey and Nash think it is possible readers might be under the impression that Mr. Whitehead's appreciation was not disinterested at the time.

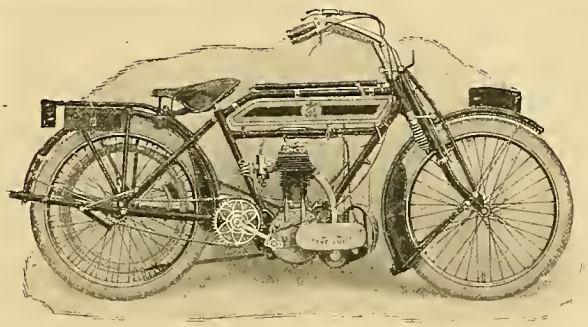
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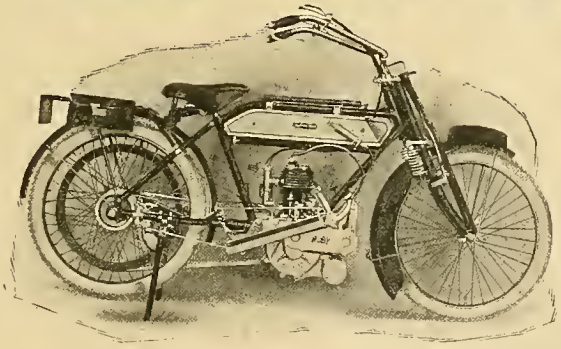
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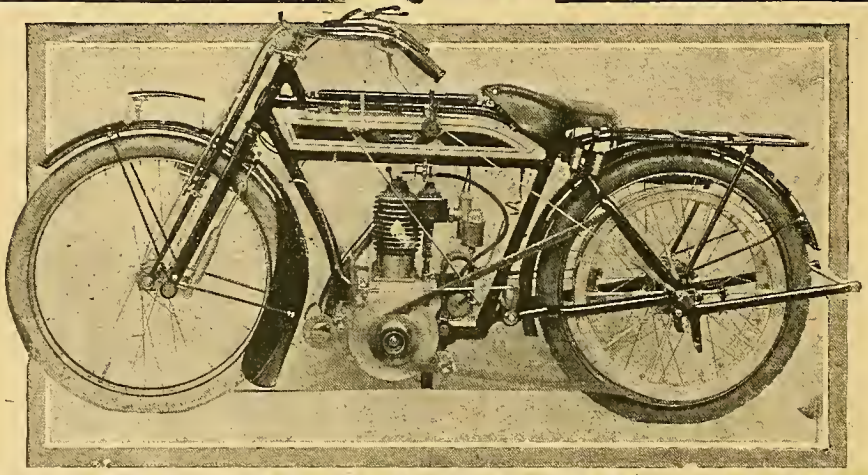
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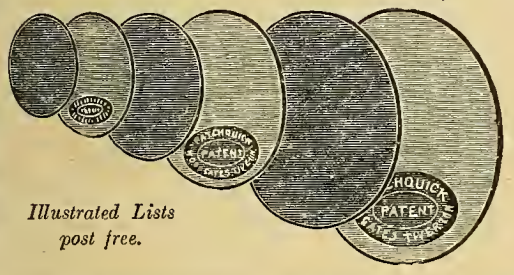
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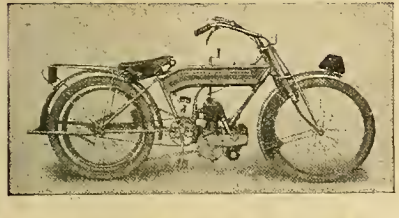
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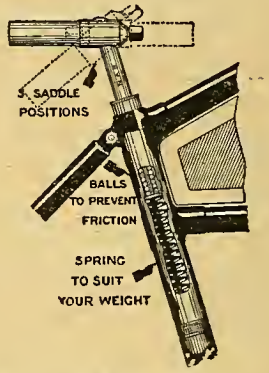
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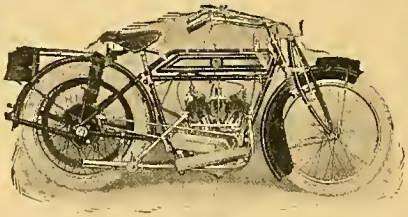
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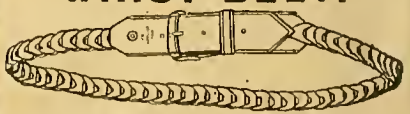
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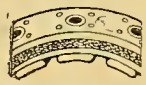
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THE MOTOR CYCLE

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Two-stroke Engines.

THE question of the handicap imposed on two-stroke engines has again come to the fore. Both owners and manufacturers of motor cycles fitted with this type of engine are complaining that the handicap is unfair and think that the regulation should be repealed. Advocates of the two-stroke engine claim an increased efficiency for this type amounting in some cases to 60%; theoretically they should claim nearly 100%, because the number of working strokes is doubled, but owing to incomplete scavenging followed by a reduced charge and moderate compression the average claim is about 50 to 60%.

Now the A.C.U. handicap consists of multiplying the cubical capacity of the cylinder by 1.25 for air-cooled engines and 1.32 for water-cooled. If the gain in efficiency were only 32% this would bring the two types level, therefore the average claim of 60% means that if the cubical capacity were multiplied by 1.6 no great hardship would be imposed on two-stroke engines.

So much for theory, now let us consider how this theory has been borne out in practice, and what can be said in favour of reducing or removing the handicap complained of. In certain contests two-stroke engines are allowed to compete without any handicap, but up to the present they have shown no superiority in speed or power despite an increased fuel consumption. They have other prominent features, such as evenness of torque and great simplicity, and are therefore most comfortable to ride and easy to keep in tune, but on the road size for size we cannot admit they have shown themselves more than the equal of the almost universal four-stroke engine. If this be so why should the two-stroke engine be handicapped?

Number Plates.

IN the last issue we published an Editorial Note to a letter with reference to the position of number plates, pointing out that these should be vertical front and rear. Our attention has now been drawn to an action on the part of a superintendent of the Warwickshire Police, who, we understand, had threatened to summons certain riders because the registration mark on the front vertical plate was not sufficiently well illuminated by the lamp. The superintendent who made this threat stated that in his opinion the vertical plate used by motor cyclists was quite ineffective, and has, we understand, demanded that one of the A shape shall be fitted. Although we do not dispute the fact that the A shaped number plate may allow better illumination, no summons would prove effective against a motor cyclist for using *vertical* plates on the grounds that they were ineffective, because the Act distinctly states that the plates forming the identification mark shall be fixed, one on the front of and the other on the back of the machine in an upright position, so that every letter or figure on the plate is upright and easily distinguishable. In the case of a motor cycle the plate fixed on the front may, if it is a plate having duplicate faces conforming with the order, be fixed so that from whichever side the cycle is viewed the letters and figures on one or other face of the plate are easily distinguishable, although they may not be distinguishable from the front of the cycle. In strict accordance with these regulations the A plates would be illegal. The police can summon riders if the letters and numbers are insufficiently illuminated, but they cannot demand that a plate of any particular shape shall be fitted, provided the one in use conforms with the regulations.



The Pastime and Industry in France

BY DAGOBERT.

FRANCE is so near England, and the general touring conditions offer so little dissimilarity, that it is at first sight surprising to find such wide differences in the development of the motor cycle in the two countries. It is only necessary to frequent the main roads in the neighbourhood of London and Paris to realise that, notwithstanding the revival of which one has heard so much during the last few months, the Frenchman does not display anything like the same amount of enthusiasm for motor cycling as is shown by his neighbour across the Channel; it is further only necessary to examine a few of the principal types of machines to understand the entirely different conceptions of the pastime in the two countries.

Over 36,000 French Riders.

France possesses about 37,000 motor cyclists; the actual number of those paying taxes during the year 1911 was 36,549. The annual tax is almost self-collecting. Immediately after January 1st each motor cyclist is under an obligation to purchase a small plate at one of the tax gatherers' offices, or at one of the more important Government tobacco shops, and affix it to his machine. The plate costs 12 francs (10s.), and its presence on a machine is a guarantee that the tax has been paid. To safeguard against police proceedings in the case of theft, for the plate is generally clipped to the frame of the machine, and not soldered in position, it is usual for the purchaser to register his name at the office from which he has received it. Should the police discover a machine without a plate, they will generally take the trouble to verify the statement that the tax has been paid before instituting proceedings. It is obvious that the official returns based on the number of plates sold represent the minimum number of motor cycles in use, for there are a few riders who will run the risk of using their machines without a plate, a few more make one plate do service for two machines, and nobody pays the tax unless the machine is going to be used.

In addition to the annual tax, all motor cyclists are obliged to pass an examination and take out a driving licence similar to that issued to motor car drivers. A charge of 20 francs (16s.) is now made for the driving licence, although it was formerly delivered free. It is considered that this is an excessive charge, for, although the licence never requires renewing, it is hardly equitable that the driver of a 2 h.p. lightweight should have to pay as much as a man in charge of a 60 h.p. car. The French system gives a certain guarantee that the drivers are competent, and also allows of efficient police control, for each driving licence bears the portrait of the holder, and a duplicate photograph is kept at the police headquarters.

Last year was the high-water mark of the number of motor cycles in use in France. Six years ago interest began to wane in the sport, and the number of machines gradually dropped until in 1909 it had reached the low figure of 26,465. The following year there was a slight increase, and last year there was a big jump to the present record figures. Although the metropolitan district comprises the greatest number of motor cyclists, the movement is proportionately more strongly developed in several of the provincial centres. At Marseilles, Lyons, Boulogne, and the manufacturing towns of the North, around Havre, along the shores of the Mediterranean, and at the foot of the French Alps, motor cycling is very popular; it is rather interesting to note that it flourishes better in the hilly districts of France than on the plains.

The Bad Roads near Paris.

As Paris is the centre of the motor car industry, nine-tenths of the national output being from within a radius of five miles of Nôtre Dame, it is rather surprising that it should not be the same for the motor cycle. However, a city with an intense manufacturing belt around it, is hardly ideal from the standpoint of the motor cyclist. The Parisian, in whichever direction he wishes to ride, must pass over miles of ill-paved roads, sometimes of such an atrocious nature that it is painful to drive over them on a well-sprung car. It cannot be doubted that this difficulty of using a motor cycle in the immediate neighbourhood of Paris is in a certain measure responsible for the lack of riders.

In comparing the number of motor cyclists in France and England it must be borne in mind that the Frenchman does not have the same amount of leisure as the Englishman. To the average man the Saturday afternoon holiday is an unknown institution, and even the annual holidays are of shorter duration than at home. Most of the pleasure riding has to be indulged in on summer evenings, Sundays, and on public holidays.

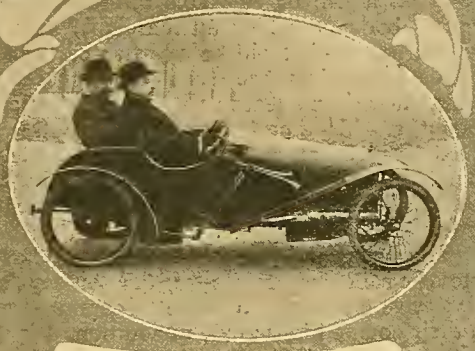
Club Life in France.

France does not possess a national body for the control of the sport. As a number of Englishmen have recently taken part in events organised by the Autocycle Club of France, an impression has arisen that this club has control of the sport. In justice to others, however, it should be pointed out that the Autocycle Club of France is only a metropolitan club, and in this respect differs in no way from the Motocycle Club of France, also with its headquarters in Paris. The two clubs are rivals, and they have both been very active in connection with the present revival. The only other organisation in the capital is the Touring Moto Club, an entirely amateur body. In the provinces, particularly at Lyons, Marseilles, and at Roubaix, there are very prosperous clubs, in no way inferior to those in the capital.

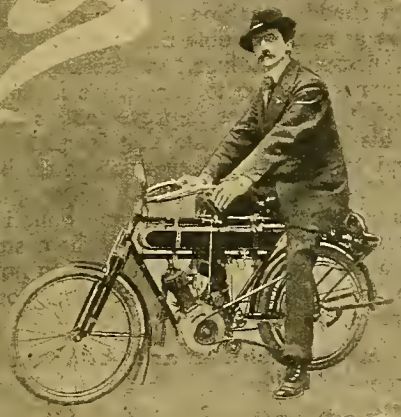
THE MOTOR CYCLE IN FRANCE.



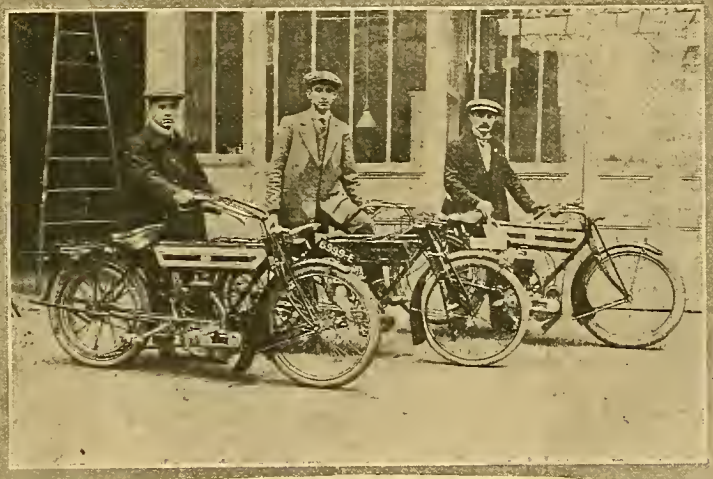
A roadside scene in France. In the foreground is a Triumph. The lady rider of the tandem machine is adjusting her overalls before mounting.



The Baby. The latest model cyclecar on the French market.



M. Chartier-Desvarennes, president of the Motocycle Club de France, on his lightweight Magnat-Debon.



Three riders of British machines who figured prominently in French competitions last year. The machines are Triumphs and a New Hudson.



Start of a long distance town to town race in France.



Two French trade representatives and their T.T. Aloyon mounts.

The Pastime and Industry in France.—

Theoretically, the Automobile Club of France should exercise a control over motor cycling, but in practice it appears to have too much contempt for the humble two-wheeler to pay any attention to it whatever. As the present active period is likely to continue, it will be advisable to create a central controlling body, on which all the clubs, both metropolitan and provincial, will be represented. As the Automobile Club of France has so long ignored the motor cycle, there is no reason why its patronage should be sought at this time. Not only have the two Paris clubs arranged an extensive programme of hill-climbs, tours, reliability trials, and road races for the present season, but in the various provincial centres equal activity has been shown.

Paris being easily reached, English riders are more interested in the doings of the Autocycle and the Motocycle clubs, and promise to continue to take part in their competitions; but, in addition, it is understood that a number of English riders will again accept the invitation of the Motocycle Club of Lyons to take part in its Circuit du Rhone race.

Superiority of British Machines.

It is admitted, on both sides of the Channel, that the British motor cycle is superior to that produced in France. The causes of this superiority are not far to seek. Whilst for five years the number of riders was steadily dwindling in France, and manufacturers were content to turn out machines from year to year without any attempt at improvement, the English clubs were holding trials and competitions which not only stirred up enthusiasm but materially contributed to the all-round improvement of the touring mount. In the hey-day of its prosperity, the motor cycle in France was an instrument of sport, and as such it became more powerful, more noisy, and more dangerous, until at last it was abandoned entirely.

Even now, in motor car circles, the impression prevails that the motor cycle is a noisy, fast, dangerous machine subject to frequent attacks of breakdown. What has been lacking in France has been that close collaboration between the every-day rider and the manufacturer which, in England, has resulted in the production of the comfortable all-round touring mount. French motor cyclists, when brought face to face with English machines, are very much surprised to find that they are fitted with powerful engines, but that the power is not used exclusively for speed, but also in order to make them more comfortable, more reliable, and better hill-climbers.

From One Extreme to the Other.

From the powerful, heavy, road-racing type of machine, the change has been towards the opposite extreme—the lightweight single or twin. As an example may be mentioned the Peugeot Co., one of the largest in France, which formerly marketed a large number of 7 h.p. twin-cylinder machines, but is now doing most of its business with a twin-cylinder model of 55 × 70 mm. bore and stroke. Lightweights such as the Motosacoche, Magnat-Debon, Moto-Rêve, F.N., and Alcyon are the most popular at the present time. On these low-powered machines, frequently of only 330 c.c., the French makers do not fit such improvements as clutches and variable gears; indeed, the makers claim that by reason of the low weight they are not at all necessary. There is, however, a tendency to follow on English lines, and an example of this can be seen in the twin machine just produced by the Clément Co., one of the largest firms in France devoted to cycle construction. Their machine is one of the very few in France to be fitted with a clutch and variable gear, and, if we may judge by its success, the example is one that is likely to be followed. Perhaps the more genial climate of France is responsible in a very large measure for the neglect of protection on motor cycles. Certainly this is true in connection with pedal cycles, and it is doubtless because fair weather can be counted on with a greater degree of certainty south of the Channel than on the opposite side that French riders will accept totally inefficient mudguards and inadequately protected parts which would not be tolerated at home. We have never had mid-winter motor cycle trials in France, which probably explains why many manufacturers have not discovered that there are other considerations than speed.

The French Market.

The French trade has, unfortunately, to struggle against a demand for very cheap machines. The riding public has not been educated to the importance of quality, and too often fails to see the difference between a shoddy machine at £30 and a high-grade production at nearly double that figure. Refinements in finish, first-class fittings, and detail improvements all cost money, and so long as price is the first consideration any important improvement is hardly possible. This difficulty is one that English firms have to contend with when endeavouring to do business in France. They have, primarily, a better grade and a more costly machine than is usually built in France, and its price is further increased by the customs tariff. Notwithstanding this, it is satisfactory to note that at least two English firms have secured a good position on the French market.

Passenger Machines and Attachments.

The sidecar is altogether unknown in France, and as the trailer has long gone out of existence, for it was found to be dangerous and too costly, the taxation for this extra seat being the same as for the motor cycle, only solo machines remain. Instead of taking up the sidecar, the tendency is towards the development of the cyclecar. On every hand new machines are being brought forward, and both large and small factories are carefully studying the problem. Having developed the motor cycle to a very high degree, it seemed but natural that English makers should seek to improve it by adding another seat. In France, manufacturers do not start out with a perfected motor cycle, and their tendency is to work down from the motor car. Almost all the cyclecars on the French market are simplifications of the full-grown car, and are really very inaccurately described by the newly-coined word "cyclecar." If the existing gap between the car and the motor cycle is filled by the French—and I believe that it will be—it will not be by a glorified motor bicycle but by a simplified car. The Frenchman who can afford to buy a high-grade motor cycle capable of doing solo and passenger work, asks for something that really looks like a car, and if called upon to choose between a proved sidecar and an untried voiturette on car lines would almost always vote for the latter.

OCCASIONAL COMMENTS.

By "IXION."

Consumption Comparisons.

After reading the leading article in the issue of March 14th (with the above title), several of us began making enquiries. The point of the article was that motor cycles ought to be far more economical in petrol consumption, as compared with a 15 h.p. car. Judging by weight, which including passengers in each case is as 3 cwt. to 30 cwt., the car should require ten times as much petrol as the bicycle, whereas in reality the fuel proportions are as 1 to 5 (20 m.p.g. for the car, 100 m.p.g. for the bicycle). Judging by cylinder capacity, the consumption is proportionate, the car engine being just about five times larger than the bicycle's. The writer's view was that the different ratios of weight and area to atmospheric resistance may have something to do with the puzzle. My own opinion, based on many observations, is that there is a far greater waste of petrol at two points with the motor cycle. Excluding specially tuned machines, competing in consumption trials, there is often a great waste on motor cycles owing to the vibration and the wear of the float needle. A large percentage of privately-owned machines have leaky float needles and jumpy float needles; either the machine is leaking when at rest, with the petrol turned on, or it leaks in motion, when the tiny needle keeps jumping off its seat.

In the case of the car the needle is of substantial dimensions, and seldom wears much in prolonged use; while, owing to the complete springing of the chassis, it is unusual to find wet petrol slopping about on the lid of the float chamber as too often occurs with a bicycle. Secondly, there is a great waste with 90% of motor cycle engines, owing to partially atomised petrol being blown out at the air holes, when the inlet valve closes; these air holes are very close to the cylinder, and if the hand be placed close to them with the engine running, a wet spray is usually discernible.

On a car the main air intake is generally a long way from the inlet valve, and though wet spray may be blown back, it never reaches the air intake, and is not lost or wasted; if there be an air intake near the inlet valve, it generally possesses some type of light quick-acting valve, which will shut at the first blow-back and trap the backward rush of vapour.

To speak of more concrete instances, I do not think any of several cars within a short radius of my house waste an ounce of fuel in 100 miles, while I am sure the motor cycles in the same radius waste an amount that cannot be measured. Experiments on the bench, with long inlet pipes, proper mixing chambers, and air holes distant from the valve chamber, would soon prove what waste really exists in this respect.

The Selection of Overall Leggings.

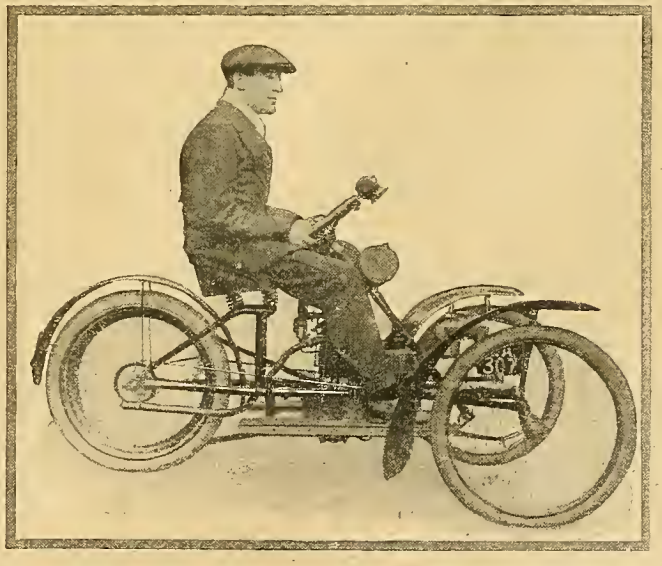
May I offer a few suggestions to riders who are now purchasing overalls and other garments. A very fruitful cause of unnecessary expense exists in the purchase of inferior overall leggings. A good pair should be cut exceedingly loose throughout, and a tall rider may have some difficulty in obtaining a pair of sufficient size. If they are at all tight in the fork, they are certain to split as soon as the rider mounts or dismounts hurriedly. If they are at all tight in the leg, the boot is sure to rip them badly; the leg should be made very wide by the insertion of a gusset, which can be folded in under the fasteners, when they are finally adjusted.

The strap which passes under the boot is often too short to admit of a stout boot being worn, is of poor leather so that wet soon destroys it, or is very flimsily attached to the sides of the legging.

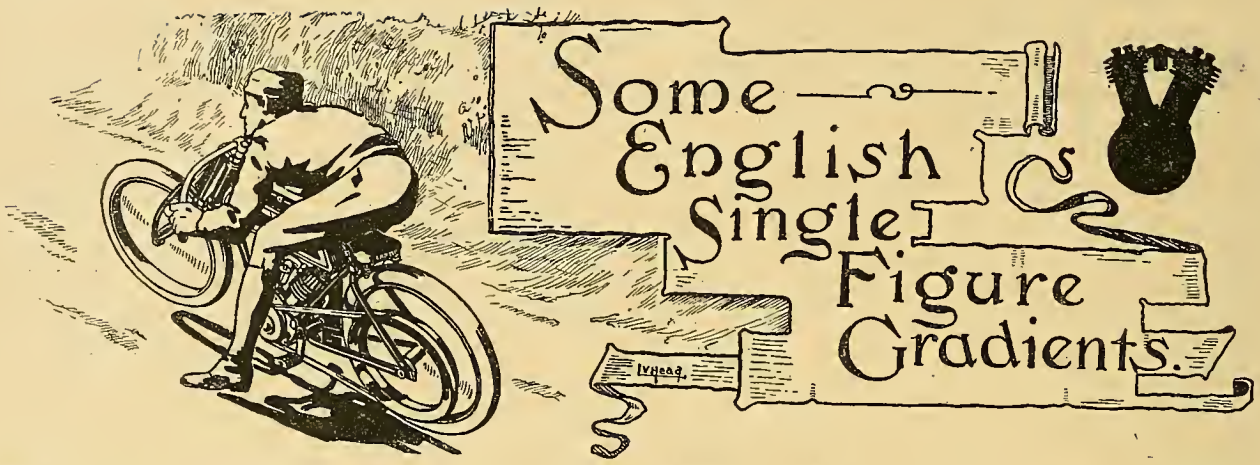
It is an open question whether a seat is desirable or not; with a seat the leggings are likely to be badly ventilated, and most uncomfortable; without a seat, the rider is likely to suffer if he allow his saddle to get soaked in rainy weather. On the whole, I prefer a pair which comes high enough in front to cover the abdomen, and so prevent chills; but without a seat, in which case great care should be taken to protect the saddle in bad weather.

The coat may be had either in the form of a light waterproof, or of a heavy jacket, possibly including a leather breastplate and warm lining, waterproofed externally. Owing to the vagaries of the English climate, the amount of warm clothing required is always changing, and I personally prefer to keep the protections from rain and cold separate. Thus I employ two jackets, one of which is a waterproof pure and simple, the other being a thick tweed garment with leather breastplate insertions.

The weak points of most waterproof coats are want of looseness over the stomach and want of protection from wet entering at the neck. If the coat be at all tight over the stomach the bottom button will tear off and take a portion of the coat with it if the sewing holds, or rip its buttonhole whenever the rider does "splits" in mounting or dismounting. The neck, on the other hand, cannot be too good a fit; some riders use waterproof coats which do not fit the neck at all closely, and wrap a huge woollen cravat round the neck to fill up the interstices caused by the bad fit. A sopping wet muffler is most disagreeable.



The poor wee manufacturer is being outdone while the craze for home-made machines lasts—but we predict it will not be for long. The runabout above illustrated is a single-seater fitted with a De Dion engine and built by P. C. Boxer, of Brockley, S.E. Its chief drawback appears to be the absence of springs.



THE object of this article is to give our readers a few details regarding certain hills which form good tests for keen motor cyclists. Nothing is more fascinating to the motor cyclist than a rapid ascent of some difficult hill, the steeper the better, and, if one may judge by recent events, the keen and sporting rider will never tire until there remain no hills which he cannot easily climb. The suggestion that we tabulate a list of noted acclivities reached us from Mr. H. Wyndham Wood exactly a month ago, but, singularly enough, we had already commenced a list, realising how useful it would prove so long as the hill-climbing mania lasts. In some cases the figures given are only approximate, but are sufficiently accurate to give a fair idea of the gradients:

ARMS HILL (near Henley-on-Thames).—Length, approximately 1,200 yards; maximum grade 1—3, 600 yards 1—5½. Surface mostly bad; very greasy in wet weather. Two bends.

ASTON CLINTON (near Tring).—A long rise with a maximum gradient of about 1—8½. The chief difficulty is at the start, where a sharp rise occurs directly after rounding a right-angle corner to the left. After this the gradient becomes easy, and care must be exercised at the left-hand curve, which is worse than it appears to be. The hill then gets gradually steeper to the finish.

BARBROOK MILL HILL (near Lynmouth).—Length, 906 yards; maximum gradient, 1—3.64. The road is fairly straight, but rises 343ft. in the above distance, and the surface is usually very bad.

BIRDLIP HILL (near Gloucester).—Length, 1 mile 140 yards; maximum gradient, 1—5. The easiest grade on the hill is 1—15. There are no sharp corners, but three curves, of which the top is the most severe. The road surface is usually good, but after rain becomes very treacherous.

BRASTED HILL.—Length, about ½ mile; maximum gradient, 1—5½. Two bends, between which lies the steepest part of the hill. Surface fairly good; neither of the bends severe.

CUDHAM HILL (from Downe).—Length, 233 yards; maximum gradient 1—4.1, average 1—6.8. This is one of the most severe pitches within easy reach of London. The surface is generally quite good.

CUDHAM CHURCH HILL.—Length, 416⅔ yards; maximum gradient 1—5.74, average nearly 1—8. There is a nasty bend on the steepest pitch. This hill is not to be confused with the last-mentioned, which is shorter, but steeper. The roads join near the top.

COUNTISBURY (Lynmouth).—Length, about 2 miles, in which the road rises 900ft. No dangerous corners, but surface usually soft and bad. The steepest part is near the bottom.

DASHWOOD HILL (High Wycombe).—This is not a single-figure gradient, but is included, as it is a well-known hill. Length, 1,180 yards averaging 1—16, steepest part 352 yards of 1—10.9. Quite straight, with good road surface.

EDGE HILL (Kineton).—Length, about ¾ mile; maximum gradient, 1—7; road rises 360ft. There are three bends, the first being the most severe. Road surface good.

FARLOW BANK.—Length, about ½ mile; maximum gradient, 1—5. Hairpin corner to left; two bad corners. Road surface bad.

GREENHOW HILL (Pateley Bridge, Yorks.)—Road rises 1,000ft. in about three miles. The maximum gradient is 1—5.4. There are two bad corners on the steep part. Surface good when dry.

KOP HILL (Princes Risboro').—Length, about ¾ mile, maximum gradient 1—5 (approximate). The road gets gradually steeper till about half-way up, when it eases slightly, then gets steeper till it reaches its worst a short distance from the summit. There are no bad corners; surface fair, but rather loose.

LYNTON HILL (Lynmouth).—Length, about ½ mile; maximum gradient 1—4½, average 1—6. Though short, this is one of the sharpest hills in England; it is rendered worse by a bad corner at the bottom. Surface bad.

MUSWELL HILL (Crouch End, New Southgate).—793⅓ yards; maximum gradient 1—9½, average 1—12. A convenient test for Metropolitan riders. Surface fair.

NETHERHALL GARDENS (Hampstead).—Length, 760 yards; maximum gradient 1—7¼, average rise 1—18. The hill is approached by a right-angle turn off the Finchley Road, the worst pitch being before the left-hand turn. Surface fair to good.

NEWNHAM HILL (Daventry).—Length, about ¾ mile; maximum gradient, 1—6. The hill commences just after leaving Newnham village, and rises gradually to the cross roads; there is then a fairly level part until the right-handed curve by the barn; here the gradient increases rapidly till it reaches its worst just before the end of the hill. Surface usually very bumpy. With a fast machine care must be taken at the cross roads, the barn, and at the top corner after the finish.

PETERSHAM HILL (Richmond).—600 yards; maximum gradient 1—9½, average 1—15. An easy ascent, but a handy test hill for London riders. Surface good; easy bends.

PORLOCK (Somerset).—Length, about 2½ miles; maximum gradient, 1—4. Road rises 1,200ft. in above distance. Surface very bad; two bad corners and one bend.

RIVER HILL (Sevenoaks).—Length, 1,444 yards; maximum gradient 1—9.8, average 1—13.4. Good road, easy curves.

STONELEIGH (MOTSLOW) HILL (Coventry).—452½ yards; maximum gradient, 1—9.34. Approached by right-angle turn, curves slightly right, then left sharper. This is a well-known Coventry test-hill.

SUNRISING (Stratford-on-Avon—Banbury).—1,093½ yards; maximum gradient, 1—6.43. Two sharp corners and a curve. Road surface good. The road curves to the left, then takes a sharp right handed turn, followed by a stretch of 1—7, the gradient getting worse towards the crest of the hill, where the road turns left again.

SUTTON BANK (Thirsk).—Length, 1,600 yards; maximum gradient, 1—3.9. The surface is generally very poor, and there is a sharp bend. This is one of the best-known Yorkshire hills.

Some English Single Figure Gradients.—

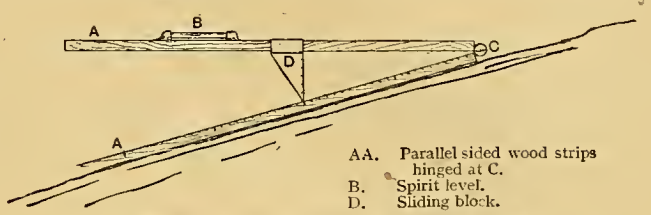
SAINTBURY.—Length, 2,341⅔ yards; maximum gradient 1—6.1, average 1—11.9. Surface moderate.

SWAIN'S LANE (N. London).—Length, 873⅓ yards; maximum 1—6¾, average 1—12.

WESTERHAM HILL.—Length, 1,764⅓ yards; maximum gradient 1—7.8, average 1—13.4. Good road.

WILLERSEY HILL.—Length, 1,206⅔ yards, in which road rises 406.3ft.; maximum gradient, 1—5.9. Two corners; surface poor.

The above list gives a few of the better-known test hills, but does not aspire to being in any way a complete list. *The Motor Cycle* will be glad to hear of any freshly-discovered single-figure gradients, in which case the following details should be sent if obtainable: Whereabouts, length of hill, and total rise in feet, maximum gradient and condition of surface. For the benefit of those who do not possess a gradometer, a simple device, which we illustrate, can be constructed by anyone with the slightest mechanical knowledge. Obtain two stiff strips of wood about 4ft. long and have them carefully planed so that their edges are straight and parallel; hinge them together at one end so that the lower edge of one strip and the upper edge of the other would if produced pass through the centre of the hinge. Now mark off the upper edge of the lower strip in quarter or one-eighth inches, starting from the centre of the hinge. Fix and adjust a spirit-level on the top strip. Now arrange a triangular block to slide on the under side of the upper strip. The face of this block must be exactly at right angles to the upper strip and be of a certain known length



A simple device for measuring the gradient of a hill.

To ascertain the gradient of a hill all that is necessary is to lay the lower strip on the ground (it is usually necessary to sweep away loose stones, etc.) and adjust the sliding block till the upper strip is level. The grade will then be found by dividing the height of the block into the length in inches, marked by block from centre of hinge. Thus in sketch. The height of block is 6in., the point standing at 2ft. from the centre of the hinge ∴ we get $\frac{24}{6}$; grade 1—4.

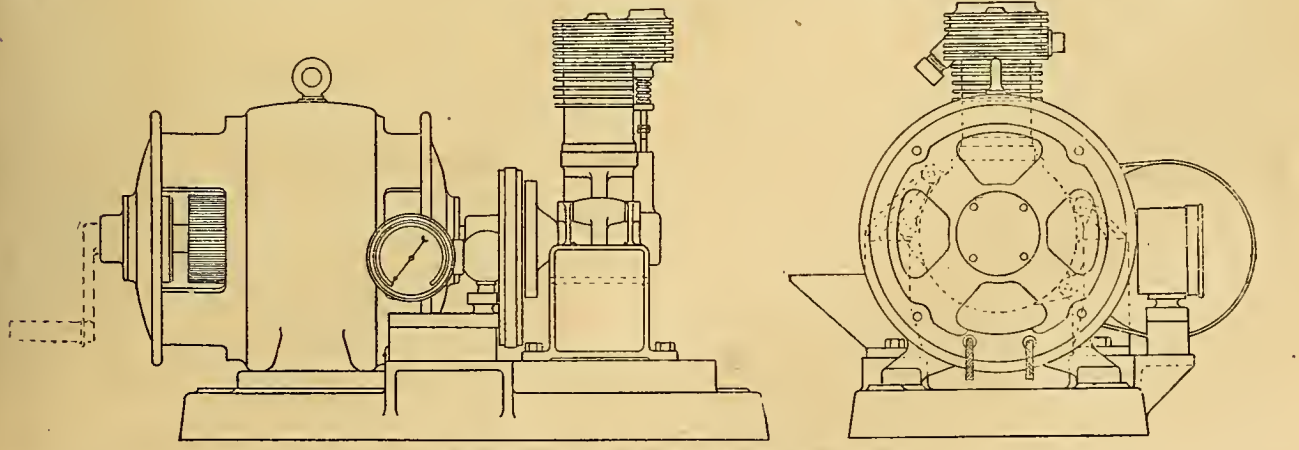
How the Horse-power of an Engine is Tested.

LAST week an article by "Ubique" described in detail the older and more usual methods of finding the brake horse-power of motor cycle engines, the following is a description of the latest device used for this purpose. Fan and Prony brake tests, though useful in themselves, do not give so accurate a result as an electrical test; moreover, the Prony test is messy, and the fan test attended with some amount of risk, as mentioned in the article referred to, for a broken blade is capable of doing considerable damage, owing to its very high velocity, and, in addition, the results have to be worked out on formula in each case, and allowance made for belt slip and other factors (including the height of the barometer, if absolute accuracy is required when the fan test is employed).

The electrical testing set shown in the accompanying sketch is made by the Phœnix Dynamo Manufacturing Co., Bradford. The arrangement is very neat, and the results given are most accurate.

The engine is supported in a universal cradle, designed to take any normal crank case, and it can be fixed in position in a few minutes; it is coupled to the generator by means of a flexible coupling, the two halves of which slide together. The generator is capable of absorbing more than the full power of any 3½ h.p. engine, and runs at any speed required from 300 to 3,500 revolutions per minute. A tachometer is supplied, also a starting handle and magneto bracket, thus the whole set is absolutely self-contained.

To take the load a large control panel is fitted, having a wide range regulator for absorbing the generator current, and also a field regulator for giving a fine regulation of load. An ammeter, a voltmeter, and a wattmeter complete the set and enable the horse-power readings to be taken very easily.



Side elevation. End elevation.

Electrical testing set with engine in position on the cradle.

PETROL CONSUMPTION COMPARISONS.

THE comparison of the respective petrol consumption in ton-miles per gallon of a car and a motor cycle is an interesting and complex question. It cannot, in my opinion, be considered to be the outcome of any one cause, but rather the aggregate result of a variety of causes, some acting in one way and some in another. To begin with, a cycle is over-engined when compared weight for weight with a car. Taking the figures given in *The Motor Cycle* of March 14th, it will be seen that the cycle engine is more than one-fifth the capacity of the car engine, while the weight (with rider and passenger) is only one-tenth that of the car, so, if both were expected to show the same consumption in ton-miles, and the car does 20 m.p.g., the cycle must do 200.

Consumption and Cubic Capacity.

Again, taking the figures given, the consumption appears to vary approximately as the cubic capacity; this is a natural result if the weight be neglected, but, as the weight of the cycle and rider is half what it would be if the same proportion obtained throughout (viz., one-fifth), we should expect a greater mileage because the cycle engine would be running light for a greater proportion of its time than the car engine, and another point in favour of the cycle is the greater efficiency of its transmission: against this it must be remarked that an internal combustion engine is running most economically when running under full load and at a constant speed, and these desiderata are more nearly approached on a car than on a cycle, partly owing to the greater number of gears.

It is quite true that a two or three-speed gear does not improve the petrol consumption of any given machine; in fact, it is more likely to have the opposite effect, but it makes it possible for a 300 c.c. engine to do the work hitherto done by a 500 c.c. so far as the climbing of stiff gradients is concerned. This enables a man to do any given journey with a smaller engine, and therefore with a lower petrol consumption, although the weight is possibly unaltered.

The Importance of Gear Ratio.

Then, again, the top gear ratio must be considered. Taking the average of fifteen cars, we find that the fourth speed comes out at 4 to 1. This, with 32in. wheels, is equal to 3¼ to 1 with 26in., the standard size on a motor cycle. Thus, when running on top, the car engine turns thirteen times while the cycle engine turns sixteen, the cycle being geared 4 to 1.

It may be urged that the cycle is not improved either in speed or running by raising the gear to about 3 to 1, and this is quite true, but it does not prove that the petrol consumption would not be better. The more even torque of a four-cylinder engine enables it to run comfortably on a gear which would be unpleasantly jerky on a single-cylinder, and the possession of four speeds allows the highest gear to be higher than it could be with only a single gear or two speeds at one's disposal. But against this it must be allowed that a motor cycle with its higher proportional capacity and lower gear will take hills easily on top for which a car such as that mentioned would have to drop to third or second speed.

If the speeds of the two vehicles differed much, air resistance would account for a great deal, as the power required varies as the cube of the speed; however, I am only discussing ordinary touring speeds, where the difference will not be excessive, though perhaps the bicycle will average a few miles an hour more than the car does. The area exposed to the air resistance, however, must be considered, and this, to give an equality in ton-miles, should be proportional to the weight, *i.e.*, if the car presents 30 square feet to the wind the cyclist should present 3 square feet, but except when the rider takes a racing position the area will be about three times that amount and consequently three times the h.p. and three times the amount of petrol will be consumed in overcoming it. To overcome this air resistance at 40 m.p.h. about 10 h.p. will be required by the car taking the constant as .002, but the cycle instead of needing only 1 h.p., the amount that should be necessary in proportion to its weight, requires 3 h.p. It must not be assumed that I regard 40 m.p.h. as an ordinary touring speed. It may represent 25 m.p.h. against a 15 m.p.h. wind.

Less Important Matters.

The tractive resistance between the tyres and the road is strictly proportional to weight, and so can be ignored. Water cooling makes an engine more efficient and possibly gives the car a further slight advantage, though, of course, the fact of the engine keeping cooler allows of a larger charge being admitted when required.

Advantages from a motor cycle point of view—

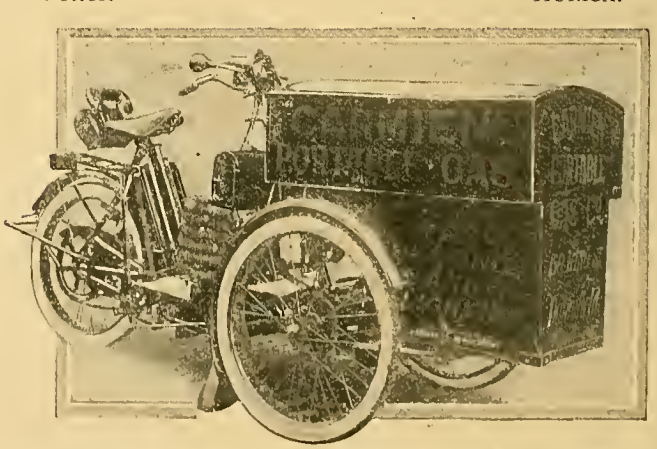
1. A more efficient transmission.
2. More running on top gear.

Disadvantages—

1. A larger engine in proportion to weight.
2. A lower top gear ratio.
3. The engine runs light for longer periods and the speed is less constant.
4. Greater air resistance in proportion to weight.

I have not discussed the carburetter question because so much depends upon the skill of the rider; in the hands of an expert a separate air control may be an advantage, but in the case of an inexperienced rider the automatic carburetter is undoubtedly the better.

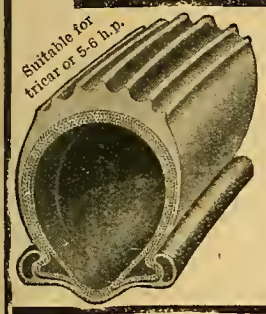
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A most popular cover at a popular price.

Extra strong casing.



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Made in 24", 26", and 28".
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2¼" - 19/- ,,
2½" - 20/3 ,,

As a cheap cover this cannot be beaten.



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Made in 24", 26", and 28".
2" - 42/3 each.
2¼" - 44/- ,,
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Steel and rubber studs, an ideal all-weather non-skid.

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⅞in. .. 1/9 per foot. 1in. .. 2/4 per foot.

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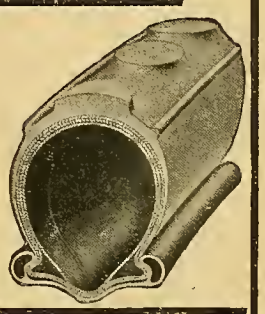
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Extra Heavy Rubber Stud or 7 line pattern	13/6
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Suitable for 3½ to 5-6 b.p.



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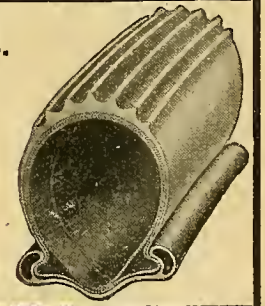
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Lightweight B.

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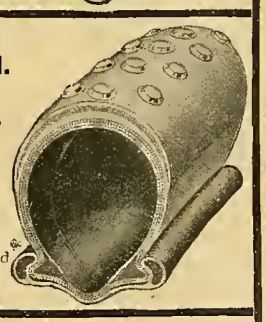
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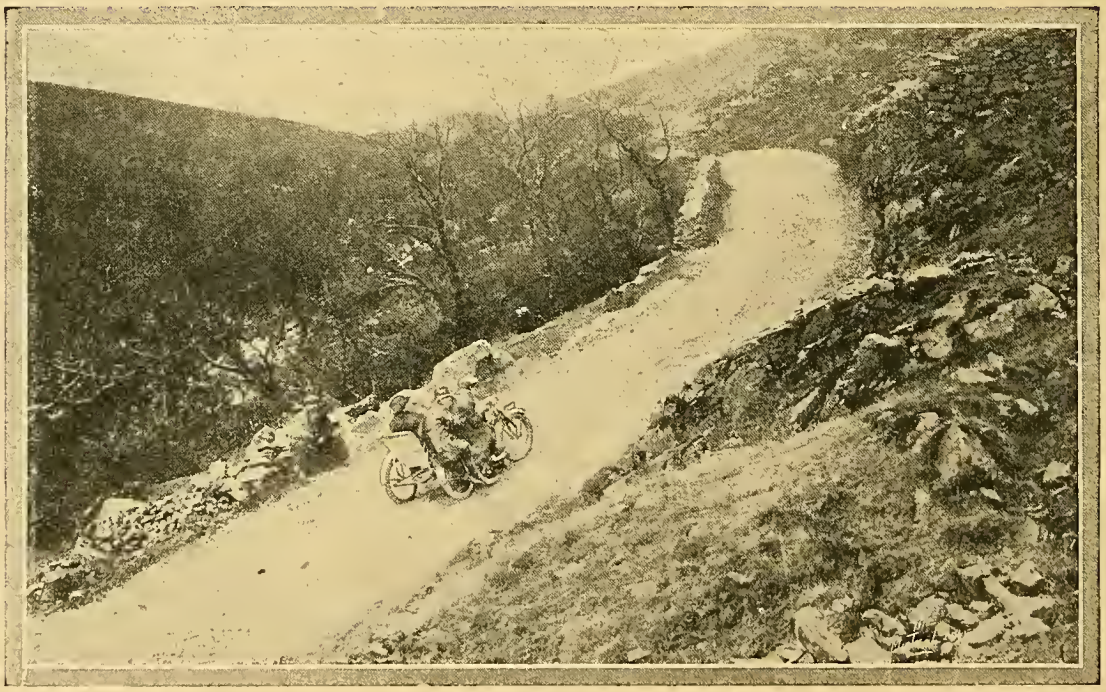
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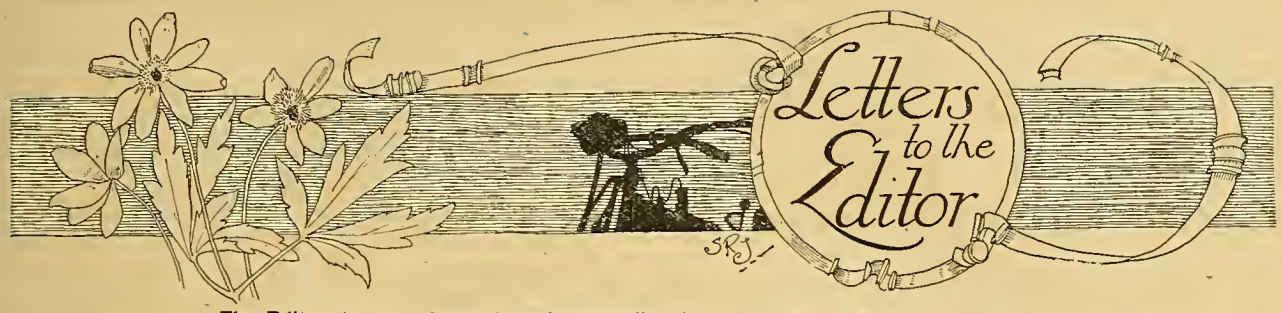


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The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street E.C., and should be accompanied by the writer's full name and address.

A.C.U. One Day Trial.

Sir,—I notice that you inserted in your issue of March 14th a photograph of my tricar driven by me on Cudham Hill in the A.C.U. one day trial. I shall be glad if you will inform your readers that this was the only hill on which the tricar stopped, and that a little further down (before the photograph was taken) I was baulked by another competitor with sidecar, and therefore lost my engine speed. Had it not been for this, there is little doubt that I should have climbed the hill, as on a previous occasion not long before I had climbed this hill easily with the same gear.

G. N. HIGGS.

The Agency Question.

Sir,—If your correspondent's small local agent happens to run the only petrol depôt within a radius of a hundred miles, the former had better pay the five per cent. out of his own pocket, kiss and be friends.

If not, he should do his business with any of the large number of firms who have got capital and push.

After all, he needn't tell the agent where he purchases.

LA 2459.

Sir,—I had the same trouble last year about the above when I bought my present mount. The agent I bought my machine from told me that the agent of a district was unable to recover any percentage on a machine sold by an outside agent to a customer inside the district, unless the outside agent had made the sale by advertising or touting in the district. I presume advertisement in the press is excluded. In which case Mr. Topping need have no fear that the agent from whom he buys his machine will not get his commission. Perhaps some member of the trade will explain the case more fully.

FREE ENGINE.

The Silencer Trials.

Sir,—In order to make these a thorough practical test I beg to suggest that some means be found whereby the various makes of silencers shall be tested under exactly the same conditions.

It is obvious that a maker would prefer his particular silencer to be attached to a machine that was already comparatively silent, say a small twin rather than a heavy single.

Hence if the object aimed at is to discover, if possible, the most effective and efficient silencer, some other way will have to be found than that adopted by the M.C.C.

I understand that the M.C.C. silencer trial is to be regarded as a sporting event primarily for the interest of its members rather than for technical purposes, which means, I suppose, that while throwing the competition open, the real object is to encourage ideas from its own members rather than make any serious attempt to find what motor cyclists are so much in need of.

No mention is made of any test for back pressure, except the ability to climb an ordinary hill, which almost any motor cycle can do with a good margin of power to spare, which power might be absorbed by the silencer.

Surely under such unsatisfactory conditions the results of the trial will prove nothing, as almost any silencer can be made quiet if no account is taken of back pressure.

I suggest that only standard 3½ h.p. machines be used, if possible of exactly the same cubical capacity, so that the same volume of gas be dealt with, then throttle and air valves in all cases should be fixed so that all machines be run under the same conditions as to quality of mixture and amount supplied to the engine, it being obvious that a rich mixture with throttle fully open will make much more noise than a weak mixture throttled down, it being quite possible to alter the mixture and throttle down on approaching the judges if they were visible and their positions known.

I only mention this to show that failing similar conditions any so-called silencer trial will be useless unless the same silencer were tested in every one of the various classes arranged, which, of course, is not likely.

HILLS CLARKE.

A.C.U. and M.C.P.A. Committees.

Sir,—On behalf of the Motor Cyclists' Progressive Association I should like to reply to Mr. Harding's remarks in the issue of March 7th. I am glad to note that he does not question the need of such a body as the Progressives (how could he in view of the One-day trial fiasco?). It is only its constitution with which he finds fault. Apparently he considers trade influence too strong, but the figures he quotes to substantiate his remarks are inaccurate. Let me give the real facts and compare the present and proposed composition of those representing individual members and associated clubs on the Auto Cycle Union General Committee.

List of representatives recommended by the M.C.P.A. for individual members:

Mr. Harding states there are seven men actively engaged in the trade and three indirectly.

As a matter of fact only six are actively engaged in the trade and two indirectly, whilst four are private owners.

These figures need not alarm private members, seeing that in the old state of affairs five men on the committee were actively engaged in the trade and two indirectly.

We now come to consider the list of men recommended by the M.C.P.A. to represent the affiliated clubs on the General Committee of the A.C.U. Mr. Harding is wrong again when he states that five of the M.C.P.A. men are actively engaged in the trade and five indirectly. As a matter of fact four only are actively engaged in the trade and three indirectly, the remaining twelve being private owners.

Here again on comparing the old composition of those representing the affiliated clubs, it will be found that three men were actively engaged in the trade and three indirectly.

Summing up it will be seen that the composition of the Progressives' committee is made up of ten men actively engaged in the trade, five indirectly, and fifteen private owners, whereas Mr. Harding states that it is made up of twelve men actively engaged in the trade, eight indirectly, seven private owners, and three unknown. His suggestion, therefore, that the trade influence is too strong is ridiculous, as to all intents and purposes it remains in the same proportion as last year. Besides, why should not trade members do their duty as committeemen in such a manner as to demand the private members' confidence?

Coming now to the second part of his letter, in which Mr. Harding states that it has been urged against him and some of his friends that they are not practical motor cyclists. Mr. Harding acknowledges that he and his friends do not take part in speed contests, but ride their bicycles for pleasure. Surely, seeing that they are members of the Competitions Committee of the A.C.U., and help to make rules for reliability and speed trials, it would be better if they had some experience to back them up. It is the object of the Motor

Cyclists' Progressive Association to see that practical men should be elected on these committees. Where was Mr. Harding during the ill-fated one-day trial? Was he not a member of the Competitions Committee which drafted the rules and is responsible to some extent to see that they are carried out? What experience have he and his friends had of organising big trials, and were they as members of the Competitions Committee satisfied that satisfactory arrangements had been made for this event? Mr. Harding suggests that responsible leaders of the trade are satisfied with their joint committee meetings with the A.C.U., but if this is so, how is it that three of the oldest members of the trade have joined the ranks of the Progressives?

Finally, I would like to point out that it is not only in connection with trials that there is need for reform. In other matters the Auto Cycle Union will have to adopt a more businesslike attitude. What has happened to the A.C.U. Handbook, which was promised for March 1st? What have become of the proposed lamp trials we heard so much about? Perhaps Mr. Harding, as a member of the Competitions Committee, could tell us what he has done in reference to these points? If the Progressives come into power we hope to look into these matters.

W. G. McMINNIES, Hon. Sec. M.C.P.A.

[This letter was unavoidably held over.—Ed.]

Consumption Comparisons.

Sir,—I notice that in *The Motor Cycle* of Thursday, the 14th inst., you invite readers' opinions on the reason why the petrol consumption for a motor cycle is much higher than that of a car in proportion to their relative weights, etc., and I certainly consider that you have thereby opened up a very interesting field for discussion, which I am sure all keen motor cyclists will take advantage of, and it is to be hoped that such a discussion will definitely settle this much-debated point once and for all.

As far as my own opinion goes, I entirely agree with you that the difference in the two cases is certainly far too great to be accounted for by differences arising from air resistance or transmission systems, or any other mechanical differences, but, personally, I am quite certain that the cooling is at the bottom of the whole business. I do not think it will be denied that practically all cars have water-cooled engines, and that the low petrol consumptions obtained are with such cars, while almost all motor cycle engines are air cooled, and there is no doubt that the lower relative petrol consumption of the car is due to the much greater thermal efficiency of the water than the air-cooled engine. A little consideration of the two cases should easily convince anyone that such is the case, for a water jacket, although absorbing heat during the initial portion of the expansion or working stroke, gives up a lot of this heat during the latter part of the stroke, and this heat is accordingly converted into work by the engine. In the case of the air-cooled engine, however, any heat given up to the air during the initial portion of the stroke can obviously not be returned again in the latter part of the stroke, since the cylinder has by that time passed from the vicinity of the heated air and is then in contact with fresh cold air, which continues to abstract heat when it is really required by the engine to convert into work.

For this reason a large amount of heat energy is entirely wasted by the air-cooled engine. It will, therefore, be obvious that the thermal efficiency of the water-cooled is much greater than that of the air-cooled engine, and, in consequence, the former will give a larger amount of work for a given amount of petrol than the latter, giving a correspondingly lower petrol consumption for the same amount of work.

This question could be definitely settled if comparative figures were available of the petrol consumptions of cars having air and water-cooled engines. For this reason it would be very interesting if the owners of some of the many cyclecars and runabouts having air-cooled engines would give us the benefit of their experiences in the matter of petrol consumption.

C.S.P.

Sir,—In your remarks on consumption comparisons, you have set a very interesting problem, namely, why is it that a car engine will give roughly thirty to forty ton-miles per gallon of petrol, while a motor cycle engine gives about fifteen ton-miles per gallon. But of still greater interest is the next problem, namely, is this difference inevitable, or can a motor cycle reach the apparently greater efficiency of the car while still retaining its own peculiar advantages? Only careful experiment can decide which are the important points, for though, I believe, most of the necessary facts have been at some time determined, they are so scattered through a mass of literature that it would be difficult to make any great use of them. In these experiments we must have some definite measure of efficiency, say b.h.p. hours per gallon of petrol. The mere difference between a wet and a dry road would make a considerable difference if ton-miles per gallon were used. To compare the engines, first the modern car engine is multi-cylinder, water cooled, long stroke, has ample bearing surfaces, and is mechanically lubricated. The motor cycle engine is usually single cylinder, air cooled, short stroke, the bearing surfaces are often rather small, and lubrication is by splash.

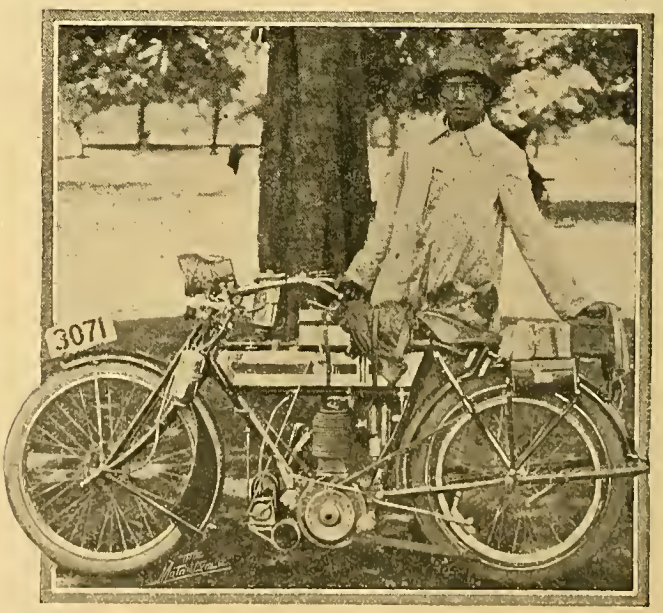
What experiments have been made to determine the influence of each of these factors on efficiency as measured by b.h.p. hours per gallon?

Next we come to the question of transmission. What percentage of power is absorbed by belt, chain, or shaft? Does a change speed gear compensate for the power it absorbs by allowing the engine to be run more often at its most economical speed? (What effect has engine speed on efficiency?) And even now we have only got the horse-power hours per gallon transmitted to the road wheels. I believe, though, as I have said, the experimental evidence is almost absent, that on every point I have mentioned the motor cycle is somewhat less efficient than the car (with the exception of being single cylinder instead of multi-cylinder). Combined, the effect of all these causes must be considerable. Now, as to the force required to drive car or cycle along the road.

First, road resistance; every wheel of a car is sprung, perhaps, not ten per cent of the weight of a car is unsprung, *i.e.*, wheels, back axle, etc., except in spring frame machines not half the weight of a motor cycle is efficiently sprung. This must have some effect. You, sir, in your leading article, dealt with the wind resistance, though I am inclined to think the area of resistance of a car is less than you stated in most cases, but this only increases the force of your argument.

REGINALD FISHER.

Sir,—Your leader of March 14th on the above subject greatly interested me, and assuming, for argument's sake, the figures put forward by yourself, I have estimated the power which it would be necessary to apply at the tread of the wheel to propel the motor bicycle and the motor car at 30 m.p.h. The interesting result of the calculation is that it appears, as *à priori* reasoning would lead one to suppose,



J. E. Yee with his 3½ h.p. T.T. Triumph, on which he recently broke the Melbourne to Sydney record. The previous record held by W. Tormey stood at 34 hrs. 7 mins., which Yee improved upon by 2 hrs. 48 mins. The distance between the two cities being 577 miles, his average speed works out at 18.4 m.p.h. Both Yee and Tormey lost some time through lamp troubles and railway gates being closed.

that the engines are practically equally efficient as prime movers. The great discrepancy, therefore, in the two cases as regards the ton-mile economy must undoubtedly be looked for in the direction indicated by your leader, viz., greater relative wind resistance.

A summary of the calculation is as follows: Rolling friction of rubber wheeled vehicle on macadam road, 50 lbs. per ton; wind resistance per square foot of normal surface, .005 × [velocity in miles per hour]² lbs.

Motor Cycle, 336 lbs., 9 sq. ft.	Motor Car, 3,360 lbs., 30 sq. ft.
Rolling resistance = 336 × .022 = 7.38 lbs.	Rolling resistance = 3360 × .022 = 73.8.
Wind resistance = 9 × .005 × 30² = 47.9.	Wind resistance = 30 × .005 × 30² = 135.
Ft. lbs. per sec. = 44 (7.38 × 47.9) = 3.75 h.p.	Ft. lbs. per sec. = 44 (73.8 × 135) = 16.7 h.p.
At 100 m.p.g. at 30 m.p.h. = .3 gall. per hour. = .08 gall. per h.p. hour.	At 20 m.p.g. at 30 m.p.h. = 1.5 gall. per hour. = .09 gall. per h.p. hour.

The near agreement, on these assumptions, of the effective and shaft horse-power (to use marine phraseology) is also interesting. W. R. GERALD WHITING.

[We consider that Mr. Whiting is taking the constant of air resistance at much too high a figure. The Eiffel Tower formula gives .003 for flat surfaces, and the R.A.C. estimate is .0017; this was obtained from practical results at Brooklands. If, then, we take .002 (for ease of calculation), Mr. Whiting's h.p. hour figures become .15 gallon for the motor cycle and .146 for the motor car. This does not affect the force of his argument, which, however, gives a slightly undue importance to air resistance.—Ed.]

The A.C.U. Formula and Two-stroke Engines.

Sir,—With regard to the recent letters respecting the handicapping of two-stroke engines, your correspondents appear to have overlooked the important fact that the A.C.U. formula is an attempt to compare the performances of machines on the point of efficiency. It would be unfair to the four-stroke engine if the two-stroke engine were not in any way handicapped, to compensate for its very much higher petrol consumption. It may be quite immaterial to your correspondents whether a machine does 60 or 100 miles to the gallon, but it is a fact which has to be considered when the relative efficiency of the two types is being tested.

In any case, the A.C.U. handicap is not a great one, and I believe I am correct in saying that in the recent Essex M.C. hill-climb, the P. and M. and sidecar would have beaten the Scott and sidecar, even if the latter had been reckoned as a four-stroke.

A BELIEVER OF FOUR-STROKE EFFICIENCY.

Clutches and Variable Gears.

Sir,—Please allow me to reply to your correspondent "Commonsense."

I still maintain that the Indian clutch is one of the most flexible, if not the most flexible clutch, on the market, and that it answers the purpose of a variable gear within certain limits, *i.e.*, it will allow one to crawl in traffic, take a hill at a steady pace, and crest a steep hill, all the time giving a smooth drive. Naturally, if a machine be geared far too high for a certain hill no clutch in the world will enable it to climb it. As mentioned before, there are limits. Power is absorbed by the slip in the clutch and gained by increased engine revolutions.

I should like to say that, though I was credited with a stop on Cudham I kept my engine running and gained the top by turning in a circle. My failure was a combination of circumstances. A collision on Polesteeple Hill knocked my sidecar four inches out of track, causing it to drag heavily on the machine, and through others stopping in front of me I was delayed twenty minutes, and therefore had to drive all out to make up time. On nearing the steep portion of Cudham I was baulked by a non-competitor, and found my gear, in the circumstances, too high to allow me to pick up again without turning, as described above.

To a certain extent, the knowledge that my stoppage has caused "Commonsense" so much amusement somewhat compensates me for my failure in the trial. Before the start a friend remarked, "If you can't get through, get a laugh."

ERNEST FRASETTI.

Single-cylinder Class Limits.

Sir,—I notice a letter from the James Cycle Co. in the issue of the 21st inst. pointing out that the single-cylinder touring class for a certain open hill-climb is limited to 500 c.c. engines, and consequently several well-known machines are barred. May I point out to manufacturers of engines above 500 c.c. that in the classes for single and variably geared single-cylinder machines in our open hill-climb, to be held on Saturday, April 13th, no limit has been fixed. May I also draw the attention of manufacturers of cyclecars to the fact that we are including a special class for these machines alone. FRANK G. BARTON,

Trials Hon. Sec., Oxford M.C.C.

Lancashire Clubs and Competitions.

Sir,—With reference to a letter on the above subject from Mr. Winterbottom, trials secretary Burnley A.C., in last week's issue, I would like to say how pleased I would be to co-operate with him in what I concur is most necessary to the well-being of the sport, to wit, inter-club competitions. At the same time I would like to point out that the Mersey Motor Club called a meeting of club delegates to form an association to carry into effect the same plan, but unfortunately the necessary support was not forthcoming. However, if Mr. Winterbottom will send me his address through *The Motor Cycle* I will communicate further with him and give him all the assistance in my power.

S. W. CARTY, Hon. Sec. Mersey Motor Club.

Pillion Seats.

Sir,—Regarding Mr. Pritchard's query in last week's issue, I would say the way we started was as follows: First I got astride the cycle and had both feet on the ground; then my wife got seated, and I pushed off as well as I could. As soon as engine fired, I assisted with the pedals for a few yards; when it was downhill, even slightly was sufficient (and if possible we so arranged that it was), there was no need for this. Very occasionally some kind friend would give us a shove off, but the above was the usual way. My Bradbury starts very easily or this way of starting would be impossible. This year I have fitted a clutch, as it is neither dignified nor in a town very safe starting as we did.

CHAS. O. COX.

Climbing Honister Pass.

Sir,—Having read the claim of the Clyno Engineering Co., in which they state that they have succeeded in climbing Honister Pass—a feat which others dare not attempt—I am rather curious about the following points: (1) The gear used. (2) Whether, when Mr. Frank Smith accepted the challenge, it was understood that the Pass was to be cleared of loose stones, etc., as I understand was done.

I note that Mr. C. R. Collier climbed Honister on a standard 8 h.p. two-speed Matchless, geared 9⅞ to 1. Certainly his engine was larger than the Clyno's, but if the Clyno's gear were as low as I have heard it to be, the efficiency of the Matchless combination was greater than the Clyno's. Also Mr. Collier, as I expected he would, climbed the Pass straight away, whereas Mr. Smith was there some considerable time before.

I suppose it is necessary to add that I have no interest in the Matchless Co. J. A. ROCHE.

[The gears used were stated in the article describing the event. See page 278, March 14th.—Ed.]

SUMMARY OF CORRESPONDENCE.

In the letter published last week signed Kenneth C. Orr, the word *unacquainted* should read *acquainted*.

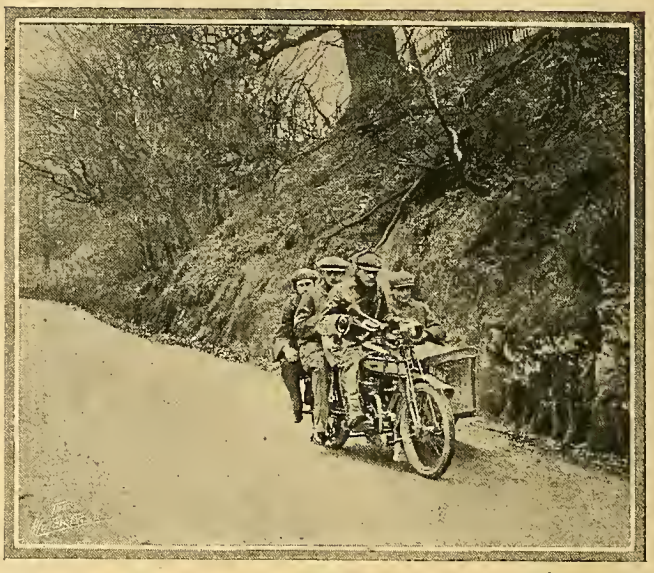
"C.F.'s" letter should be signed with the writer's full name. With regard to the query raised, only one type of Clyno engine is made, bore and stroke 76×82 mm. = 744 c.c.

NOTICE.

The Editor disclaims all legal responsibility in any way for loss of copy in the form of manuscript, drawings, or photographs submitted to him. Rejected manuscript, drawings, and photographs will only be returned provided a stamped addressed envelope is enclosed for the purpose.

A TEST OF A BIG SINGLE-CYLINDER.

It is some considerable time since we have ridden an Excelsior motor cycle, consequently we jumped at the offer of a trial of one of the new 4½ h.p. models with Villiers free engine and sidecar. Having only a short time at our disposal, we chose Stoneleigh Hill for our test, and, the ascent with one passenger in the sidecar having been accomplished with great ease, we tried two, and this weight also the engine made light of. Finally, we collected three passengers, two of whom sat on the carrier and one in the sidecar. At the first attempt the machine failed only about five yards from the top, so a second and successful attempt was made after a short wait to allow the engine to cool. This feat was accomplished by a single-cylinder engine of 86 × 112 mm. with a single gear of 5½ to 1, and without clutch slipping. The Binks automatic carburetter was used. On the way home we took charge of the machine, and found it comfortable to ride, flexible, and devoid of knocking; while the big single gave one the impression of ample reserve power. In fact, though we came home three up, we never had occasion to open the throttle more than halfway. The machine was standard in every way, and fitted with two lamps, petrol tin, and all the usual accessories. The weight unladen was given us as just over 3½ cwts., and the total weight of the four passengers just over forty-one stones. This must be acknowledged to be an extremely fine performance, and it reflects great credit on the new Excelsior engine, which has proved itself ideally suitable for passenger work. There has of late been a distinct call for a big single-cylinder engine for sidecar work, as many motor cyclists prefer the simplicity of a single-cylinder engine.



A single-geared 4½ h.p. Excelsior climbing Stoneleigh Hill with three passengers and driver.

OXFORD M.C.C. MEMBERS' HILL-CLIMB.

The Oxford M.C.C. held a members' hill-climb on Irondown Hill on Saturday last. There were fifty-four entries. The results on formula were as follow:

Class I. (Lightweights).—1, R. H. Viggers (2¾ h.p. Enfield); 2, C. H. Boissier (2¾ h.p. New Hudson); 3, H. G. Hill (2½ h.p. Calcott).

Class III. (Touring Singles).—1, H. Graham Dixon (2¾ h.p. New Hudson); 2, H. T. Askew (3½ h.p. Triumph); 3, J. E. Webb (3½ h.p. Triumph).

Class IV. (Touring Twin Cylinders).—1, R. H. Viggers (2¾ h.p. Enfield); 2, R. A. Bishop (6 h.p. Enfield).

Class V. (Sidecars).—1, H. A. Beard (3½ h.p. New Hudson); 2, R. A. Bishop (6 h.p. Enfield); 3, J. E. Webb (3½ h.p. Triumph).

Class VI. (Any Single or Twin).—1, H. A. Beard (3½ h.p. New Hudson); 2, H. G. Hill (3½ h.p. Bradbury); 3, Graham Dixon (3½ h.p. New Hudson).

HILL-CLIMB AT ARGENTEUIL.

The contest organised by the Moto Cycle Club de France at Argenteuil on Sunday consisted of a flying kilometre and two kilometres uphill. The course was bathed in sunshine, and the drying action of the wind and sun, aided by the corporation sweeper, had rendered the road surface perfect for fast speeds. British-made machines were responsible for first places in three out of the six classes, Gabriel's Triumph being 20s. faster than any other machine in the 500 c.c. class, and the 2¾ h.p. New Hudson easily won Class II. under 350 c.c.—a 3½ h.p. New Hudson winning the 500 c.c. sidecar class at a speed of 25 m.p.h. Other machines which performed well were Peugeot, Motosacoche, and Réne-Gillet. The results were:

Class 1 (lightweights, 225 c.c.)—1, Detrez (Peugeot); 2, Piette (Motosacoche). Winner's speed, 24 m.p.h.

Class 2 (350 c.c.)—1, De Vay (New Hudson); 2, Milland (Motosacoche). Winner's speed, 37.3 m.p.h.

Class 3 (500 c.c.)—1, Gabriel (Triumph); 2, Elamber (Magnat Debon); 3, Dubost (Réne-Gillet). Winner's speed, 43 m.p.h.

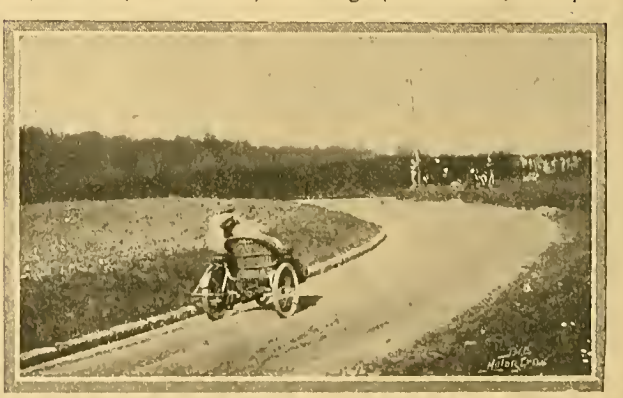
Class 4 (over 500 c.c.)—1, Peau (Peugeot); 2, Debeaume (Réne-Gillet). Winner's speed, 44 m.p.h.

Sidecars (under 500 c.c.)—Lurault (New Hudson), 25 m.p.h.

Sidecars (over 500 c.c.)—Chédorge (Réne-Gillet), 27 m.p.h.



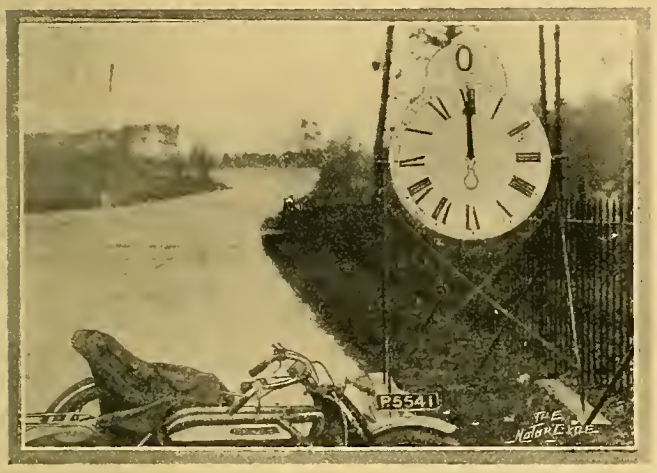
One of the bends at Argenteuil.



Chedorge (Rene-Gillet) competing in the Mete Cycle Club de France hill-climb.

B.M.C.R.C. MEETING POSTPONED.

EVERYONE in the motor cycle world had been looking forward to the B.M.C.R.C. meeting on Saturday last. It was to have been a most popular event, as *The Motor Cycle* telephone began ringing on Friday afternoon and continued till quite up to eleven on the next morning with queries as to the racing. These tintinnabulations are always the sign that an event is evoking interest, and it was the same last week with the Essex Motor Club Hill-climb, only, thank goodness, "Brooklands" is comprehensible on the telephone and Tring is not. No more is T-R-I-N-G, even when spelt out with careful enunciation, but we digress. At breakfast time on Saturday it *looked* fine and promising, at 10.30 a.m. it became overcast, at eleven it rained, at twelve it poured, at one it deluged, and just before that hour when we arrived at the track we met Major Lindsay Lloyd, Mr. N. C. Neil, and a Brooklands employee all wedged into the little yellow Sizaire, going as fast as its one cylinder would let it for the station.



The clock face which has been placed at the fork on Brooklands in connection with long distance races.

Brooklands reminded one of the "Thousand Islands." "A great place," said a competitor, "for water polo," but no use for motor cycle racing. Competitors, officials, and spectators were huddled under iron roofs for shelter. The timekeepers, Ebblewhite, Bidlake, and Reynolds, were walking away from the course as we arrived. One or two brave souls were trying their machines in the rain. Bashall was disporting himself on a small twin Humber. One or two sidecar machines were careering round the track or trying the test hill, but of racing there was none. Major Lloyd decided the point on a show of hands. Two-thirds voted against any racing on such a day, and the event was postponed till the following Wednesday (yesterday), and a full report thereof will appear in our next issue.

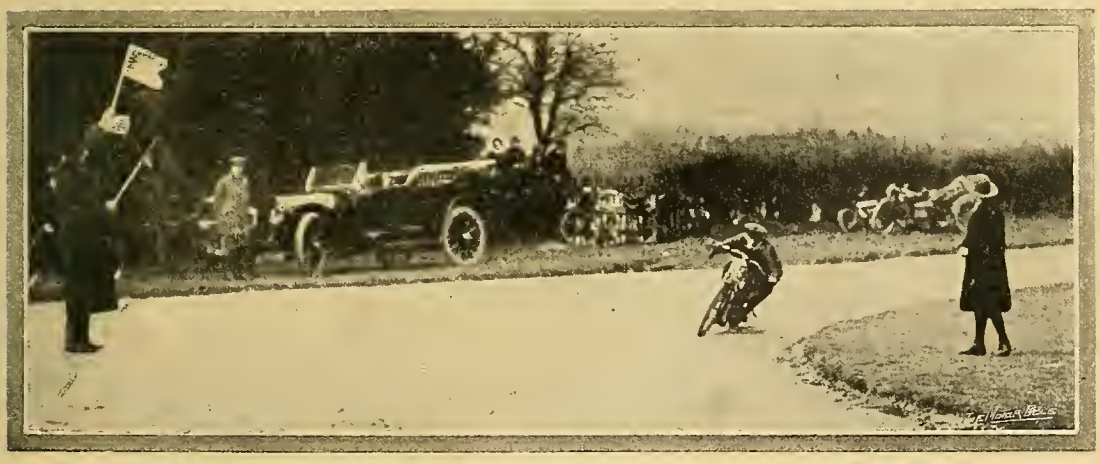
Two points in connection with this meeting are worthy of being placed on record. Firstly, mention must be made of the programme—a really useful production, with speed table, complete list of British motor cycle records up to January 1st, 1912, a distance table, and full particulars regarding the B.M.C.R.C.

The Brooklands Clock.

Secondly, we must refer to Mr. Loughborough's clock. This clock, for the design and manufacture of which the clever and capable honorary secretary of the B.M.C.R.C. is responsible, was completed at 2 a.m. on Saturday. It is not synchronised hourly from Greenwich. Yet it requires no winding. It has no works. Yet it ticks when required. You cannot set your watch nor tell the time by it. But it fulfils a useful purpose, and competitors would not for worlds be without the shining whiteness of its snowy countenance.

Its great dial gazes down the straight full in view of the competitors, just opposite the timekeepers' box. Behind it an official works its one wheel, on a spoke of which is a spring bolt engaging in a series of holes bored at intervals in a circle. Each hole represents a minute on the dial, and the snick of the bolt dropping into the hole is the only tick it can produce. This wheel controls the one hand, and the object of it all is to give the riders an idea as to how the time goes on a long distance race.

At the speed at which competitors travel handle-bar watches are of no use; they therefore have good cause to thank this simple evolution of the clever brain and the outcome of the deft hands of Mr. T. W. Loughborough, who has made the B.M.C.R.C. what it is.



W. H. Elce (3½ h.p. Rudge) rounding the corner at the foot of Aston Hill in the Essex M.C. Open Event.

HERTS. COUNTY A.C. SECOND OPEN TRIAL.



General view of the starting point at Barnet.

PUNCTUALLY at 9.30 a.m. the first competitor was sent away from the Salisbury Arms Hotel at Barnet on Saturday last. A fair number of spectators watched the start in a slight drizzle.

From Barnet the route led through Boreham Wood to St. Albans, where competitors were stopped one mile from the town. They then had to ascend Holywell Hill at under 10 m.p.h. The test proved the undoing of a good many. Full marks were only obtained by nineteen riders. C. W. Meredith (3½ Bradbury) and R. J. Charlesworth (3½ Zenith) made noticeably slow climbs, and the single gear brigade distinguished themselves almost without exception.

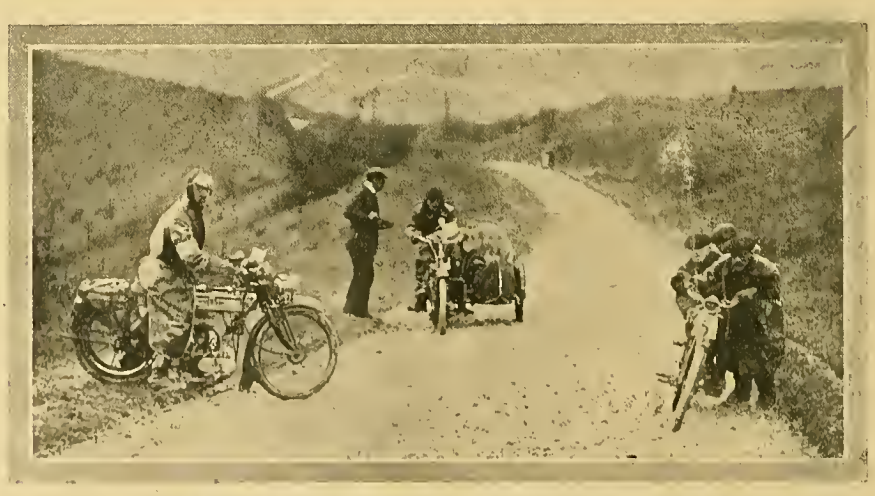
From St. Albans to Harpenden the roads were very heavy; in fact, till about three miles short of Luton mud-plugging was the order of the day. In Harpenden we met Charlesworth replacing a control joint pin, but as this was not a non-stop section he was able to do so without penalty.

Luton Market Place was crowded, but the local police were of great assistance in keeping a clear lane. Here we met Frank Smith with his Clyno and sidecar. He was very wroth because, although he turned up in time to start, he was unable to procure either numbers or a route card, and consequently he wisely refused to start thus handicapped. Then followed more mud to Barton-in-the-Clay. Here the second non-stop section started, leading through Hitchin, Shefford, Silsoe, and back to Barton.

At the foot of Sharpenhoe Hill and on the incline all competitors were stopped and had to restart. Most riders made clean ascents, as the surface of the hill was remarkably good. Here the rain started in earnest. Newsome (Triumph), Applebee (Centaur), and Gilham (Triumph) came up well. Collier (6 Zenith) roared up, but was baulked by Parkes (Enfield), who also went up well. The G.W.K. came up nicely and quietly, and many envied the dryness of the driver and passenger. Attenborough (5 Indian sc.) came up fast.

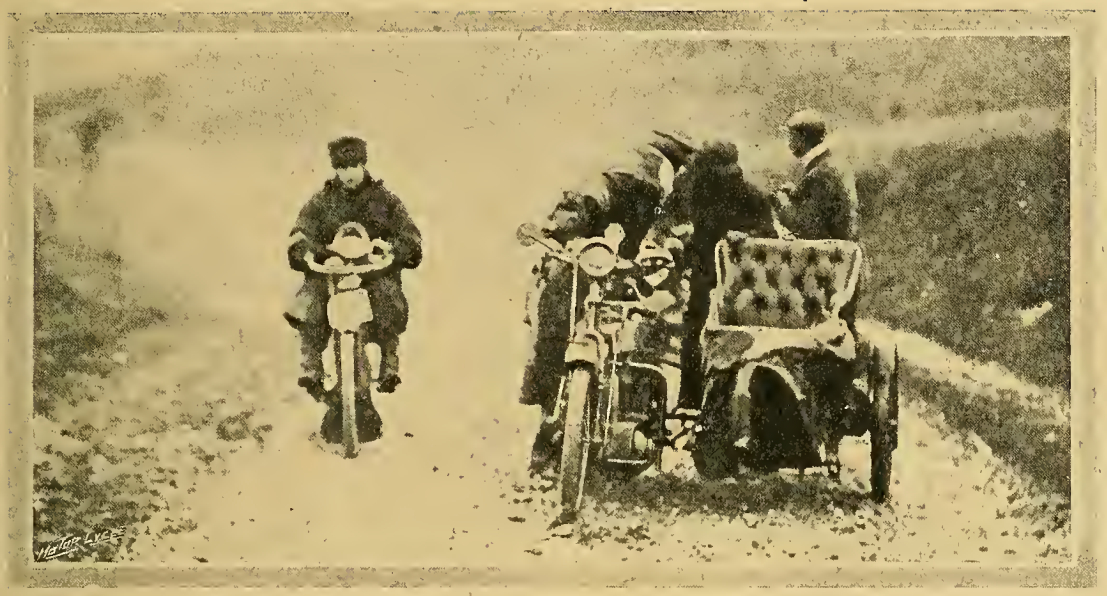
From Sharpenhoe to Dunstable the roads were awful, and it was quite a relief to get on to the London Road in that town, though it was only for about threequarters of a mile. Many competitors picked up petrol in Dunstable, so as to avoid the crush at Tring. On arriving at Tring the machines were parked at the Rose and Crown, and everyone had a bad time getting out of his filthy overalls; there was then a big run on the washhouse.

One hour was allowed for lunch, and competitors were afterwards taken direct to the timed hill-climb at Aston Clinton. This hill is now so well known that it presented little diffi-



ON KOP HILL, PRINCES RISBORO', IN THE HERTS COUNTY TRIAL.
Some competitors who found the combination of a 1 in 5 gradient, stony surface and white chalky slime too much for them. The photograph gives some idea of the condition of the hill.

Herts. County A.C. Second Open Trial.—



F. W. Gilham, (free engine Triumph), one of the seven competitors to ascend Kop Hill. Of the seven, three used single gears.

culty, and the surface was much better than we had expected. Newsome roared up and made the fastest ascent of the day. F. W. Applebee made fastest time in Class A, while in Class D E. G. Attenborough made fastest time.

Then came a stretch of narrow twisty lanes, followed by the precipitous descent of a narrow chalky hill, on to Wendover, where the road surface improved, and over an undulating course to Princes Risboro'.

Kop Hill Ascended with Hot Engines.

Now came what was a surprise to many, viz., the ascent of Kop Hill with hot engines. This proved the undoing of all but a few. The surface was awful, loose unrolled stones and soft greasy clay; and, had not a few made clean ascents, we should have said the hill was unrideable. Clean ascents were made by Newsome and Gilham (Triumphs). Dixon (3½ Zenith) got up at his second attempt. Fordham (Quadrant) was particularly noticeable, as, though he was twice badly baulked, he got up in style. Haddock (2½ A.J.S.) made a fine climb. Colliver (6 Zenith), Huckle (5 Rex), and Meredith (3½ Bradbury), also made clean ascents. H. Berwick (3½ New Hudson) made one of the best climbs. He was baulked halfway up the hill, and came to a standstill, but started up again on the bad part, and finished well. The machine was bouncing all over the road, and it was wonderful how he managed to keep in the saddle. No passenger machine climbed the hill straight away, though we hear that Rice-Pyle brought up his 8 Bat and sidecar at the second attempt.

After Kop Hill the pace was fairly fast, as nearly everyone had lost time. We passed the Indian, stopped with tyre trouble, and a rider of an Enfield adjusting his chains. Just before Missenden we met Haswell, who told us that the Brooklands meeting was postponed, owing to the water on the track. In Missenden the route takes a sharp left-hand turn, and a steep hill is encountered at once; thence through Chesham and up the sharp incline of Hampstead Road. Here we passed a N.S.U. rider apparently in trouble, though he repassed us again shortly afterwards. From Chesham the road led to Boxmoor, thence to St. Albans and the London Road to Barnet.

A Wet and Muddy Ride.

At the finish everyone was wet and muddy, but still cheerful, and there was much talk about the state of Kop Hill. The route was extremely well marked with arrows, and, in addition, paper had been laid where there was any possible doubt. Messrs. D. K. Hall and A. Sharp worked hard to get out the results on Saturday night, and managed everything except the results of the stopping and starting test at



The check at the foot of Sharpenhoe Hill.

Herts. County A.C. Second Open Trial.— Sharpenhoe, which had not come in. The single-geared Triumph, Premier, and Quadrant machines distinguished themselves in a trial replete with hills, and belt slip did not appear to be common in spite of the adverse conditions. F. W. Applebee's Quadrant ran beautifully throughout, as did



W. L. Overend (3½ h.p. P.V.) commencing the ascent of Sharpenhoe

Haddock's A.J.S. We also noticed H. F. Baige's Rudge make a fine ascent of Sharpenhoe. F. C. North (3½ Ariel) pluckily rode throughout the day, though, owing to a bad skid, he had damaged the steering head, and so had considerable trouble to keep a straight course owing to stiff steering. The results are given in the following table:

Results.

No.	Name.	Class.	Non-stop.	Schedule	Hill-climbing Fast.	Hill-climbing Slow.
1	C. C. Cooke (Triumph)	B	45	48	25	20
2	E. C. Jarvis (Triumph)	B	45	41	3	20
3	W. F. Newsome (Triumph)	B	50	49	30	20
4	A. J. Dixon (3½ Zenith)	B	45	49	19	20
5	F. W. Applebee (2¾ Centaur)	A	45	42	30	20
6	C. Howe (3½ Zenith)	B	15	22	0	20
7	F. W. Gilham (3½ Triumph)	B	45	25	0	20
8	C. W. Meredith (3½ Bradbury)	B	45	48	9	20
9	J. Oliphant (3½ Premier)	B	15	48	10	17
10	H. C. Mills (3½ Premier)	B	45	48	10	20
11	L. Cass (4½ Quadrant)	B	45	50	0	20
12	R. J. Charlesworth (3½ Zenith)	B	25	40	0	20
13	A. J. Parkes (2¾ Enfield)	A	35	45	0	10
14	E. A. B. Tooth (5 Rex)	C	25	10	0	10
15	W. L. Overend (3½ P.V.)	B	45	48	0	20
16	H. A. Fordham (3½ Quadrant)	B	—	48	7	0
17	L. H. Nott (2¾ Enfield)	A	—	33	0	2
18	E. A. Colliver (6 Zenith)	C	50	49	30	20
19	H. Beal (3 N.S.U.)	A	35	34	0	17
20	J. Kerr (3½ N.S.U.)	B	45	34	0	0
21	A. G. Riddle (3½ A.S.L.)	B	—	16	—	10
22	C. J. Neville (Triumph)	B	45	37	10	0
23	A. N. Gutteridge (Rudge)	B	—	17	—	4
24	F. C. North (3½ Ariel)	B	45	46	0	20
25	F. G. Edmund (3½ Humber)	B	45	48	0	0
26	H. Berwick (3½ New Hudson)	B	50	46	8	20
27	H. F. Baige (3½ Rudge)	B	45	46	18	20
28	Non-starter.					
29	A. Webster (2¼ Hobart)	A	45	36	0	0
30	A. H. Brill (2¾ Hazlewood)	A	45	33	0	17
31	H. H. Huckle (5 Rex)	C	-	32	0	0
32	J. M. Rodgers (5 Matchless)	C	Non-starter.			
33	T. H. Haddock (3½ A.J.S.)	A	45	46	6	0
34	W. Arden (2½ Grandex)	A	—	18	—	—
35	V. Busby (2¾ Humber)	A	—	16	—	20
36	Rex Mundy (2½ Singer)	A	45	30	0	20
37	F. Begby (4½ Calthorpe)	D	—	46	0	0
38	H. Grose (8 Chater-Lea sc.)	D	45	16	—	0
39	C. E. Holmes (8 Chater-Lea sc.)	D	—	49	0	3
40	E. Tee (6 Zenith sc.)	D	35	32	0	5
41	R. Hare (6 Enfield sc.)	D	—	43	0	10
42	D. J. Blackburn (6 Zenith sc.)	D	Non-starter.			
43	G. Baxter (6 Basil sc.)	D	25	16	—	18
44	S. A. Beazley (6 Matchless sc.)	D	25	32	0	11
45	C. M. Keiller (G.W.K.)	D	45	47	0	0
46	J. Chater-Lea, jun. (8 Chater-Lea sc.)	D	45	45	0	2
47	J. T. Wood (G.W.K.)	D	35	44	0	20
48	Amarlen da Silvira (7 Indian sc.)	D	45	17	—	10
49	Clive Preene (6 Rex de Luxe Sidette)	D	35	49	0	0
50	R. Lord (6 Rex de Luxe Sidette)	D	45	48	0	3
51	E. G. Attenborough (5 Indian sc.)	D	—	32	30	2
52	F. Smith	D	Non-starter.			
53	B. T. Rice Pyle (8 Bat sc.)	D	35	33	0	0

— Signifies official figure not yet known.

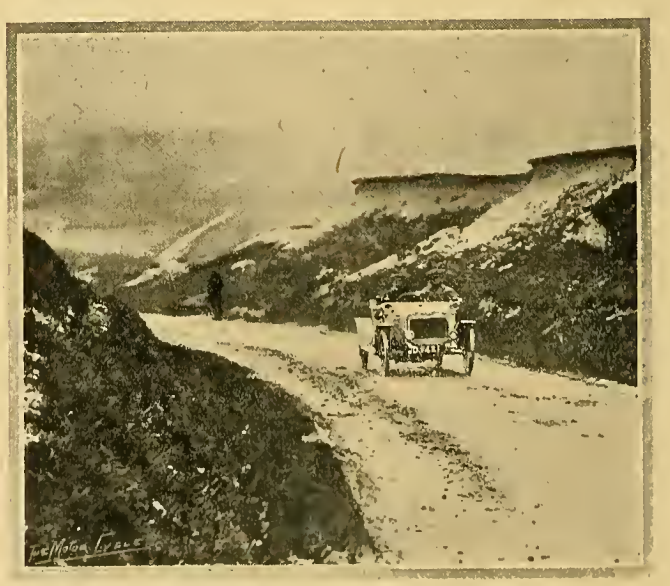
ARMS HILL CLIMBED ON A SIDECAR.

Late on Monday evening we received the following telegram from R. A. Bishop, of Oxford: "Have just climbed Arms Hill, 6 h.p. Enfield and sidecar; total weight rider and passenger, 13 st. 13 lbs.; first ascent by sidecar combination and passenger; witnessed by Secretary Oxford Motor Cycling Club and others.—R. A. BISHOP."

This is an excellent performance, on which we congratulate Mr. Bishop and the makers, the Enfield Cycle Co.

OPEN RELIABILITY NON-STOP RUN IN NORTH WALES.

The open reliability trial which is being organised by the Liverpool A.C.C. for April 13th is open to any class of vehicle controlled by the A.C.U. Route: Start Hamilton Square, Birkenhead, 8.30, Chester, Rosset, Cefn y-bedd, Bwlchgwyn, Wrexham, Ruabon, Llangollen, Llandegla, Ruthin (lunch control, one hour), Loggerheads, Mold, Cilcain Hill, St. Asaph, Rhuddlan, Newmarket, Holywell, Bagillt, Halkin, Northop (tea control, half an hour), Hawarden, Chester, finish Hamilton Square, Birkenhead; distance, 160 to 170 miles. A gold medal will be awarded to every competitor making an absolute non-stop; certificates to every competitor completing the course. Competitors will ride in pairs, and will observe one another, in addition to which there will be travelling marshals and observers on each steep hill. There is no marking or guessing at times or speeds, no timed hills, no examination of machines—in fact, it is a purely straightforward non-stop run.



The G.W.K. cyclecar climbing Sharpenhoe, which is a cutting between chalk cliffs



In a Sidecar

UNTIL last week I was quite contented with an ordinary smooth-running respectable push-cycle. I denounced the motor cyclist as a noisy, petrol-breathing, vibrating, and totally unworthy fellow traveller, who missed the health-giving exercise of the cyclist, and gained nothing but insane speed. I was convinced of the supreme joys of pedalling, and even went so far as to write a revised edition of "Love, the Pedlar." But an enthusiastic motorist has destroyed all my arguments by the simplest of all processes, which I might describe as *solvitur motorando*.

At first I was reluctant to make the experiment, but the enthusiast knew my weakness. "I'll guarantee to frighten you," he said cunningly. "I'll make you genuinely alarmed by the speed." Of course, I denied "the soft impeachment," and promptly entered the sidecar. We travelled for an hour and did twenty-eight miles; and now I am crying out for a motor cycle every hour of the day.

In the beginning the motion was unexpectedly smooth and luxurious. We went along at a moderate pace through the town: but even then there was a sense of power which was intoxicating. It was like the joy of gripping a high-mettled horse; but it was many horse-power.

Then when the outskirts of the town were slipping behind, our speed increased. We began to shoot past the ordinary traffic—the lumbering drays and clanging street cars, and we outraced the cycles as a comet outleans the creeping stars. The sense of power became a thrill, a tingling joy; and I wanted to shout in the

Sheer Pleasure of Motion.

I felt a temptation to keep on guard—an entirely foolish impulse to be watchful and wary. Keenly watching each new turning for an out-rushing vehicle, gripping one side of the chair as if to leap alertly out or vaguely imagining that caution could stop the machine or brush aside the obstacle. The instinct was futile, but quite natural. Possibly it was due to a little timidity or a sense of helplessness. Then something happened. . . . The machine suddenly doubled its speed and gulped down the road. The feeling of timidity vanished as a useless thing; I flung it off as a diver flings off his clothes; and we plunged into space. I lay back with feet pressed against the front of the chair in complete abandonment to pure joy. To say that we flew is a weak metaphor, and conveys no idea of the experience—we were hurled along like a projectile. The velocity seemed to double and double again. It grew, multiplied, accelerated. It became vertiginous yet exultant; it became an all-absorbing passion; a sense of power which made us god-like; it was like a divine thunderbolt, a soul racing like a star. We were being whirled into infinity, into eternity; and the wild joy filled me like a gale. Time and space became trivialities; I was superior to all such paltry things; I drank eternal life, till I was drunken as with old wine.

The landscape flew by on either side; we sped up hills and swooped into valleys; we switchbacked over undulating country, yet we seemed not to touch the road. The telegraph poles ran by like Indians on the trail. The country-side galloped past with a thousand Gilpins in full chase. Bridges dashed towards us and leapt over us yelling like boys at leap-frog. The earth's own motion came into our ken, and we became part of the cosmic consciousness.

Fear was impossible in that state of delirious emotion, and I began to understand that primeval revelry when the stars of heaven sang together. I also wanted to shout for joy. . . . Then we stopped. Everything became mute and dead. People crawled about the streets, and traffic moved slumberously past. The thrill of life faded into a dead-and-alive existence, and my cycle has become a commonplace.

NOVICE.



A SIDECAR TRIAL ON NOVEL LINES.

Something original in the way of competitions is the sidecar trial arranged by the Coventry and Warwickshire M.C. for Saturday, April 13th. Though there are thousands of motor cyclists who use 3½ h.p. machines with sidecar attachments, so far no trial has been organised to show up their capabilities. The Coventry M.C. trial is confined to members, and only sidecarists will be competing.

There will be two classes: (1.) For machines up to 500 c.c. (2.) For machines over 500 c.c. A special prize is offered to the driver of a single-geared sidecar who accomplishes a non-stop run from Coventry and ascends farthest up the test hill, which will be on the noted range of Edge Hills. Those competitors who succeed in climbing the test hill will be guided along a short circuit to the foot of the hill and be expected to repeat the performance *ad lib.* until only one non-stop survivor remains to take the prize.

The hon. sec. will issue particulars and entry forms this week.

RICHMOND MEET OF MOTOR CYCLISTS.

We were informed last week that there was a rumour in the North that the Good Friday meet of motor cyclists at Richmond had been abandoned. We immediately communicated with Mr. Geoffrey W. Liddle, of the Middlesbrough and District M.C.C., and have received a reply from him, of which the following is an extract:

"The Good Friday meet of motor cyclists has always been arranged by a private organiser until last year, when the Northern League made the arrangements. As this meet has attained great success, I think it would be a pity to allow it to fall through, and therefore I am again writing the secretaries of motor cycle clubs inviting them to foregather once again this year. My strongest reason for wishing the continuance of this meet is that it seems the only event in which all motor cyclists may participate irrespective of club or union. I must also say that in my own opinion there is no pleasanter manner of spending a few hours than in the company of fellow wheelmen. My fellow clubmen intend spending the day in Swaledale, arriving at Richmond at or about 11 a.m., having lunch at about 12.30, joining in the massed group photograph for *The Motor Cycle*, and then proceeding further up the dale for tea at Reeth or Healaugh, returning home in the evening. I think the Harrogate, Leeds, Hartlepool, Newcastle, and Scarborough Clubs intend joining in the meet.—Geoffrey W. Liddle, Hon. Secretary Middlesbrough and District M.C."

We agree with Mr. Liddle that it would be a pity to allow the Northern Meet to fall through, and trust the arrangements he is making with secretaries of northern clubs will be successful.



At the top of the steepest pitch on Aston Hill during the progress of the Essex M.C. first open hill-climb of 1912. (See last issue.)

THE M.C.C. OPEN COMPETITION FOR MOTOR CYCLE SILENCERS.

This trial will be held on a circular course near London on Saturday, April 27th, starting at 3 p.m. The object is to endeavour to demonstrate that the motor cycle engine can be efficiently silenced without causing it to show perceptible loss of power.

Rules and Conditions.

Classes.—Classes 1 and 2, lightweight motor cycles not exceeding 350 c.c. Classes 3 and 4, motor cycles exceeding 350 c.c. Class 5, motor cycles with any size single-cylinder engines and sidecar. Class 6, motor cycles with any size multi-cylinder engines and sidecar.

Type of Silencers.—Competitors may use any devices they think fit to render their motor cycles silent, but such devices must, in the opinion of the judges, be of a practical nature, and capable of being adopted as a permanent fitting to the motor cycle.

Course.—A circular course, not exceeding five miles in length, in the neighbourhood of London, will be chosen, and competitors must cover this three times without a stop, unless otherwise directed by the officials in charge.

A hill of fair gradient will be included in the course, and competitors will be required to ascend the hill at the following minimum speeds: Classes 1, 2, and 5, minimum speed 15 m.p.h.; Classes 3, 4, and 6, minimum speed 19 m.p.h. Excessive speed will disqualify. Competitors failing to climb the timed hill in the required minimum time will be penalised accordingly.

Start.—Competitors will be started at suitable intervals, and must not ride within two hundred yards of each other during any part of the competition.

Stops.—The competition will be in the nature of a non-stop run, but competitors may be stopped by the officials to maintain proper spacing, and for any other purposes.

Judging and Marking.—Judges will be stationed at various points on the route, and in some cases will not be visible to the competitors. Each judge will make independent reports, and give marks, based on a graduated scale, for the silence of each machine as it passes him.

At the conclusion of the trial, the judges' reports and marking will be tabulated by the official timekeeper, and the winner shall be the competitor who thus obtains the most favourable markings.

The trial hon secretary is Mr. W. E. Southcomb May, 34, Gower Place, W.C., to whom all entries, fees, etc., must be sent. Entries must reach the trial hon. secretary on or before the first post, Saturday, April 20th



Despite the bad state of the roads on Saturday the Motor Cycling Club carried out its opening run to Brighton. The photograph was taken outside the Old Ship Hotel the usual M.C.C. rendezvous for this function.

SIX DAYS' SIDECAR RIDE.

The following is the mileage claimed to have been accomplished by A. Butler on the sidecar ride mentioned last week, see page 316 (mileage from abridged Contour Road Book):

London to Brighton and back	104
London to King's Lynn	100
King's Lynn to London (lost way, made detour to March, and came back to Ely to reach main road again)	120
London to Newmarket and back	120
London to Reading and back	84
London to a point near Harlow and back ...	42
London to Staines and back	38
London to Great Melton and back	96
London to Chelmsford and back	60
London to Cambridge and back	112
London to Reading and back	84
London to Cambridge and back	112
London to Hungerford and back	136
London to Kelvedon and back	84
London to Cambridge and back	112
London to Guildford and back to Balham ...	55
Total	1,459

INTER-CLUB HILL-CLIMB AT EASTER.

The following classes, etc., have been settled for the Harrogate and District M.C.C. and Herts County A. and A.C. joint open hill-climb on Saturday, April 6th, on Leathley Bank, near Harrogate.

1.—Standard lightweights up to 350 c.c.
2.—T.T. lightweights up to 350 c.c.
3.—Standard singles up to 600 c.c.
4.—T.T. singles up to 600 c.c.
5.—Standard multi-cylinders up to 670 c.c.
Lightweights not eligible for Classes 3, 4, and 5.
6.—Passenger machines, sidecars, and cyclecars up to 1,100 c.c. carrying a passenger of not less than 8 stones.
All the above on A.C.U. formula.
7.—Any single-cylinder on time.
8.—Any multi-cylinder on time.

The special P. and M. Team Trophy will be awarded for the team prize.

Particulars may be obtained from Mr. H. W. Fortune, St. James's Chambers, Harroagte, or Mr. C. C. Cooke, Rose Cottage, North Mimms, Hatfield.

M.C.C. OPENING RUN TO BRIGHTON.



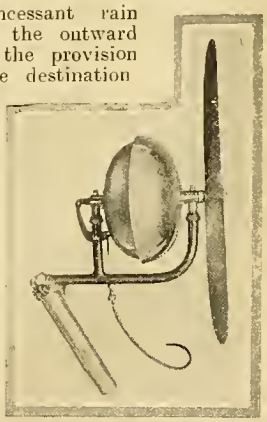
A. Butler (3½ h.p. A.S.L.-Precision and Comfy sidecar), on which he recently accomplished 1,459 miles in six days. A table of the distances is given above.

Several members of the M.C.C. who had journeyed to Brooklands in order to witness the racing at the B.M.C.R.C. meeting left the track at about 4 p.m. for Brighton, there to meet fellow members of the club for the opening run

The roads and weather were severe, and most users of belt-driven machines had a good deal of trouble A blustering wind and almost incessant rain detracted from the pleasure of the outward run, but amends were made by the provision of a concert and dinner at the destination Eighty-five sat down to dinner at the Old Ship.

With the homeward run on Sunday came the promise of spring. The weather was quite warm, and the sun shone throughout, while so quickly had the wind dried the roads that they were inclined to be dusty. The Brighton Road was alive with motor vehicles, and, if the conditions on that famous road can be taken as a criterion, the coming season will find the sidecar pre eminently popular. There ap peared to be more passenger carrying motor cycles on the road than any other class of vehicle, and a very large pro portion of these were multi speed singles. Lightweights were also strongly represented.

Forty members stayed at Burford Bridge for luncheon.



The Helisenne, a novel French motor gong to take the place of horn or whistle. It is actuated by a screw, set in motion by the passage of the machine through the air, which causes a set of clappers to revolve inside the gong



TIME TO LIGHT LAMPS.

Mar. 28th	... ...	7.23 p.m.
,, 30th	... ...	7.27 ,,
April 1st	... ...	7.30 ,,
,, 3rd	... ...	7.33 ,,

Joint Open Hill-climb at Easter.

Permission has been granted to the Harrogate and District M.C.C. and the Herts County A.C. (motor cycle section) to hold a joint open hill-climb on Leathley Bank, about six miles from Harrogate. The hill is about a mile long, and for practically its whole length is extremely easy; about two hundred yards from the finish, however, there is a rather sharp left-hand bend, immediately followed by an exceedingly steep gradient.

A.A. and M.U. and Manufacturers.

We have seen a letter from the secretary of the A.A. and M.U. addressed to motor cycle manufacturers, asking them if they are willing to place a prospectus of the Union in the toolbag of a machine when it is delivered to a customer. A commission of 2s. on each member obtained through this medium is offered. The A.A. and M.U., in adopting this system, has, we believe, taken a leaf out of the Federation of American Motor Cyclists, which recently induced several American manufacturers to adopt similar lines. We wonder how many British makers will fall in with the scheme?

M.C.P.A. Meeting.

Those who are interested in the excellent work done by the Motor Cyclists' Progressive Association are asked to be good enough to attend at the Associates' Room, R.A.C. Western Entrance, 89, Pall Mall, S.W., at 2 p.m., on Saturday next, the 30th inst., when the objects and aims of the Association will be explained to those who have not yet had an opportunity of making themselves familiar with them. We referred briefly in our last week's issue to the M.C.P.A., and we strongly advise those who wish to become fully acquainted with its working to attend this meeting.

Motor Cycle Paced Records.

Now that the N.C.U. recognises motor cycle paced records there will be many aspirants for honours in this respect. At Herne Hill, on April 5th, H. Knowles, of the Polytechnic C.C., will endeavour to set up a new one-hour record, previous to the commencement of the L.C.C.U. meet. H. A. Cooper, a motor cyclist of nine years' standing, and holder of eighteen gold medals and five A.C.U. first-class certificates, will this year try his hand at pacemaking, making his *début* at Herne Hill on April 5th, pacing H. H. Lee, of the Kentish Wheelers, in the big motor cycle paced match.

Motor Cycling in New South Wales.

In spite of the bad road surfaces, the number of motor cyclists is steadily increasing in Australia, as the constant receipt of letters from readers in the various States testifies. The pastime is not confined to those who live in the big towns, where the roads are comparatively fair—it is indulged in quite as keenly by enthusiasts scattered about in the up country districts, where there are no roads worthy of the name. A "country" reader, Mr. A. B. Garlings, who lives at Gilgandra, in the western district of N.S.W., sends us the photograph, reproduced herewith, of Miss Hilda Maguire and himself with his 1908 Triumph and Montgomery sidecar. This combination has given satisfactory results, and that an average speed of 20 m.p.h. can be maintained, with a maximum of 40, speaks well for the machine itself and the sidecar. The machine is fitted with a Mabon clutch and single gear,



A. B. Garlings, of Gilgandra, who, in sending us the above photograph, mentions that there are no unavoidable hills which he cannet climb in his district on the 3½ Triumph sidecar depicted, and an average of 20 m.p.h. is easily possible.

but Mr. Garling adds that a two-speed gear and a somewhat larger engine would often be acceptable.

Auto Cycle Union Notes.

MEMBERSHIP.—One hundred new members were elected at the last committee meeting of the Auto Cycle Union.

AFFILIATION.—The Isle of Wight M.C.C., which has thirty members, has become affiliated.

BRIDGE TOLLS.—The Anglesea Motor Union recently brought to the notice of the Auto Cycle Union the excessive charges imposed on motor cyclists crossing the Menai Bridge. His Majesty's Office of Works, on being approached by the A.C.U., replied to the effect that it was not practicable to vary these charges before the expiration of the lease of the bridge, which would come about in 1913. The A.C.U., however, will not lose sight of the matter.

R.A.C. LOCAL GUIDES.—The R.A.C. local guides, who will be installed on the roads immediately before Easter, will, as has been previously stated in these columns, be entirely at the disposal of members of the A.C.U. and affiliated clubs who carry the A.C.U. badge on their machines. The Auto Cycle Union has decided to send a contribution to the Royal Automobile and Associated Clubs to help defray the cost of maintaining these guides upon the roads.

T.T. RACE.—It has been decided to ask the Highway Board of the Isle of Man to extend the time of practising in the morning to not less than two hours, as it is not reasonable to expect a competitor to accomplish two circuits of the course in less time.

THE SILENCER TRIAL.—Col. H. C. L. Holden and Mr. E. M. P. Boileau recently inspected the works of Messrs. Auto-Carriers, Ltd., Ferry Works, Thames Ditton, with a view to obtaining permission to use one of their shops in which to hold the Silencer Trial. Mr. John Weller kindly agreed to place a portion of the firm's engine testing room at the disposal of the Union for the trial. Mr. A. M. Low has been invited to serve on the Silencer Sub-committee.

A USEFUL REGULATION.—It has been decided to add the following regulation to all entry forms: "Competitors are required to inform the secretary, immediately before taking part in this competition, of any difference which may exist between the specification appearing on the entry form, and that of the machine he is actually riding."

THE SECRETARY'S RESIGNATION.—Mr. F. Straight, who has for so long been connected with the motor cycle movement, has tendered his resignation as secretary of the Auto Cycle Union, which resignation has been accepted with the greatest regret by the committee, who heartily thanked him for his nine years' service in connection with the Union, and voted him an honorarium of £100 as a recognition of his past work.

Subject to confirmation by the General Committee, Messrs. F. T. Bidlake, J. H. Burley, H. H. Gritlin, and F. Straight have been appointed as official timekeepers.

Permits have been granted to the Harrogate and Herts County M.C.C.'s to hold an open hill-climb on April 6th.

SPECIAL FEATURES.

Single Figure Gradients.
The Pastime and Industry in France.
Herts County A.C. Second Open Trial.
Consumption Comparisons.

A Sportsman.

Alan E. Woodman, the one-legged motor cyclist, has provisionally entered his 2¾ h.p. twin Humber for the junior T.T.

Inter-club Event in South Wales.

The South Wales A.C. and Cardiff M.C. are co-operating to run an open hill-climb at Caerphilly, near Cardiff, on Thursday, July 18th, and open speed trials on the sands at Porthcawl, adjacent to Cardiff, on Saturday, July 20th, both under A.C.U. and R.A.C. rules.

Automobile Engineers Visit A.C. Works.

On the 16th instant the Graduates of the Institution of Automobile Engineers paid a visit to the works of Auto-Carriers, Ltd., Thames Ditton. The various shops were visited in turn, and it was explained to the party that the present output of A.C. sociables was fifteen per week, but before very long it was hoped to turn out fifty per week.

The Land's End Run.

A record entry has been received for the above M.C.C. event at Easter. Last year there were 74 competitors, but this year's total is considerably in excess of this number, and the entries were expected to reach a total of 90.

The route has been altered slightly. Instead of going from Exeter to Moreton-Hampstead and Two Bridges on the outward journey, the route is *viâ* Ashburton and then on to Two Bridges *viâ* New Bridge and Dartmeet. This stretch is considered to be the most severe in England.

A.C.C.F. Circuit de Paris.

On page 307 of our last week's issue full particulars were given of the Circuit de Paris. Entries close in England today, but will probably be received up to Sunday morning if telegraphed to the secretary, A.C.C.F., 35, Rue Crussol, Paris. This is the first time that England has sent a motor cycle team to take part in a French trial. Motor cyclists who think of entering will, if the weather be fine, enjoy an experience which will live in their memories. The following English riders have, we understand, signified their intention of competing: G. L. Fletcher (2¾ h.p. Douglas), Rex Mundy (2½ h.p. Singer), H. Reed (Dot), F. Dover (Premier), R. A. Bishop, W. Cooper (3½ h.p. Bradbury), E. B. Ware (8 h.p. Chater-Lea sc.), J. Haslam (Zenith), Cook (3½ h.p. A.S.L.), F. B. Hillman (6 h.p. Zenith), A. Wentworth Heighton (Matchless), F. Kilpatrick (3½ h.p. Rex), E. M. P. Boileau (2¾ Douglas), C. M. Smith (3½ James), W. Bashall, A. Bashall (Humbers), W. G. McMinnies, and T. H. Lake.

Efforts are being made to arrange so that competitors' motor cycles shall be registered through to Paris at the lowest possible rate; this will allow the Customs examination to be made in Paris. It is also understood that saloons will be engaged for the party.

Latest advices from the other side are that our French hosts are anxious to do everything they can to comply with the wishes of English competitors. It is anticipated that a bigger entry will be received than ever before for an International competition.

FUTURE EVENTS

Mar. 30.—Derby and District M.C.C. Open Hill-climb.
April 5-8.—N.W. London M.C.C. & Herts. County A.C. Joint Trial and Open Hill-climb (Yorks.) and Ladies' Competition.
„ 8.—Westmorland M.C.C. Open Hill-climb at Brigsteer Brow.
„ 13.—Oxford M.C.C. Hill-climb.
„ 13.—Liverpool A.C.C. Open Reliability Trial.
„ 20.—B.M.C.R.C. Race Meeting.
„ 20.—Bristol M.C.C. Open Hill-climb
„ 27.—Bristol B and M.C. Open Hill-climb.

American Champion Badly Hurt.

Jake De Rosier has had a serious accident at the Los Angeles Stadium, and has broken his leg in two places, and it is feared his skull may be fractured. This happened on the 10th inst., and we are led to believe that the gallant racer will never be able to mount a motor bicycle again. The accident is all the more unfortunate as the American papers put it down to "dirty" riding. He was competing against Balke, who also fell heavily, but escaped with minor injuries. Both were riding Excelsior machines.

Hill-climbing in Pairs at Oakamoor.

There are 141 entries for Saturday's open hill-climb at Oakamoor, organised by the Derby and District M.C.C., including most of the leading riders. Lord, Brown, and Baxter will be mounted on Rexes, Newsome and Cheshire on Triumphs, Newman (Ivy), J. H. Slaughter (L.M.C.), Holloway (Premier), D. C. Bolton, E. T. Bolton, and W. D. South (Rudges), G. Brough (Brough), and A. Ainsworth (Rudge). Percy Johnson, of Nottingham, has entered for three classes, and hopes to annex the fastest time prize on an 8 h.p. Matchless.

Bad Behaviour at Barnet.

"Anti-Knut" complains that three motor cyclists rode to and fro with cut-outs open in front of Barnet Church last Sunday during divine service. Such behaviour is most reprehensible, and we hope the offenders will not repeat it.

Associated Clubs' Dinner.

The R.A.C. and Associated Clubs' third annual dinner will be held to-morrow (Friday) at the Holborn Restaurant at 7 p.m. Several motor cyclist members of affiliated and associated clubs will be present at this function. Seats have been booked at the Paladium, where the performance begins at 9.30 p.m.

War Office Tests at Brooklands.

Further War Office tests took place at Brooklands on Tuesday last, when a P. and M. was tested in the presence of Lieut. R. H. Verney. The machine ordered had to cover one lap at 40 m.p.h., and nineteen laps at 30 m.p.h. W. Pratt had difficulty in obtaining the maximum speed, but P. Marians, who also rode, covered a lap in 3m. 55s. = 41.63 m.p.h. The weather was fine, but windy.

Post Office Motor Cycles for Melbourne.

Tenders will be received at the office of the Deputy Postmaster General, Melbourne, Australia, up to 3 p.m., May 7th, for the supply and delivery of five 3½ h.p. free-engine motor cycles. A deposit of 5% on the first £1,000 is required with each tender. Local representation is necessary. It would be as well for firms who intend tendering to first of all apply to the Agent General for Victoria, Melbourne Place, Strand, W.C., who will probably be in possession of special tender forms and able to supply further particulars. A point to bear in mind also is that letters take from four to five weeks to reach Melbourne from England, so that tenders should be despatched by the beginning of next month to be in time.



Through the traffic of Luton in the Herts. County Trial last Saturday. The foremost rider is A. G. Edmond (Humber).

CLUB NEWS.

Newport (Mon.) M.C.C.

The season commences with a speed-judging and reliability trial on April 5th. There will be a short Easter tour to Brooklands.

Harrogate and District M.C.C.

To-morrow evening (Friday), Mr. J. L. Norton will lecture on "The Efficiency and Tuning of an Engine" at the Albany Club, Central Arcade, Harrogate, at eight p.m.

Liverpool A.C.C.

On April 5th there will be a penalty run to Kendal, which will be the headquarters for the Easter holidays; as several of the members are competing in the Westmorland club's hill-climb.

Leicester and District M.C.C.

The first round of the Edwards Cup was held on the 7th inst. over a course of seventy-six miles. Result:

		Error.
1.	Cyril Bailey	3m. 52s.
2.	Harold Petty	4m. 19s.
3.	S. O. Judge	5m. 36s.

Thirteen made non-stop runs.

Birmingham M.C.C.

Entries for the Perth and back run at Easter close to-morrow, the 29th inst. This run will be the longest trial ever organised by any affiliated club, the total distance being approximately 360 miles each way. In order to eliminate as far as possible the "luck bogey," there will be only two checks *en route*, at which competitors will be allowed a margin of forty-five minutes early or fifteen minutes late. To qualify for gold medals, competitors must be within one minute late or early at Perth and Birmingham, the respective finishing points of the outward and homeward journeys. Those who wish to compete should communicate with Mr. H. J. Cox, 21, Stirling Road, Edgbaston.

Putney and District M.C.C.

The opening hill-climb was held on Saturday last on Pebble Coombe, when a good entry was obtained. The results were:

3½ H.P. MACHINES up to 550 c.c.

1.	J. Montagu Drew (3½ Zenith)	18⅕s.
2.	J. E. Collbran (3½ T.T. Rudge)	18⅖s.

OPEN CLASS, up to 1,000 c.c.

1.	E. Collbran (3½ T.T. Rudge)	16⅘s.
2.	G. S. Drew (6 Zenith)	18s.
	Montagu Drew (3½ Zenith)	18s.

Members wishing to join the Easter tour to Devon should inform the hon. secretary.

Walthamstow M.C.

The opening run will take place on March 31st, starting at 10.30 from the Napier Arms, Woodford.

Cathcart District M.C.C.

The opening run of the season took place on Saturday, the 16th inst., when there was an excellent turn-out of over thirty members. On Saturday, the 30th inst., the club run is to Strathblane.

Mersey M.C.

Starting at 8 p.m. on Friday, May 3rd, from Liverpool, a twenty-four hours open trial will be held for motor cycles and cyclecars. Route: Birkenhead, Chester, Wellington, Worcester, Llandrindod Wells, Lake Vyrnwy, Beddgelert, Capel Curig, Ruthin, Queensferry, and Birkenhead. Hon. Sec., Mr. S. W. Carty, 5, Redcross Street, Liverpool.

Cork and District M.C.C.

The reliability trial, Cork to Killarney and back, was held on Monday, 18th inst., over very bad roads. Result:

		Marks.
1.	M. J. Fitzgerald (3½ Bradbury)	98%
2.	R. S. Russell (3½ Matchless)	94½%
3.	R. Atkinson (3½ Triumph)	76%
4.	W. J. O'Callaghan (3½ Zenith and sc.) ...	67%

O'Callaghan won the special sidecar prize.

Manchester M.C.

The opening run of the season took place on Saturday, March 23rd. There was a large attendance of members, but unfortunately the weather conditions were anything but favourable, rain falling for most of the afternoon and evening. The meeting place was the Nag's Head Inn at Bucklow Hill, and the run was by way of Northwich to Sandiway.

Wolverhampton M.C.C.

The club held a most successful reliability trial on the 16th and 17th inst., to Colwyn Bay and back.

Competitors were allotted 500 marks, and for each second out at controls one mark was deducted. Non-stop conditions were strictly observed.

1st prize, club gold medal, and a week's stay at The Connaught, Colwyn Bay: R. Tonks (3½ Multi Rudge); marks lost, 214.

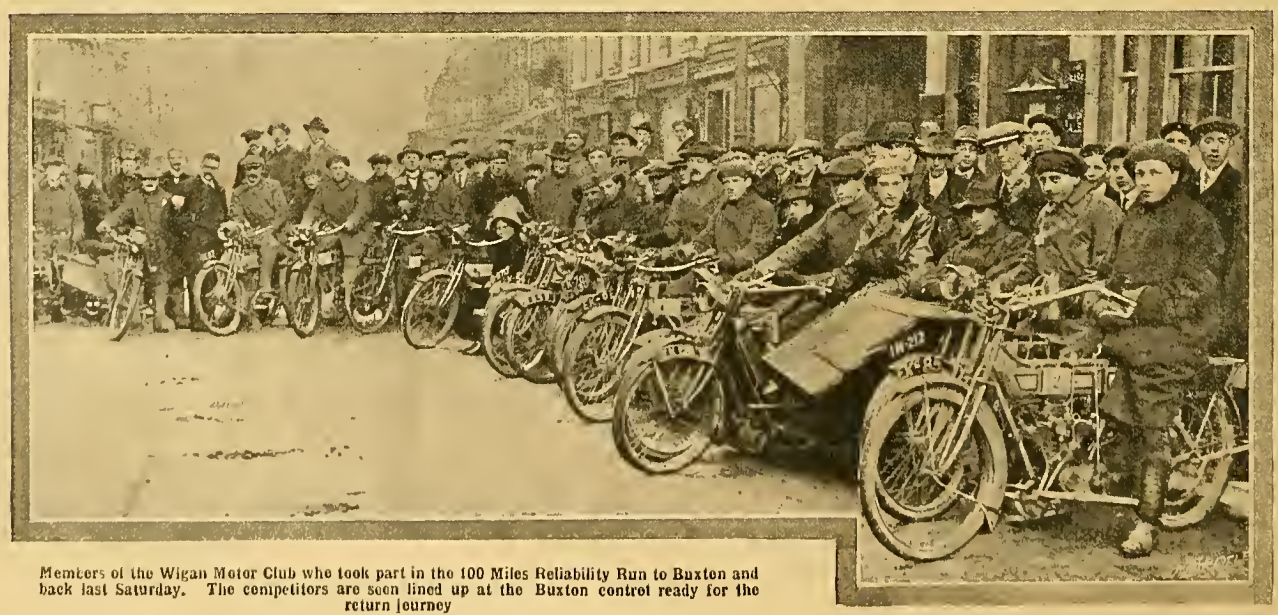
2nd prize, club gold medal: B. Haddock (2½ A.J.S.), two-speed; marks lost, 216.

3rd prize, club silver medal: J. Stevens (2½ A.J.S.), two-speed; marks lost 251.

1st prize (sidecar), club gold medal: R. Lord (6 Rex Sidette); marks lost, 316.

1st (amateur): H. M. Weir (2½ A.J.S.); marks lost, 382.

2nd (amateur): H. Wolverson (4 Ireland); marks lost, 450.



Members of the Wigan Motor Club who took part in the 100 Miles Reliability Run to Buxton and back last Saturday. The competitors are seen lined up at the Buxton control ready for the return journey

Club News.—

Westmorland M.C.C.

Entries for the Easter Monday open hill-climb close at the end of this month.

The membership of this club now stands at 126.

Sutton Coldfield and Mid-Warwickshire A.C.

The opening run on April 13th will take the form of a speed-judging competition for cars and motor cycles from headquarters to Kenilworth, where tea will be provided at the Abbey Hotel.

Cork and District M.C.C.

The forthcoming events include: April 5th, open hill-climb; April 5th and 8th, tour to Killarney; April 8th, open reliability trial, Killarney to Cork; May 1st, flexibility hill-climb; May 27th, open reliability trial; June 19th, race meeting at Garryvoe Strand; July 3rd, passenger hill-climb; August 5th, novices' reliability trial.

Birmingham M.C.C.

The opening run to Evesham was on Saturday, the 16th inst. Some thirty members and friends turned out notwithstanding the cold and threatening weather. The Perth reliability trial at Easter promises to be a success. All who complete the course within seventeen and a half hours will be awarded gold medals.

Wakefield M.C.C.

It has been decided to affiliate this new club to the A.C.U. and R.A.C. Headquarters: Grazier's Hotel, Wakefield. Hon. secretary, Mr. C. Hirst, 3, Welbeck Street, who will supply all information. Hon. treasurer, Mr. J. W. Brown. Catalogues and booklets will be gratefully received.

Aberavon, Port Talbot, and District M.C.C.

The opening run will take place on April 5th, starting from Bethany Square, for Tintern Abbey and Chepstow, return *viâ* Monmouth and Raglan.

On Easter Monday a nine hours' reliability trial will take place. The route will be through Mid-Wales.

Full particulars from the hon. secretary, Mr. J. H. Locke, 51, High Street, Aberavon.

Bristol B. and M.C.

The Bristol Bicycle and Motor Club will carry out their second open hill-climb (A.C.U. permit) near Bristol, on April 27th, when Mr. F. Straight (A.C.U. secretary) will act as timekeeper. There will be nine events, and no restriction has been placed on gears. In addition to the small engine, touring, and racing classes, there are events for ladies' and passenger machines, while a class is specially set apart for amateurs. Entry forms are now ready, and may be had from Mr. H. Blocksidge, 14, Frederick Place, Clifton.

Halifax and District M.C.C.

The club met on the 17th inst. for the inaugural run to Ilkley, *viâ* Silsden. Although the weather was not good, twelve sidecars and six solo machines took part.

Finsbury Park C.C.

The Easter tour in Normandy. The start will be from headquarters at 5 a.m., the boat leaves Newhaven at 11-30 a.m. Friday evening will be spent in Dieppe, the two following days in trips to places of interest and the return will be on Easter Monday.

Herts County A.C. (Motor Cycle Section).

A members' hill-climb for the motor cycle section will be held on the 30th inst. There will be fourteen classes. Entries and enquiries should be addressed to Mr. E. A. Colliver, Chaulden, Boxmoor, Herts.

Brookdale Club (Catford).

The opening run will take place on the 31st inst., destination Brighton. A 100 miles reliability trial will be held over a Kent course on Easter Monday, including a twenty miles non-stop portion with Westerham being taken on the run.

Canterbury and District M.C.C.

A hill-climb was held on Barn Hill, Wye, on the 14th inst. Results:

CLASS I.—For members who have not won a prize.

		Formula.
1.	G. Crump (3½ h.p. Rudge)	314
2.	A. Clark (3½ h.p. T.T. Triumph)	274
3.	P. Kingsford (3½ h.p. Triumph)	254

CLASS II.—Handicap.

		Time.
1.	T. Timson (3½ h.p. T.T. Rudge)	44⅖s.
2.	C. Stephenson (3½ h.p. Brown)	45⅕s.
3.	G. Crump (3½ h.p. Rudge)...	45⅗s.

CLASS III.—Flexibility Test: Greatest difference between fastest and slowest times.

		Difference in time.
1.	T. Timson (3½ h.p. T.T. Rudge) ...	1m. 56⅘s.
2.	E. Dean (3½ h.p. Bradbury)	1m. 36s.

A. Clark (T.T. Triumph, 2m. 12⅗s.) was disqualified for breaking the tape with his engine not firing, and stopping a few yards from the start. He was allowed to ride a trial, subject to the matter going before the committee.

CLASS IV.—Sidecars.

		Formula.
1.	G. Crump (3½ h.p. Rudge)	313
2.	J. Poxon (3½ h.p. Bradbury)	204

The formula used is equivalent to that recommended by *The Motor Cycle* last autumn, and gives much more satisfactory results than the A.C.U. formula.



UNNERVING A COMPETITOR.

The above is a frequent scene in hill-climbs which has led to many an accident. We refer to competitors descending the hill before all the others in that class have ascended; though, in fairness to those competitors depicted, it should be mentioned that they are well clear of the course

Questions & Replies



A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Improving a Silencer.

I am thinking of fitting a long pipe to my 3½ h.p. Humber motor cycle. I do not intend doing away with the silencer. If I decide to have it fitted would it increase the power of the engine? Would it make the engine more silent?—G.A.C.L.

The best way to do this would be to use the existing silencer as an expansion chamber, and to remove therefrom all baffle plates and bring your long pipe from this silencer to the rear of the machine. The long pipe will increase the power, but without the expansion chamber would make more noise.

Aylesbury to Hoylake.

I intend making a trip from Aylesbury to Hoylake with my four-cylinder F.N. and sidecar (single gear), and shall be much obliged to you if you will kindly let me know the best route avoiding large towns. Please give me the mileage.—H.S.P.

We have pleasure in giving you the following route: Aylesbury, Winslow, Buckingham, Towcester, Weedon, Daventry, turn right for Watling Street till you reach a point two miles south of Lichfield, go through Lichfield, Rugeley, Weston, Stone, Pipe Gate, Nantwich, Tarporley, Chester, to Hoylake. The distance is approximately 172 miles.

Congleton to Wells (Norfolk) and Back.

Will you kindly give me the best route from Congleton to Wells (Norfolk)? What is the distance? On the return journey, could I adopt a different route without making a very great difference in the distance I should have to travel? If so, would you kindly give me a route for the return journey?—M.S.

Your best route would be as follows: Congleton, Leek, Ashbourne, Derby, Nottingham, Bingham, Grantham, Donnington, Holbeach, Long Sutton, Lynn, Fakenham, to Wells. You may return by a slightly different route: From Wells, through Burnham Market, Flitcham, Lynn, Wisbech, Peterborough, Wansford, Uppingham, Leicester, Ashby-de-la-Zouch, Burton, Tutbury, Uttoxeter, Cheadle, Leek, to Congleton. The distance is approximately 164 miles for the outward journey and 176 miles for the return journey.

A Country Doctor's Requirements.

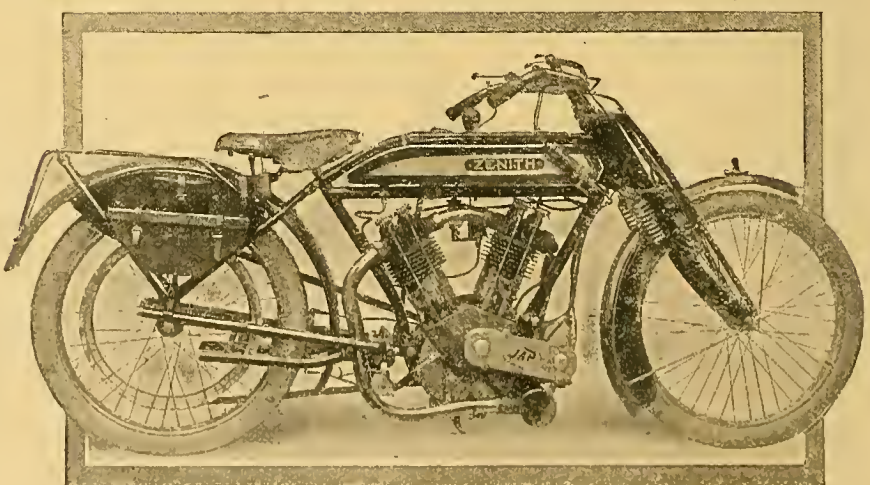
As a middle-aged country practitioner, living in a hilly district, and finding that my powers as a cyclist are not what they once were, but otherwise feeling fit and well, I feel driven to the necessity of considering whether a motor cycle will help me out of my difficulty. Before doing so, I would feel obliged by your assisting me in the following queries: (1.) Is the modern motor cycle reliable? (2.) Is it good value for the money? (3.) Can its driving be easily learned by a cyclist? (4.) What would it cost annually to insure with a first-class insurance company against third party risks, fire, theft, and damage by accident? (5.) What are the advantages of membership with a Cycle Union, preferably in Scotland?—ARRAN.

(1.) The modern motor bicycle is quite reliable. (2.) If you buy a machine of good reputation it is good value for the money. (3.) Its driving can be learned quite easily. (4.) You may reckon the upkeep to be about ¾d. per mile for a 3½ h.p. machine; rather less for a lightweight. The cost of insurance is, roughly speaking, £1 10s. to £2 per annum. (5.) There is no purely motor cycling body in Scotland. Probably your best plan would be to become a motor cycle member of the Scottish Automobile Club; secretary, Mr. R. J. Smith, 163, West George Street, Glasgow.

Cost of Running a Lightweight.

(1.) How many miles per gallon does a 2½ h.p. Singer (three-speed F.E.) run? (2.) Could the above engine be started with back wheel on the ground? (3.) Is it necessary to push out the clutch to change the gear with the Armstrong three speed? (4.) What cycles are fitted with the "Lukin" carburetter? Lately in *The Motor Cycle* I have seen balance sheets, as regards cost of running a motor cycle, but I have never yet seen the cost of running a lightweight, most of them being 3½ h.p. machines. I should very much like to see the balance sheets of a few riders of 2½ and 2¾ h.p. machines.—D.P.J.

(1.) It depends upon the roads and how the machine is driven, but you should get about 120 miles per gallon. (2.) No, not with the Armstrong three speed. (3.) It is advisable when changing up unless you raise exhaust, but not necessary when changing down. (4.) We do not know of any motor cycle which is fitted with a Lukin as standard. The Lukin is at present made to fit any single-cylinder engine in place of the B. and B. without alteration. (5.) A lightweight should cost about one-third less to run than a 3½ h.p. machine. We are discontinuing this feature for a time, having published a good many pages on this subject.



A new 8 h.p. twin Zenith with overhead valve J.A.P. engine, used by F. W. Barnes in the last open hill-climb. This is the type of engine holding the world's motor cycle speed record.

Motor Cycle Camping.

Where can I obtain a light folding portable tent, such as is used by cyclists, and a ground cloth? What kind of stove or heating apparatus would you advise as being most suitable for a camping tour (preferably to burn petrol)?—G.K.

What we should advise you to do is to get into direct communication with the secretary of the Cyclists' Camping Association, Mr. A. P. Moeller, 6, Duke Street, Adelphi, W.C., who will supply you with full particulars. We understand that Messrs. John Piggott, Ltd., 117, Cheapside, E.C., also make a speciality of motor cyclists' camping outfits.

Adjustable Pulleys and Belt Slack.

Please give your opinion on the following points: (1.) Which is the better machine for sidecar work, Triumph or Rudge? (2.) Is it necessary to have a variable gear? (3.) Is the clutch likely to get out of order in the free engine models? (4.) When lowering gear (adjustable pulley), what becomes of the belt slack? Is it necessary to have two belts?—TRUDGE.

(1.) It is against our rule to differentiate between various makes of machines. Both are excellent. (2.) It is advisable to have a change-speed gear. (3.) The clutch will not get out of order if properly used. (4.) It is better to have two belts or an adjustable fastener, if the gear is lowered to any appreciable extent.

A General Overhaul.

(1.) I intend fitting a long exhaust pipe to my 5 h.p. twin Peugeot motor cycle, bringing it back to the back stays. What metal would you advise—brass or copper—and what gauge? (2.) What speed ought I to get out of this machine geared 4 to 1? (3.) What is the best place for the plugs on this engine? I find I can fit them in the compression tap orifice. Would this be better than at the side? (4.) I have a pair of Le Lion (French) 26 × 2½ wired covers. Are these likely to give trouble? I have no security bolts? (5.) Do you think I should benefit by fitting the N.S.U. two-speed as regards petrol consumption by coasting down hills? (6.) I have fitted a 1911 B. and B. What size jet would be suitable for this engine? (7.) What mileage ought I to do to the gallon of petrol? (8.) What distance should there be between platinum points on magneto (Bosch) when open?—F.W.

(1.) Neither brass nor copper would suit. These do not stand heat well. Fit a good steel pipe which is not too heavy. (2.) You ought to get about fifty miles an hour. (3.) It would always be better to fit the plugs at the side of the cylinder. (4.) If your rims are suitable there is no reason why the tyres in question should not be satisfactory without security bolts. (5.) You would undoubtedly get great benefit by fitting a N.S.U. two-speed gear. However, this would not affect your petrol consumption appreciably. (6.) The jet should be .031, commonly called No. 31. (7.) You ought to run about fifty or sixty miles to the gallon of petrol. (8.) The distance should be .4 mm.

Carburetter Adjustment.

(1.) Why is it necessary to cut off most of the air in order to start a motor cycle? (2.) In theory, apparently, there is a perfect mixture for all speeds and under all conditions. I imagine that there is one proportion of air and petrol which makes the most explosive mixture. (3.) Why then, in order to climb a hill, does one cut off the air? Is it that on the level one does not use the mixture which gives the most power? (4.) But if so, why should cutting off the air cause knocking? (5.) Would you also let me know if it is possible for an automatic carburetter to be so perfect that, besides mixing the gas, it does away with the necessity of advancing and retarding the spark? (6.) I have a 2¼ h.p. F.N., with automatic carburetter. Everything is in perfect order, but on a cold morning it will not start without five minutes' pedalling. Do you think if I fitted a cap over the air intake so as temporarily to strengthen the mixture it would start easier?—V.M. (Liège).

(1.) It is necessary to cut off the extra air at starting to obtain a correct mixture because when the piston speed is slow the suction on the jet is slight, and, consequently, much less petrol is drawn through than at higher speeds. (2.) This is quite true. (3.) For the reason just given. You do not close the air until the speed falls; also, as you suggest, one often runs on the level with the mixture on the weak side, giving all the air the engine will take. (4.) Cutting off some of the air stops knocking because it gives a mixture on the rich side which does not explode so quickly, and is, therefore, tantamount to retarding the spark. (5.) It is possible for an automatic carburetter to be so perfect that all air adjustment is unnecessary, but control over the ignition is very desirable at times. (6.) Most certainly.

Freight and Duty to Vancouver.

Would you be good enough to let me know the cost of the carriage of a motor cycle to Vancouver, and shall I have to pay any import tax? Will it be necessary to renew my licence and register it afresh?—G.L.W.

The cost of sending a machine to Montreal or Quebec would be 35s. 6d. From there to Vancouver you would have to apply to the Canadian Pacific Railway Company (62-65, Charing Cross, W.C.), for the cost of transport, or you could get a quotation for forwarding it direct from Messrs. Davies, Turner and Company, Limited, International Carriers, 52, Lime Street, E.C. The duty to Canada is 28% *ad valorem* if of British manufacture, or 35% *ad valorem* if of foreign manufacture. You will probably have to take out fresh licences when you get out there.

EXPERIENCES WANTED.

"C.W.C." (Bayswater).—Whittle or other belt suitable for a 3½ h.p. Zenith.

"D 347."—Dunkley sidecar.

"J.F.B." (Horsham).—5 h.p. Stevens, with and without sidecar.

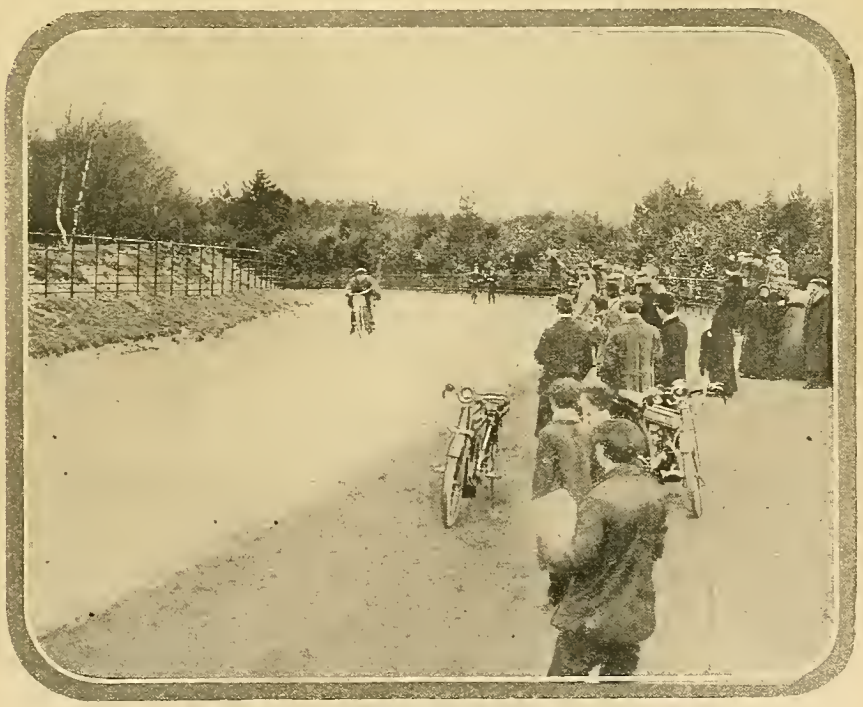
"W.H.B." (Watford).—D.H.K. or Mabon clutch on 2¾ h.p. machine.

"A.W.B." (St. Albans).—L.M. cyclecar. Reliability, hill-climbing, and speed.

"T.A." (Wallingford).—Mabon variable gear, N.S.U. two-speed gear; Gloria, Millford-Radial, and castor spring wheel sidecars, all for free engine 1912 Triumph.

"R.M.R." (Tring).—Rollo cyclecar.

"R.M." (Dunfermline).—Mabon clutch on 3½ h.p. engine.



ESSEX M.C. OPEN CLIMB AT ASTON HILL.

The first open hill-climb of 1912 did not attract such a representative entry as was anticipated, though good sport was witnessed. Our illustration is of a competitor at the top bend.

One Million Magnetos.

It is a matter of some historical interest that the millionth magneto manufactured by the Bosch Co. has just been received at the London headquarters in Newman Street, W.

Trade Announcement.

In view of pending litigation raised by Bowden Wire, Ltd., against the Bowden Brake Co., Ltd., of Birmingham, Messrs. James R. Nisbet and J. Dring, who were directors of both concerns, have resigned their directorships of the Bowden Brake Company.

Tyre Successes.

C. R. Collier used Hutchinson tyres for his ascent of Honister Pass. The same make of tyres were also used by the first competitor in each class of the Essex M.C. hill-climb on the 16th inst. B. Alan Hill (7 h.p. Indian), who made fastest time of the day, also used Hutchinson tyres.

Efficiency.

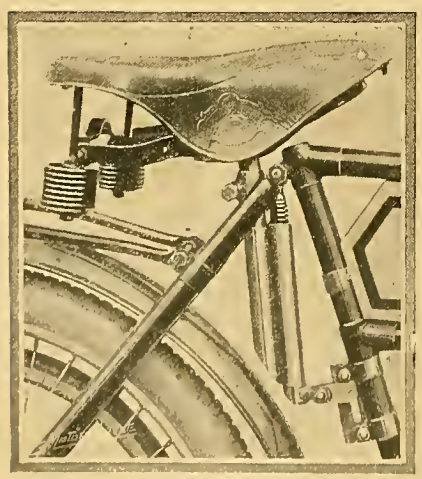
As an example of the power developed by the modern 500 c.c. engine, it may be noted that in the Essex M.C. open hill-climb Holloway's 3½ h.p. Premier made considerably faster time than twins of infinitely greater capacity. In fact, his time was only beaten by two machines, one of 7 h.p. and one of 8 h.p., and in each case by under two seconds.

Leggings for Lady Motor Cyclists.

Messrs. Rogers, Browne, and Richard, Ltd., 23, Jewin Street, E.C., the manufacturers of Autoclos, now obtainable at the depot of the Service Co., Ltd., have lately introduced leggings for lady motor cyclists, fitted with the Lightning fastenings described and illustrated in *The Motor Cycle*. A pair of these, which are beautifully made, have recently been supplied to Miss Hough, the well-known Douglas lady rider.

A New Spring Seat-pillar.

Hunt's patent spring seat-pillar, illustrated herewith, is suitable for fitting to existing machines, and enables a slightly lower saddle position to be adopted, if wished for. The component parts are few in number, and consist of one piece



of 8 section tube, one plunger and nut, two springs, and a slide which is attached to the down tube by means of clips. Springs of varying strength are fitted suitable to the weight of the rider.

SPARKLETS



Ladies' Mackintosh Costume.

The accompanying photograph is that of Mrs. A. B. Wade, of Cardiff, who is seen wearing a new mackintosh costume. Mrs. Wade informs us that for motor



Mrs. Wade wearing a new mackintosh costume.

cycling and walking it is far superior to an ordinary mackintosh, and the unique fastening of the skirt is the means of getting the costume off and on in a minute's time. It is made and sold by Messrs. Burrelli, Ltd., 2, Albany Road, Cardiff.

Catalogues Received.

The 1912 booklet of the P. and M. motor cycles is a very tastefully-arranged catalogue. In the introductory chapter, illustrations are published of the first P. and M. motor bicycle and the 1912 model on the same page, clearly showing that the principle of the original design first introduced in 1900 remains unaltered today. In addition to excellent half-tone illustrations of the various models, the catalogue contains instructions as to driving, management, and adjustment of these machines. Copies can be obtained on application to Phelon and Moore, Ltd., 4, Percy Street, Tottenham Court Road, London, W.

The Scott is an interesting machine at all times, therefore the 1912 catalogue should appeal particularly to our readers. All the Scott features are well illustrated and described, not the least interesting feature being the chapter on "The Scott Ideals," which should be read by all who are interested in two-stroke engines. The cover and some of the letterpress are in the well-known T.T. Scott colour, which Frank Philipp made popular in the Isle of Man last year. Copies can be obtained from the Scott Engineering Co., Mornington Works, Bradford.

The catalogue issued by Mr. J. Kirby, Broadgate, Lincoln, commences with a few notes on the history of the Lincoln Elk; then follow complete specifications of the several models, a list of spare parts, and line drawings and descriptions of the two-speed gear and clutch. The latter is operated by a contracting bronze band.

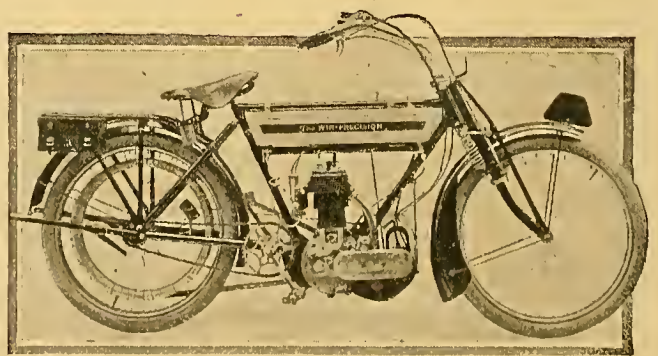
New Motor Cycle Tyre Firm.

The firm of Pirelli, Limited, 45, Basinghall Street, E.C., well-known as car tyre manufacturers, are specially turning their attention towards the motor cycle tyres. These are made in all standard sizes of the leather and steel-studded and plain ribbed types. Pirelli tyres are well-known for their excellent workmanship and wearing qualities.

We also have to acknowledge receipt of a pamphlet entitled "Pirelli and Company: 40 Years of Industrial Life," which contains some interesting facts concerning the Pirelli works. It is well got up, well illustrated, and well worthy of perusal.

Another Hand Cleaner.

We have received samples of Hopol pumice soap, manufactured by Messrs. Hopol, Ltd., Carntyne Chemical Works, Shettleston, Glasgow. The preparation is milled toilet soap containing a special grime dissolving solvent, pumice stone ground to a fine powder, and an antiseptic. The soap is claimed to give a lather containing these various grime removers, which quickly cleans away the oil and grease collected during repairs and adjustments. It is sold by the Service Co., Ltd., 292-293, High Holborn, W.C.



3½ h.p. 1912 Win-Precision. This—the latest production of the Wincycle Trading Co.—has Druid forks, Bosch weatherproof magneto, B. and B. carburettor, and Dunlop tyres.

'I'm certain

of a successful run at

EASTER

my mount's an

A.S.L'

Absolutely the most comfortable of all motor cycles. You feel no vibrations whatever. All shock is absorbed into air-springs or cylinders fitted to the front and back of the machine, which can be inflated like an ordinary tyre. The rider is literally

"Riding on Air."

Its reliability was proved in the recent London—Exeter run.

Head Office:

3, GT. WINCHESTER ST., LONDON, E.C.

Teleg.. Infrequent, London. 'Phone: 1435 London Wall. Works: Corporation St., Stafford.

Showrooms: The Motor Maintenance Co., 184, Great Portland St., W. Telephone: 4839 Mayfair. Sole Agents for Manchester and District: Manchester Motor Exchange, 32, Downing St., Ardwick.



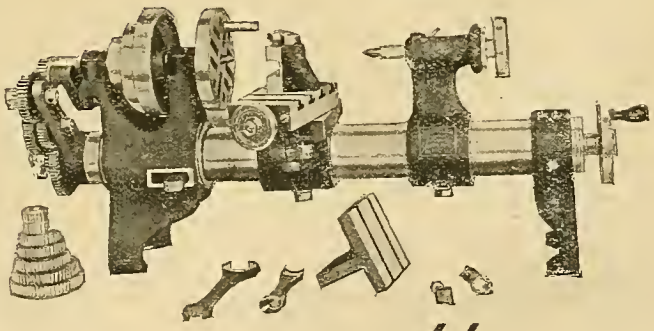
Motor Cyclists and Repairs.

Now that winter is over, there are many motor cyclists thinking — some of buying a new machine, some of putting their present one in condition after its long disuse in the winter, and others surveying the wear and tear of their past mud-plugging, dolefully thinking of bills for repairs and replacements to come.

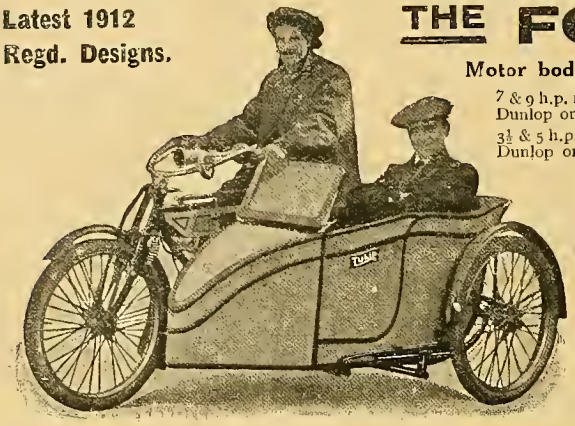
Our advice to all the above is to install in their own garage a handy little lathe such as illustrated here, and set to work on their own repairs. It is not difficult, it is interesting, it is cheap, and we help if you get stuck.

This lathe is £5, and can be had on the easy payment system. We will gladly send particulars.

DRUMMOND BROS., LTD.,
REED HILL,
GUILDFORD, SURREY.



Latest 1912 Regd. Designs.



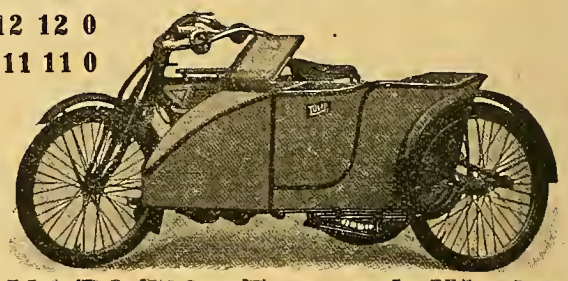
THE FORWARD SIDECAR.

Motor body built. Special Regd. Design Chassis for low built bodies.

7 & 9 h.p. model, fitted with Dunlop or Michelin tyre. £12 12 0

3½ & 5 h.p. Model, fitted with Dunlop or Michelin tyre. £11 11 0

Extras.—
Wind Screen, 25/-;
Aprons, 8/6; Luggage Carrier, 20/-;
Hood and Screen, £2.

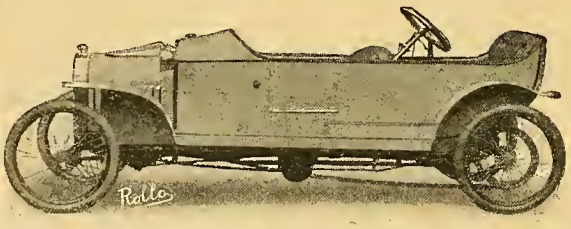


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Stoney Lane, Sparkbrook, Birmingham.
Telegrams—"Streamline, Birmingham." Telephone—Victoria 312.

An Ideal Four-wheeled Runabout.

FAST and SAFE.
Drives like a Car.



PRICE, ready for the road, including lamps and horn, **95 GUINEAS,**

or with Hood and Screen,
100 GUINEAS.

Write for particulars to

THE ROLLO CAR CO., LTD.,
140, CONYBERE ST., BIRMINGHAM.

SIDECAR MODELS.

Can give prompt deliveries of
"CLYNO." "BAT." "ENFIELD." "INDIAN."
Upwards of 100 second-hand Bargains.
Note the following and write for complete list.

1911 3½ h.p. F.E. **TRIUMPH**	£43	0	0
1911 3½ h.p. T.T. **TRIUMPH**	£42	0	0
1909 3½ h.p. F.E. **TRIUMPH**	£35	0	0
1909 3½ h.p. **TRIUMPH**	£31	0	0
1911 3½ h.p. **PREMIER**	£36	0	0
1911 3½ h.p. Two-Speed **HUMBER**	£40	0	0
1910 3½ h.p. Two-Speed **HUMBER**	£35	0	0
1911 3½ h.p. **KERRY**	£35	0	0
1910 2¼ h.p. Twin **ENFIELD**	£22	10	0
1910 2¼ h.p. Twin **MOTO-REVE**	£22	10	0

All machines guaranteed.

ROBERT BEVAN, Castle Street, CARDIFF.

HARRODS

Motor Accessories—
Overalls, Lamps, Speedometers, Horns, Tyres, etc.

Any Machine supplied on our unique system of Deferred Payments.

for RUNABOUTS (Morgan, G.W.K., Motorette, Rollo, & Sabella) and MOTOR CYCLES

Harrods can give immediate deliveries from stock of
P & M, Zenith, Bat, Bradbury, Singer, Motosacoche, Humber, Swift, Premier, Quadrant, Douglas, Matchless, Clyno, New Hudson, Rudge, Indian, Norton, Elswick, Browne.

HARRODS LTD. (Richard Burbridge, Managing Director), **LONDON, S.W.**

TWO USEFUL BOOKS.

HINTS AND TIPS FOR MOTOR CYCLISTS.
3rd Edition, containing a multitude of useful hints on the repair and improvement of the motor bicycle,—Information on the quickest and most economical method of "tuning up," etc. Price 1/- net. Post free 1/2.

"THE MOTOR CYCLE" ROUTE BOOK.
An invaluable companion to motor cyclists. Carefully chosen routes with best surfaces are given throughout the whole of the British Isles.
Price 1/6 net. Post free 1/9.

Obtainable from "THE MOTOR CYCLE" Offices, 20, Tudor St., London, E.C.

G. RAWS & SONS' Motor Cycling Clothing!

Suitable Waterproof Garments for Easter Riding.

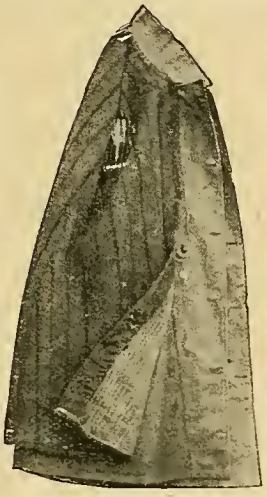


"STANDARD" SUIT.

In grey-green or fawn double texture cloths. Guaranteed absolutely waterproof. Strong and heavily proofed.

Jackets only.
Double-breasted, deep storm collar and throat tab. Inside and outside wind cuffs. Pockets lined.
Price **18/-**

Leggings only.
Leather adjustable boot straps, **V** shaped gussets and dome fasteners to exclude wind, rain, and dust. Shaped to extend over front of boot and protect eyelet holes. Price **8/-**
Complete Suit, **25/-**



"ALLSEASON" JACKET.

Just the Thing!

A Lined Waterproof!

Our own design. In grey-green, double texture cloth. Guaranteed absolutely waterproof. Double breasted. Deep storm collar and throat tab. Fitted with a warm **detachable** Fleece lining.

Price **25/-**

Lady's Allseasons made to order.



TROUSER-OVERALLS.

In grey-green or fawn double texture cloths. Guaranteed absolutely waterproof. All latest improvements to protect stomach from cold, wind, and rain. No tearing at fork. Specially designed to allow access to pockets, etc.

Price:
Without seat **13/11**
With seat - **15/11**

We are Motor Cyclists ourselves and know your requirements!!

TERMS: **Nett Cash with Order.** Goods sent By Return, carriage paid. Garments may be returned if not satisfactory, and money will be refunded,

Send chest measurement and length desired for Jackets, and inside leg measurement only for Leggings.

Send at once for illustrated catalogue and patterns to:

G. RAWS & SONS, Waterproof Clothing Specialists, The Albany, Oldhall Street . . . . **LIVERPOOL.**

MOSELEY
GROOVED



Extra strong beads, 3-ply heavy canvas

36/- per cover, 26 × 2¼ beaded.

FROM ALL AGENTS.

Catalogue free from the makers—

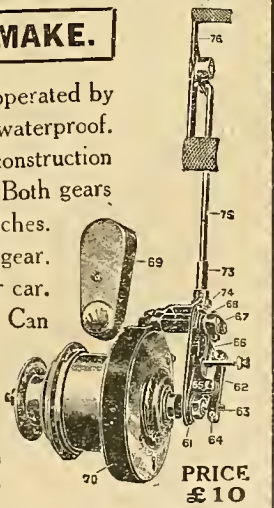
DAVID MOSELEY & SONS, LTD.,
Ardwick, MANCHESTER.

L&E

An exceptionally popular and thoroughly successful

TWO-SPEED HUB

"MILLENNIUM" MAKE.



IT is centrally designed—operated by one foot lever—dust and waterproof. Its simple, straightforward construction renders mistakes impossible. Both gears controlled by friction clutches. Unimpaired efficiency on high gear. Makes control equal to motor car. Essential to sidecar machines. Can be fitted to almost any machine.

WRITE FOR CATALOGUE.

LAKE & ELLIOTT, LTD.,
Albion Works, Braintree, ESSEX.

London Showroom: 14a, Great Marlborough Street, W.

PRICE £10
ready to fit.

Once Used

RICH'S PATENT — DETACHABLE TUBE — FREE CIRCULATION OF AIR — NOT BUTT ENDED

ENDLESS
OR BUTT ENDED
TUBES FITTED WITH THE
RICH DETACHABLE JOINT

Price:

1¾	2	2¼	2½	3	3½	Pedal	Tandem
3/6	5/6	6/-	6/6	8/-	8/6	1/9	2/-, 2/6

Save you pounds during the season. Send tube with size. Returned same day. Cut your tube nearly opposite the valve, or at a damaged part.

Always Used

PUNCTURES HAVE NO TERROR
when you use

The RICH Detachable AIR-TUBES

ADVANTAGES. By carrying a spare tube you can—

Replace tube in five minutes without unscrewing a nut on the machine. Repair at your convenience. Put a patch on the inside with ordinary rubber and solution which never shifts or leaks; no expensive prepared patches required, thereby saving time, trouble, and expense, also prolonging the life of tube and cover. No friction of patch on canvas of cover. Take the valve out and replace from the inside without interfering with valve seating. (All tubes are valve seated on the inside). Turn tube inside out like a stocking by taking the valve out. Take tube to the water for testing without taking machine.

WHY they are the BEST and CHEAPEST.

BECAUSE—They are made of the **BEST** rubber and of substantial thickness. Have free passages of air, and NO butt-ends to burst. Save you hotel and train expenses. Enables you to keep an appointment. No need to repair by the roadside and keep your friends waiting. Lasts longer than any other tube. Saves your tyre bill.

FIRST IN 1904, FIRST ever since.
GUARANTEED AIR-TIGHT.

PRICE LIST.

Heavy. 26 in.	28 in.	Extra Heavy. 26 in.	28 in.
1¾ .. 11/-	.. 12/-	2¼ .. 21/-	.. 23/-
2 .. 14/-	.. 16/-	2½ .. 24/-	.. 27/-
2¼ .. 16/-	.. 18/-	3 .. 30/-	.. 33/-
2½ .. 18/6	.. 20/-	3½ .. 36/-	.. 40/-
24 in., 6d. less.		24 in., 1/- less.	

Pedal Cycle, 1¼, 1⅜, 1½, 7/- Tandem, 1⅝, 1¾, 8/6

Don't go by the first cost, but by the money you save in using them.

IMPORTANT.

We draw special attention of the trade and users of our tube, to turn the female end, No. 1, in before joining, also to use a *small quantity* of our lubricant on the male end, No. 2—a little moisture will revive this when once used. Our tubes are often condemned through these omissions. See that you get the instructions, lubricant and correct size.

Don't spoil your Tour by delay with punctures. Carry a Spare.

If you cannot obtain them from the Trade, write direct. Sent per return post.

THE RICH COVER.



NON-SLIPPING AND RELIABLE

PRICE LIST.

Size,	Wired Cover.	Beaded Cover.
26 x 2	30/-	32/-
26 x 2¼	34/-	36/-
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BEST VALUE ON THE MARKET.
TRY ONE.
OTHER SIZES TO ORDER.

Further particulars, write for booklet.

RICH DETACHABLE AIR TUBE CO., CRAWLEY, Sussex.
TELEGRAMS: "RICH, CRAWLEY."

STERNOL

The Standard of Excellence

Sternol Motor Oils set the standard for quality and results. Some of the reasons why YOU should use Sternol are: By doing so you reduce running expenses; better lubrication is secured at less cost (because Sternol is so economical); the engine runs cooler and gives out full power; and your Motor Cycle lasts longer because there is less friction and wear.

STERNOL

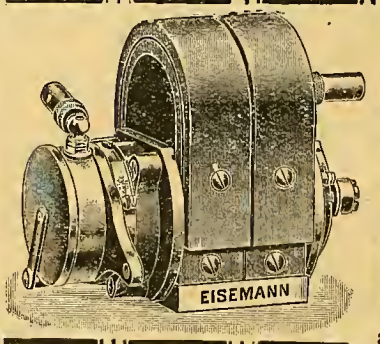
KING of MOTOR OILS

retain their full lubricating qualities at high temperatures. Harmful chemical changes, carbon deposit, excessive smoking, hot bearings, etc., do not occur. Each grade of Sternol Oil or Grease is "just right" for its particular purpose.

Ask any good Agent for Sternol Oil or Grease, or write for full particulars stating requirements to

"STERNOL"
(The Stern Sonneborn Oil Co., Ltd.),
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Finsbury Square, London, E.C.





FOR LONG RUNS

and consistent reliability,
there is no magneto to equal the

EISEMANN

Fit it to **your** machine for your Easter tour.

Gives good and consistent service under the most trying and arduous conditions.

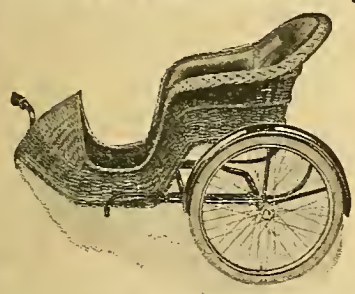
THE EISEMANN MAGNETO CO.,
43, BERNERS STREET, OXFORD STREET, LONDON, W.
Telephone: No. 4601 City. Telegrams: "Rousillon London."

C.D.C.

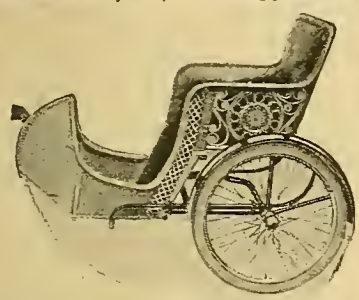
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1912 CANOE CORONETS.

Immediate Delivery.



PATTERN 1. High-class canoe front body; latest quick detachable joints; extra strong joints; **£6 6 0**



PATTERN 3. Best quality cane body; strong axles; quick detachables; **£7 7 0**.



PATTERN 4. Beautiful design cane body, with side doors; **£8 8 0**.

Instructive Catalogue post free, giving illustrations and full particulars of all models of Coronet Sidecars. Every model certain to satisfy and save money for buyers. Full of improvements. Quick detachable joints. Latest car pattern mudguards. Wicker, cane, or coach-built bodies. Child's reversible seat. Excellent upholstery.

MAGNETOS. MAGNETOS. MAGNETOS.

We have a large stock of the best makes from **S9/6.** Your old coil and acc. taken in exchange.

NEW CARBURETTERS FOR OLD.

27/6 and your carburetter secures a new 1912 B. & B. with h.b. control, detachable dust screen.

18/6 and your carburetter secures a new Amac with variable jet and h.b. control.

SENSPRAY Carburetters, 1912 models, **£2 2s.**

BOOTH'S MOTORIES,

KEIGHLEY MILLS, BEDFORD ST. NORTH

(off Pellon Lane), **HALIFAX.** Tel. 1062.

MOTOR BICYCLES FOR SALE.

7-9h.p. 2-speed Free Engine Magneto 1910 V.S., new 1912 model maximum hand trip recorder Jones speedometer new Continental and Palmer cord covers, have only been on for 300 miles; cost £75, what offers. —F. M. Fox, H.M.S. Calliope, Newcastle-on-Tyne.

TWO 1911 Standard B.S.A.'s, £38; two 1911 3½h.p T.T. roadster Triumphs, £40 each: 1911 brand new 3½h.p. Singer, £40: 3½h.p. Triumph, standard £28: 2¾h.p. Hobart lightweight, £23; 6h.p. N.S.U., 2-speed, complete with Montgomery sidecar, £35: all above perfect, and subject approval; any examination.—Stouts' Garage, Egremont, Cumberland. 'Phone: 1X2.

3½h.p. New 1911 Free Engine Triumph, with 1911 pattern spring fork, complete, lamp, and horn £52: 1911 Douglas, new, 2-speed, clutch model, £42 —Stout's Garage, Egremont, Cumberland. 'Phone: 1X2

SECTION II.

York and Lancashire.

YORK.

B.S.A., 1912, free engine, in stock, immediate delivery —Below.

B.S.A., 1912, 2-speed model, in stock, immediate delivery.—Below.

PREMIER, 1912, 3-speed, in stock, immediate delivery.

THREE Premier 1912 2¾h.p. Motors in stock; the King of Lightweights.

CALTHORPE 1912 Free Engine Lightweight in stock.

TRIUMPH, 1910, re-enamelled and plated, new tyres Mabon clutch, guaranteed perfect; £38, or offer.

RUSSELL, Agent, York.

SIDECARS from £4/10.

ARIELS, at Gourlay's, Fallowfield, Manchester.

THE Great Douglas Agent, Douglas Gourlay, Fallowfield, Manchester.

HODGSON for Clynos (in stock).

HODGSON for Premiers (in stock).

HODGSON for Sidecars (in stock).

HODGSON, 10 Horton Rd., Bradford. Tel.: 6361

1912 F.E. Rudge, ridden 80 miles, perfect; £47/10.—27, Turkey St., Accrington.

INDIAN, 7h.p., new July, 2-speed, free engine; absolutely lowest, £50.—Golby, Batley.

MATCHLESS, Nos. 5 and 7 models; delivery due inquiries invited —Golby, Batley.

MULTI-SPEED Rudge in stock; the last word in variable gears.—Golby, Batley.

INDIAN, 1911, blue, 5h.p., clutch, machine and tyre as new.—48, Gloucester Av., Blackpool.

1911 Triumphs, almost new, clutch; £42; standard £38; spares.—81, Long Lane, Preston.

WIGAN.—Rover agency. Free engine and sidecar 3-speed models in stock at Timberlake's.

TIMBERLAKE. — Humber agency. 3½h.p. 2-speed model, immediate delivery.—King St., Wigan.

WIGAN.—For the famous New Hudsons, 2¾h.p. and 3½h.p. 3-speed models in stock at Timberlake's

TIMBERLAKE'S for Premiers; all types for immediate delivery. We have the pick of the north

WIGAN.—B.S.A.'s, all models in stock at Timberlake's, King St., Wigan.

TIMBERLAKE'S for exchanges. If you want to exchange your present machine for a new one, consult us. It will pay you.

WIGAN.—A number of second-hand machines always on hand; all bargains. Send for list to Timberlake's.

TIMBERLAKE'S for sidecars. Our value is marvellous.—Timberlake's, Wigan.

1912 Triumph, free engine model, in stock; £53.—Wm. Ward and Sons, Wetherby.

1911 Douglas, in good order; bought 1912 same make. —Dr. Aikman, 50, Market St., Wigan.

9h.p. Bat-Jap, dual ignition, splendid sidecar machine; £28.—Barker, Fountain St., Huddersfield.

LATE 1911 Bradbury, very little used indeed; £36/10.—Bannister, 93, Briggate, Leeds.

1911 5-6h.p. 4-cyl. F.N., good as new; £37.—Box No. 77, *The Motor Cycle* Offices, Coventry.

2¾h.p. De Dion, Chater-Lea, copper torpedo, good going order; £8/10.—1, Brown St., Gorton.

2¾h.p. M.M.C., X'All spring forks, very low; £11.—128, Roseneath Rd., Urmston, Manchester.

LIGHTWEIGHT F.N., running order, wants accumulator; offers.—Armitage, Clarendon St., Hyde.

1912 PREMIERS.

The most successful machine of the year. The 3½ h.p. Three-speed Model, ideal for sidecar work. We can deliver from stock, and offer best exchange terms.

TRIUMPH, 1909, two speeds	£33 10
CHATER-LEA, 4 h.p. Twin Peugeot, 1911	£20 0
REX DE LUXE, 5 h.p., two speeds, 1909	£27 10
REX, 3½ h.p., M.O.V., low built	£6 18
N.S.U., 3¾ h.p., 1909, 2-speed gear	£23 10
REX DE LUXE 5 h.p., twin, two speeds, handle starting, M.O.V., 1911 model	£48 10
REX DE LUXE, 5 h.p., twin, 2 speeds, 1910	£37 10
REX, 3½ h.p., spring forks, magneto, h.-b. control, 1909 model	£22 10
N.S.U., 4 h.p., single-cylinder, new two months ago	£28 10
REX, 3½h.p., 1908, spring forks, magneto, h.-b. control, beautiful condition	£18 10
N.S.U., 3½ h.p., two speeds magneto	£19 10
MOTO-REVE, 2¾ h.p., 1911, Armstroog 3-speed	£25 10
QUADRANT, 3½ h.p., magneto, spring forks	£16 10
PREMIER, 3½ h.p., new, 1911 model	£38 0
N.S.U., 3½ h.p., M.O.V., magneto	£15 10
N.S.U., 3 h.p., M.O.V., nice order	£10 0
REX DE LUXE, two speeds, magneto, handle starting, h.-b. control	£22 10
PREMIER, 3½ h.p., 1911, 3-speed, new	£46 10
ARIEL, 2¾ h.p., J.A.P. engine, 26in. wheels	£7 10
HOBART, 3 h.p. vertical engine, low	£8 10
KERRY, 2¾ h.p., 26in. wheels, vertical engine	£8 10
OLYMPIC, 3½ h.p., vertical engine, 26in. wheels	£6 10
PREMIER, 3½ h.p., 1912, three-speed gear	£58 0
PREMIER, 2¾ h.p., 1912, three-speed gear	£47 1
QUADRANT, 3 h.p., vertical engine	£5 10

PUSH CYCLES TAKEN IN EXCHANGE.



TEE BEE LOW SEAT-PILLAR, 5/- each.

GREAT CLEARANCE LINE

New Dunlops, 28 x 2 and 2¼, wired edges	10/8
26 x 2¼in. Genuine Hutchinson Tubes	6/11
24 x 2 and 2¼ Beaded Clipper Covers, new	8/6
Best Quality Butt-ended Tubes	7/9
150 New Tubes, 26 x 2¼	5/11
Rubber-studded Covers, best make	25/-

ENGINES.

1¾ h.p. PRECISION engines, new 1912 models. Your present engine taken in exchange. Delivery from stock.	
3½ h.p. AUTO MOTO, good order	£1 15
3½ h.p. N.S.U., complete with magneto	£5 10
3 h.p. Twin N.S.U., with magneto	£9 10
2¾ h.p. MINERVA	45 -
3½ h.p. CLARENDON, M.O.V.	£2 15
4½ h.p. BUCHET, water-cooled	£6 15
3 h.p. DARRACQ, water-cooled	£9 10
2¾ h.p. DE DION	35 -

MISCELLANEOUS.

B. & B. and Amac Carburetters	5/6
Wire Car Wheels, with good Goodrich Tyre, each	10/-
New Amac Variable Jet and H.-B. Control	18/6
New B. & B. Carburetter, h.-b. control	21/6
Longuemare, Minerva, F.N. Carburetters	4/6
Long Handle-bars, dropped ends 5/6 and	6/6
Coronet Silencers, up to 5 h.p. 3/3 and	4/6
New Handle-bar Mirrors	2/3
Gripskin Belting: ⅞in. 10d., ⅞in. 11d., rin.	1/-
Wide Mudguards: 3in. 2/3, 4in. 2/11 pair.	
New Sidecar Frame, Wheel Fittings and Guard	35/-
Minerva Twin Plain Coil	6/-
Powell & Hanmer 41 Lamp	11/6
16 Guinea Lowen Sidecar	£4 4
Nearly New Coronet Sidecar	£3 10
New Wheel built with 1912 Millennium 2-speed hub, belt rim	£9 0
New Footrests	2/6
New Mirror Lens Lamp with generator	12/6
New Coronet Pistons, 81 mm. bore	2/6
Longuemare Carburetter, h.-b. control	7/6

Booth's Motories,

Keighley Mills, Bedford Street North, Halifax.

Tel. 1062.

SECURE AND have for EASTER a SECOND HAND FROM MAUDES'

—and you can be sure it will be absolutely reliable and ready to ride. Our experts will tune it up for you and all you have to do is to enjoy it. Let us know your requirements and we will quote you lowest possible price and easy terms if desired. Write now and be in time.

A FEW SECOND-HAND BARGAINS FROM OUR LIST. FIRST CHEQUE SECURES. COMPLETE LIST FREE.

ALL
GUARANTEED MACHINES.

A few Bargains in 1911 Rexes as below:

	Maker's Price.	Our Price.
5 h.p. DE LUXE	60 Gns.	46 Gns.
3½ h.p. CONE CLUTCH	48 Gns.	37 Gns.

All new and guaranteed.

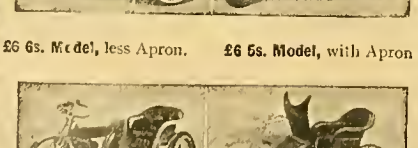
Stock No. **SECOND HANDS.**

211. **REX DE LUXE,** 7 h.p., 1911 model £44
277. **TRIUMPH,** 3½ h.p., 1909 model, tourist .. £23
228. **F.N.,** 4½ h.p., four-cylinder model £22
247. **CHATER-J.A.P.,** 4 h.p., 1910 model, mag. £26
183. **N.S.U.,** 5½ h.p., 1908 model, two speeds .. £25
172. **TRIUMPH,** 3½ h.p., 1908 model, standard £14
200. **V.S.,** 5 h.p., 1909 model, Druffault forks .. £2[illegible]
168. **KERRY,** 3½ h.p., 1910 model, clutch £30
177. **N.S.U.,** 5½ h.p., 1908 model, 2 speeds £26
236 **REX,** 3½ h.p., 1911, cone clutch, new £39
148. **N.S.U.,** 5½ h.p., 1908, 2 speeds, take sidecar £22
257. **MINERVA,** 4½ h.p., twin, spring forks £18
265. **TRIUMPH,** 2½ h.p., **J.A.P.** engine, good order £10
170. **SCOTT,** two-stroke, 2 speeds, Palmers £25
278. **N.S.U.,** 3½ h.p., 2 speeds, spring forks £24
276. **PHOENIX** quadcar, 8 h.p., 2-seater, mag. £30
188. **BROWN** tricar, 3 h.p., 3 speeds £10
267. **N.S.U.,** 3 h.p. magneto, low built £14
287. **F.N.,** 2½ h.p., 1910 model, 2 speeds..... £26
289. **REX,** 3½ h.p., 1909, Tourist, magneto £22
291. **TOM SILVER,** 1910, 3½ h.p., magneto £24
292. **EXCELSIOR,** 3 h.p., handle-bar control .. £8
294. **REX,** 5 h.p., Tourist, spriog forks £17
207. **REX** Airette, 5 h.p., wants overhauling .. £14
293. **STAR** Car, 6 h.p., 2-seater..... £20
203. **BEDELIA,** 4½ h.p., magneto, like new.... £38
300. **WOLF,** 1¾ h.p., lightweight £8
301. **ANTOINE,** 3½ h.p., free engine, Chater frame £10
297. **TRIUMPH,** 3½ h.p., 1911, as new, speedometer £38
298. **REX,** 5 h.p., 1910, fine machine £30
295. **F.N.,** 5-6 h.p., 1911 model £30

THE PORTLAND SIDECAR.



£6 6s. Model, less Apron. £6 6s. Model, with Apron



£7 7s. Model. £8 8s. Model.

Handsome, strong, comfortable, and efficient, Models from 6 to 12 guineas. Send two stamps for sidecar catalogue.

MAUDES' MOTOR MART,
138, GREAT PORTLAND STREET, LONDON, ——— W.

Telephone—522 Mayfair.
Telegrams—"Abdicate, London."

MOTOR BICYCLES FOR SALE.

INDIAN, 1910, 5h.p., splendid order, 1911 forks and handle-bars; £36.—Farrell, Lowerhead Row, Leeds.

P. and M., 1911, perfect condition; rare chance; best offer.—Gamman, High St., Doncaster. Tel.: 93.

LIVERPOOL.—Official agents for Douglas motors; early deliveries.—The Colmore Depot, 18, Renshaw St.

LIVERPOOL.—Chater-Lea No. 7, the sidecar special, delivery from stock, Chater and J.A.P. engines.

LIVERPOOL. — Bat; early deliveries of Model 1, single gear and 2-speed; delivery from stock, 8h.p. single gear.

LIVERPOOL.—New Hudsons, 3½h.p., 3 speeds, the sidecar single, standard and colonial models, delivery from stock.—The Colmore Depot, 18, Renshaw St.

LIVERPOOL.—Macbeth, 3½h.p. Percision, single gear and clutch models, delivery from stock.

LIVERPOOL. — Olyno, the mountain climber; now booking dates; guaranteed for early deliveries.

LIVERPOOL.—Official agents for Millford, Montgomery, and Turner sidecars.—The Colmore Depot, Renshaw St.

LIVERPOOL.—Douglas, several shop-soiled and second-hand 1911 models from £27, all reliable and tested.—The Colmore Depot, 18, Renshaw St.

1911 Bradbury, as new; £34, or near; splendid condition, unworn.—Swaine, 31, London St., Southport.

MOTOSACOCHE, 1¼h.p., spare accumulator, good running order; £9/10.—Lockwood, 28, Abbey Walk, Halifax.

SCOTT, 1911, in perfect condition, ideal sidecar machine.—Dr. McManus, County Asylum, Lancaster.

WANT a Clyno, 65 gns.?—We have them; immediate delivery; exchanges. — Maudes' Motor Mart, Halifax.

3½h.p. Triumph, new condition, 1908, £25; Kerry, 1911, £29; 3h.p. Triumph, £10.—168, The Moor, Sheffield.

BRADBURYS.—New machines in stock; one 1911, in splendid order, £37/10. — Williams Bros Lytham.

3½h.p. Motor Cycle, accumulator, right cheap, spring forks, adjustable pulley, etc.—Alderson, Starbeck, Harrogate.

PHELON-MOORE, 1910, with Millford sidecar, accessories, spares, overalls; £49.—Hardman, Yeadon, near Leeds.

REX, 3½h.p., splendid order, new belt and tyres; trial allowed; nearest offer £9.—22, Abraham St., Blackburn.

PICKLES for Lincoln Elks.—3½h.p. £34, 2 speeds £42. 1911 3½h.p. Lincoln Elk £26; owner buying 1912 model.

PICKLES for sidecars from 5 guineas, in stock; B.S.A., Chater-Lea, Royal Avena, J.A.P.; Michelins 17/6; machines sold on commission, 5%; no sale, no charge.—Pickles, Church St. Garage, Bradford.

OFFERS wanted.—Triumph (soiled), 2½h.p. Enfield, 3½h.p. Brough, free engine, 5h.p. Rex.—86, Fargate, Sheffield.

COLMORE Depot, 261, Deansgate, Manchester.—1911 Lady's Douglas, model F, brand new, guaranteed; to clear at £45.

COLMORE Depot, as above.—1911 Douglas, fixed gear, brand new, December delivery; to clear at £35/10.

MATCHLESS, 1912, any model, earliest deliveries; 8h.p. 2-speed, most popular passenger machine.—Write, Colmore Depot, Manchester

MATCHLESS, 1911, 3½h.p., single speed, not done 1,000 miles, as new, perfect condition; cheap, £37.—Colmore Depot, 261, Deansgate, Manchester.

A.J.S., 1911, brand new, 2-speed, chain drive, guaranteed; list price 44 guineas, first cheque 39 guineas secures.—Colmore Depot, 261, Deansgate, Manchester.

COLMORE Depot, 261, Deansgate Manchester.—You want a Matchless, Douglas, Premier, Rudge, Bradbury, N.S.U., or other make. Write us. Exchanges our speciality.

A.J.S., 1911, single speed, done only 600 miles, as new; £33/10.—Colmore Depot, Manchester

ENFIELD, 1910, single speed, good order; £20.—Colmore Depot, Manchester.

DOUGLAS, 1909, single speed, good order; trial; £24/10.—Colmore Depot, Manchester.

N.S.U., 6h.p., 2 speeds, Millford radial castor sidecar, 1910, perfect condition; £36.—Jones, Hurst Nook, St. Anne's-on-Sea.

1912 Humbers and Rovers; immediate delivery from stock; also Millford sidecars. — Mudgwick's, Knowsley St., Bolton.

BRADBURY, Premiers, Triumphs, Ariels, 1912 models now in stock; exchanges entertained.—Gornall, Pilling, Garstang.

F.N., 2¼h.p., long handle-bars, h.b.c., very low, excellent condition; £10; gun wanted.—Vayro, 7, St. Martin's Place, Scarborough.

DEFINITE DATES FOR DELIVERY —1912 MODELS

—we are noted for quickest delivery, and you can depend upon the definite dates below. Your old machine in part payment and easy terms arranged if desired. Special attention given to special requirements. Let us have YOUR enquiry. We can satisfy YOU as we have thousands of riders all over the Kingdom. Write or call NOW.

WE CAN DELIVER UNDER-MENTIONED IN TIME FOR EASTER.

1912 **CLYNO,** 6 h.p., 2-speed	£68	5*
1912 **REX,** 6 h.p. Sidette	£75	0*
1912 **REX,** 5 h.p., Tourist	£50	0*
1912 **REX,** 5 h.p., Speed King	£50	0*
1912 **REX,** 6 h.p., de Luxe	£62	10*
1912 **REX,** 4 h.p., de Luxe	£56	0*
1912 **MATCHLESS,** 7 h.p., Model No. 7 ..	£73	10*
1912 **A.C.** Sociable	£37	10
1912 **CHATER-LEA,** No. 7	£78	15*
1912 **NEW HUDSON,** 8B	£59	17*
1912 **PREMIER,** 3½ h.p., 3-speed	£58	0*
1912 **ARIEL,** 3½ h.p., variable gear	£52	0
1912 **RUDGE,** Clutch Model	£55	0*
1912 **RUDGE,** Standard	£48	15*
1912 **RUDGE,** Multi-speed	£60	0
1912 **RUDGE,** T.T.	£48	15*
1912 **ZENITH,** 6 h.p., Gradua gear		
1912 **ZENITH,** 3½ h.p., Gradua gear	£55	13*
1912 **DOUGLAS,** Model G	£41	0
1912 **CORAH,** T.T., 3½ h.p.	£48	0*
1912 **KERRY,** 3½ h.p., 2-speed model	£56	14*
1912 **ENFIELD,** 6 h.p., sidecar combination	£84	0*
1912 **BRADBURY,** 3½ h.p., 2-speed	£55	0
1912 **INDIAN,** 7 h.p., 2-speed	£76	0*
1912 **ROVER,** 3½ h.p., 3-speed (sidecar model)		
1912 **PREMIER,** 3½ h.p., 3-speed	£58	0
1912 **BRADBURY,** Clutch Model	£54	10*
1912 **ARIEL,** 3½ h.p., 3-speed model	£59	10
1911 **REX,** 5 h.p., de Luxe	£48	6*
1911 **REX,** 3½ h.p., cone clutch	£39	10*

At the time of going to press with this advert., we can give delivery from stock of models marked thus (*).

YOU MUST SEE OUR "DUTCH CLOG" £11 11s. SIDECAR. Write for lists.

MAUDES' MOTOR MART,
138, GREAT PORTLAND STREET, LONDON, ——— W.

"The SPOT for Bargains."

SCOTT'S.

DON'T BE TOO LATE FOR EASTER.

RUDGES

Two-speeds, Free Engine.

The engine starts with back wheel on the ground, and on test these Rudges give 8 h.p.

RUDGE, two speeds, free engine, and adjustable pulley **£56 10**

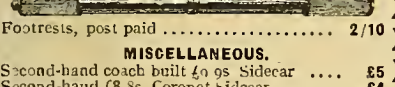
ALL MACHINES GUARANTEED AND ACTUALLY IN STOCK.

RUDGE, 1912 standard **£48 15**
RUDGE, 1912 T.T. **£48 15**
RUDGE, Multi-gear Model, delivered 1st March **£60**
RUDGE, Racing Model, 1911, all improvements, very speedy, first-class condition **£40**
ROYAL ENFIELD, any model .....
HUDSON, new, three-speeds ..... **57 Gns**
ZEN TH-GRADUA, new **£55 13**
PREMIER, three-speed gear, 1912, new **£53**
J.A.P.-CAMPION, new ..... **38 Gns**
P. & M., 1911, like new **£51**
TRIUMPH, 1911, clutch model, not done 400 miles **£49**
REX, 1910, several improvements **£27 10**
REX, 1910, Binks cartburetter..... **£26**
REX, 1000, spring forks, etc. **£20**
N.S.U., 3½ h.p., 1908, magneto, h.b.c., good and sound throughout **£21**
HUMBER, 1909, 3½ h.p., two speeds, very powerful. **£28**
N.S.U., 3 h.p., magneto, all improvements .. **£18**
QUADRANT, 3½ h.p., take a sidecar, good condition **£12**
MOTOR-REVE, Twin cylinder, 3-speeds, like new **£36**
PREMIER 3½ h.p. 1911, not done 500 miles .. **£36**
REX DE LUXE 1909, 5-6 h.p., 2-speed gear, variable pulley **£32**
REX DE LUXE, 5-6 h.p., Bosch spring forks, two speeds, handle starting **£28**
ADVANCE, 6 h.p., magneto, h.b.c., twin cylinder, powerful **£17**
PORTLAND, Peugeot engine, 3½ h.p., 1911 model, Bosch magneto, rubber non-skids, machine little and carefully used **£32**
BUCHET, 8 h.p., T.T. model **£14**
FAFNIR, 2¾ h.p., h.b.c. **£10**
CENTAUR, P. & M., two speeds, complete with sidecar, splendid running **£25**
HUMBER 3 h.p. h.b.c. B.B. carburetter, 26x2¼ non-skid tyres..... **£11**
LLOYDS, 2 h.p., smartly finished **£8**
DE DION, Phœnix 2-speed gear, low and racy **£10**
REX, 2 h.p., spray carburetter **£7**
HUMBER, 3 h.p., chain driven, low built, 26x2½ studded tyres **£9 10**
PEUGEOT Car, 9 h.p., two-seater, three speeds and reverse **£20**

CASH or EXCHANGE TERMS TO SUIT YOUR POCKET. WRITE US.

S. & R. Sidecar, wicker basket, nicely upholstered **£5 5**
S. & R. with wheel supported at both sides **£6 6**
S. & R. with white cane basket **£7 7**
S. & R. with torpedo enclosed body **£3 8**
S. & R. with coach-built body **£11 10**

Write for a sidecar catalogue which tells you the latest improvements in sidecars.



Footrests, post paid **2/10**

MISCELLANEOUS.

Second-hand coach built £9 9s. Sidecar **£5**
Second-hand £8 8s. Coronet Sidecar **£4**
New Motor Head Lamps, with separate generators. Special line **9/6**
Post Horns, Lucas pattern, very loud and musical **12/6**
New Fuller Midget Coil **7/3**
Long Handle-bars **4 9**
Tubular Carriers ..... each **4/-**

SCOTT'S,

Victoria Motor House,
POWELL STREET, HALIFAX.

Telephone—433 National.
Telegrams—"SCOTT, Powell Street, Halifax."

MOTOR BICYCLES FOR SALE.

HITCHINGS, Ltd., for Triumph and Matchless Motors; any make supplied on most favourable terms; exchanges arranged; absolute satisfaction and courteous service assured by dealing with Hitchings, Ltd., 74, Bold St., Liverpool. Established over 30 years.

PREMIER 1912 Motor Cycles.—In stock for immediate delivery, 2¾h.p. lightweight, standard model, £36; 3½h.p. standard model, last of 1911 contract, new, reduced price £39, genuine bargain; 2¾h.p. lightweight, 3-speed, free engine, £46.—Official agents, Robinson and Price, 39, Whitechapel, Liverpool.

ROYAL Enfield Lightweight, 2 speeds, free engine, late 1911 model, brand new £40; Rudge, clutch model, late 1911, just been thoroughly overhauled by makers. Lucas £3 lamp set, new tin. Dunlop belt, Brooks carrier bag, spares, complete with Millford sidecar and Wolbrown body, £55; Triumphs, New Hudsons, Rudges, Enfields, in stock. — Wardman, Princes St., Harrogate.

GREAT Sale of motor cycles.—3½h.p. Rex, £7/10; 4h.p. Chater-Lea, magneto, spring forks, B. and B., £12; 3h.p. Triumph, £9, 1909 Douglas, £18/10; 1911 Kerry-Abingdon, £28; 5-6h.p. Rex, 1909, twin-cyl., free engine, and sidecar, £25, worth £40, 1908 Triumph, new condition, £25; P and M., nearly new, 2-speed, free engine, £37/10; we have about 60 second-hand motor bikes in stock, consisting of 1907, 1908, 1909, 1910 Triumphs, prices from £15; several Bradburys, Singers, Moto-Reves; all machines sold are warranted in good order; sidecars from 50/-.—The Motor Cycle Exchange, 160, Young St., Sheffield.

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

BRADBURY, 1912, 2-speed models; £55.—Hughes, Garage, Ellesmere.

TRIUMPHS, 1912, free engine models; £55; above makes in stock.—Hughes, Garage, Ellesmere.

TRIUMPH, 1910, clutch, all accessories, perfect; what offers?—Surveyor of Taxes, Oswestry.

T.T. Rudge, late 1911, lamp, Cowey, etc., very fast, perfect; £38.—S. H. Clarke, Etwall, Derby.

1910 3½h.p. Standard Triumph, splendid condition; £30.—Evans, Lower Bar, Newport, Salop.

TRIUMPH, 2¾h.p., accumulator ignition, good order; £10.—Ireland, Willow St., Ellesmere, Salop.

2h.p. Minerva, £6; 2¾h.p. Clyde, magneto, £7/10; good order both.—Washington, Middlewich.

TRIUMPH, 1911, 3½h.p., only ridden a few weeks, equal to new, Dunlops, very fast; £39.—Below.

TRIUMPH, 1911, 3½h.p., fitted with Mahon free engine; genuine bargain, £38/10.—Below.

TRIUMPH, 1910, 3½h.p., new Kempshalls, Whittle belt, reliable machine; £28/10.—Below.

DOUGLAS, 1911, now being thoroughly overhauled; special offer, £30.—Below.

TRIUMPH, 1910, 3½h.p., ready for the road; offers wanted.—Below.

SEVERAL Second-hand Machines from £5.

NEW Triumphs, Humbers, Levis, Rudge, Douglas, Moto-Reve, New Hudson actually in stock. — Shukers, Garage, Shrewsbury.

1911 Triumph, T.T. roadster, as new, spares, new Dunlop tyre; £40.—Fowke, Cramer St., Stafford.

1912 4h.p. Indian, new, in crate, will take second-hand Sunbeam part.—Fox, Lichfield Golf Club, Staffs.

MATCHLESS-J.A.P., 6h.p., 1910 model, automatic lubrication, Dunlop 2½ tyres, good order; £33.—Moss, Wem.

1912 B.S.A. Motor Cycles, free engine model, £56/10; immediate delivery.—The Triplex Motor Co., Wrexham.

FAFNIR, 3h.p., accumulato., h.b.c., B. and B., good condition, low; £12/10.—Nevols, Longdon, Wellington, Salop.

£7/10.—2¾h.p. I.T. magneto Clyde, good condition, running order; bargain, first money order.—Trevethan, Rhyl.

SCOTT, late 1911 model, new August, very little used, tyres scarcely marked, splendid condition; £49.—Moss, Wem.

3½h.p. N.S.U., magneto, good condition, lamp, spare belt and new tube; £18.—Ernest Wells, Congleton Rd., Biddulph, Staffs.

MOTOSACOCHE, 1911, 2¾h.p., splendid condition, just overhauled, spring seat-pillar, footrests; what offers.—Blenco, Gorphwysfa, Conway.

MOTOSACOCHE, 1¾h.p., 1908, h.b.c., Druids, good condition, including tyres; £14/10, or nearest.—Holroyd, 1, Eddisbury Rd., Liscard.

TRIUMPH, 3½h.p., 1910, thorough order, horn, lamp, £34, bargain; leaving country, only reason sale.—Lion Works, Navigation St., Walsall.

2¾h.p. Zedel, accumulator, as new, in splendid condition, tyres little used; £10; trial run.—Jordan, Bank Side, Whalley Bridge, Cheshire.

Collier's Motories,

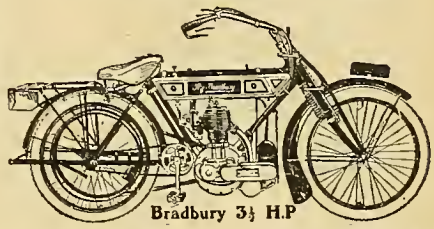
Westgate, Halifax,

ENGLAND.

1912 BRADBURYS IN STOCK.

IDEAL SIDECAR MACHINES.

3½ h.p. Tourist Models £48
3½ h.p. 2-speed BRADBURY £55



Bradbury 3½ H.P

Exchanges Quoted **Distance no objection.**

SECOND-HAND MACHINES.

—CASH, EXCHANGE, OR EASY PAYMENTS.—

8 h.p. Twin **J.A.P.,** side valves, Chater-Lea frame, Rud 2 speeds and sidecar **£43 10**
1911 3 h.p **FAFNIR,** h.p. control **£22 10**
1911 Twin 2-speed **REX DE LUXE** **£47 10**
5 h.p 2-speed free engine **ROC** **£35 0**
1910 7 h.p Twin **REX,** M.O.V. **£37 10**
3½ h.p **FAFNIR,** Bosch, h.b.c., Indian red, Druids **£19 10**
Magneto **TRIUMPH,** spring forks, very smart .. **£25 10**
Magneto Twin **REX** **£19 19**
REX, 1910, 3½ h.p., 26 x 2½ tyres, Cantilever seat **£27 10**
4½ h.p. 4-cylinder **F.N.,** magneto **£19 19**
2¾ h.p. **KERRY,** runs well, spring forks **£10 10**
1910 3½ h.p T.T. **REX,** very fast **£27 10**
3½ h.p **TRIUMPH,** 1908, very good **£28 10**
2¾ h.p. **DE DION,** spray carburetter **£10 10**
3½ h.p. 2-speed **N.S.U.,** h.b. control **£21 0**
3 h.p. **HUMBER,** chain drive **£7 10**
1909 3½ h.p **REX DE LUXE,** 2 speeds **£32 10**
1908 3½ h.p Magneto **REX,** spring forks **£22 10**
1907 3½ h.p Magneto **REX,** spring forks **£19 19**
3½ h.p Tourist **REX,** brand new **£29 10**
1910 Twin **REX DE LUXE,** 2 speeds **£42 10**
New Twin **REX,** Cantilever seat ..... **35 Gns**
Twin **REX DE LUXE** and sidecar **£27 10**
3½ h.p Magneto **REX,** new and unused **£31 0**
3½ h.p Magneto **EXCELSIOR,** h.b. control **£16 10**
MOTO-REVE, magneto, Druids **£19 19**
MOTOSACOCHE Lightweight **£14 10**
F.N. Lightweight, magneto, spring forks **£19 19**
REX, 3½ h.p., spring forks **£15 10**
1911 3½ h.p Tourist **REX** **£32 10**
1911 Single-cylinder 2-speed **REX,** 200 miles **£42 10**
5½ h.p Twin **REX,** spring forks **£16 10**
5½ h.p. Magneto Twin **REX** **£19 10**
2¾ h.p. **F.N.,** h.b. control, very smart **£12 19**

A CALL WILL REPAY YOU.

£10 to £15 cash discount from these new machines.

Brand New 1911 3½ h.p. Tourist **REX** ..... **43 Gns**
" " 1911 2¾ h.p. Two-speed **REX** Junior.. **50 Gns**
" " 1911 3½ h.p. Free-engine **REX** ..... **48 Gns**
" " 1911 3½ h.p. **REX DE LUXE** ..... **57 Gns**
" " 1911 5 h.p. **REX DE LUXE** ..... **60 Gns**

All guaranteed by makers

£4 DOWN and 5/- weekly secures prompt despatch of any of these machines.

3½ h.p. **FAFNIR,** 26in. wheels, h.b. control **£13 10**
3 h.p. **QUADRANT,** V belt h.b. control, sp. forks **£12 10**
2¾ h.p **F.N.,** newly enamelled and plated **£12 10**
Lightweight **MOTOSACOCHE,** spray, runs well .. **£14 10**
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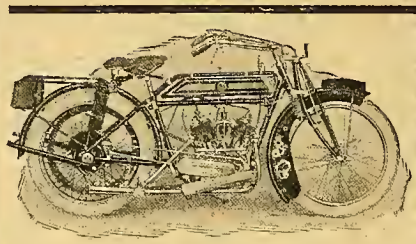
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REX JAP



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DOUGLAS, 1911 Model E., 2-speed, F.E., handle starting, footboards, ridden 2,000 miles; £37/10.—Plastow, Grimsby.

TRIUMPHS, in stock.—T.T. roadster, £50; free engine, £55.—At Woodgate's, Small Heath.

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LADY'S Motosacoche (1910), magneto, free engine, excellent condition; £22.—Nell, Merrie, Athol Villa, Bourne.

1912 Triumphs in stock, Douglas, B.S.A., Bradbury, Rudge, Zenith; offers.—Clifford, Eastwood, Notts Exchanges.

1912 Bradbury, Rudge, B.S.A., Alldays, New Hudson, 2¾h.p. and 3½h.p. 3-speeds in stock.—Blackburn, Spalding.

1912 Triumph and New Hudson, 3-speed, clutch, and standard, in stock.—Mason, Triumph agent, Wellingborough.

1911 Humber Lightweight, very little ridden, splendid condition; accept £25.—Kerby, 14, Little Park St., Coventry.

TRIUMPH, 1908, new tyres and tubes, recently overhauled, all accessories; £28/10.—Apply, Hatwell, Ratcliffe, Atherstone.

KERRY-ABINGDON, 1911, free engine; £39, or nearest; any trial; buying 1912.—134, Anderton Park Rd., Moseley.

1911 7h.p. Indian, free engine, racing and touring handle-bars, new tyre on back, perfect condition; cash offers. Also

5h.p. Twin Peugeot and Sidecar, just overhauled and enamelled; £31.—Apply, F. Miles, 42, Spon St., Coventry.

ZENITH, 3½h.p.; doctor forbids riding; not yet ridden; £55/13.—Address, No. 75, *The Motor Cycle* Offices, Coventry.

THE MOTOR CYCLE

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A Mobilisation Scheme.

TWO thousand motor cyclists mobilised in one Midland town! That is what we may expect to see in the near future, if the scheme proposed by the writer of the military notes in this issue become an accomplished fact. It is suggested that riders from all parts of the kingdom should show our military authorities what can be done by motor cyclists in the way of rapid mobilisation. The Legion of Cyclists, a body already in existence and with offices in Piccadilly, W., will on a certain Friday night send postcards to all motor cyclists who are willing to help and have previously registered their names and addresses with the secretary of the Legion, calling on them to report themselves to the officer commanding at a conveniently situated Midland town. These postcards will be sent to reach the riders by the first post on Saturday. Prizes will be awarded to those who have, in the opinion of the officers in charge, accomplished the best record. The time of starting must be verified, and we presume, in awarding the prizes, the distance travelled and the difficulties overcome, such as traffic and hills, will be taken into account. Other points that will require the attention of the umpires are the power and size of the engine, and whether a roadster, T.T., or racing machine be used. The only impedimenta the motor cyclist will be required to carry are an overcoat or blanket, food for twenty-four hours, and a change of underclothing. This scheme strikes us as a particularly good method of proving to those concerned what would be possible in the event of an invasion, and the plan will doubtless work admirably. But we wish to urge strongly upon riders the desirability of proceeding at a strictly moderate pace in towns, villages, and, in fact, in any place where high speed is likely to cause danger or inconvenience to others, or to bring them into conflict with the civil authorities.

From another source we learn that the War Office have no intention of founding a motor cyclists' corps as part of the regular army; and the machines they have ordered are merely to be used by subalterns in connection with assisting the Army Service Corps in the transport of impedimenta used by an army on the march. The motor cycle mounted subalterns act as guides, etc., to the mechanically propelled lorries. The War Office evidently do not look seriously on the motor cycle as a fighting or scouting mount, although there are leading lights in the military world who are most anxious to make use of its services. It is, therefore, the duty of motor cyclists who have leanings towards military work to enrol themselves members of the new Legion, and show by united action what they are capable of in the direction of rapid concentration on one particular spot, even at a considerable distance from home.

We have only two suggestions to offer to those who are desirous of enrolling motor cyclists in this Legion: they are to ask applicants to state the date, horse-power, and make of their motor cycles—it would be detrimental to the object in view to enrol riders possessing antiquated or unreliable machines—and to consider the question of providing all motor cyclist members of the Legion who intend to take part in the ride with a distinctive armlet so that they may be allowed a certain amount of leniency in regard to speed for this special occasion, should they happen to come under the eye of the police.

COMPRESSION RATIO.

WHAT IT IS AND HOW TO CALCULATE IT.

IF there is one thing that the average motor cyclist, practical and fond of acquiring first hand knowledge though he be, is thoroughly hazy about, it is the compression ratio of his engine. If you were to ask him off-hand what this quantity was, it is a thousand to one that he would give you a figure far wide of the mark if he gave you an answer at all. The fact of the matter is that the average motor cyclist regards compression as an exceedingly useful and valuable commodity with which he prefers to get acquainted only sufficiently to know it by a sense of touch on an engine belt pulley. He doesn't know by any means how much resistance his wrist ought to meet with in trying to urge, through the crankshaft, the piston over its compression stroke. If he has a twin engine he can tell you, without any sort of doubt at all, which cylinder has the better compression, because in relative matters such as this the sense of touch is a tolerably good guide, but if, after you had watched him testing the compression in the usual way, you asked him what it was in pounds to the square inch, he would be undoubtedly puzzled. Inasmuch as the compression ratio of most motor cycles is about the same, nearly every motor cyclist can without difficulty carry about with him a mental idea of what standard compression should be.

The Advantage of Knowing the Compression.

Now, one of the joys which only the keen motor cyclist relishes is that which pertains to the art of "tuning up." Everyone who takes an intelligent interest in his engine likes to know the conditions under which it is working, and furthermore likes to improve these conditions and so get better results if he can possibly do so. The question of the compression ratio is an important factor in the horse-power output of an engine and hence it is logical to suppose that it will receive its share of attention, along with valve setting, ignition, and carburetter, at the hands of the "tuner up."

He has been rather erroneously led to believe that high compression means high power, and probably an increase of revolutions. As a result he will set about getting deeper valve caps or possibly going to the length of having a cut taken off the bottom of the cylinder or the top of the crank chamber, either of which methods serves to increase compression ratio. The "tuner up" may or may not get good results by this means, because unless he keep track of what he is doing he can have no proper idea of whether he is going far enough or has actually overshot the mark. The really successful tuner is he who takes careful note of every adjustment or modification which he thinks fit to introduce into an engine, as by this means he obtains a store of knowledge which he can apply equally well in a great number of different cases. If, however, anything has to be done in the matter of altering the compression of an engine, it is most essential that due note should be taken of this feature before any modifications are made. Unfortunately this desired knowledge of compression ratio is a thing which takes a little trouble to find. By compression ratio is meant the volumetric capacity of the cylinder and cylinder head when the piston is at the bottom of the stroke, divided by the same capacity when the piston is at the top of the stroke.

Calculating from a Sectional Drawing.

Where, as in the case of engines with overhead valves, there is a symmetrical arrangement of the cylinder head a fairly good idea of the compression ratio can be obtained by a simple calculation from a section of the engine, because if the actual head of the cylinder be practically flat the compression ratio will then become the distance between this head and the piston at the bottom of its stroke, divided by the distance between the head and the piston at the top of the stroke. It is only with an engine of this type that a paper calculation is likely to be worth while, but in any case it opens up so many opportunities for small errors to creep in that it will hardly apply to the man who likes to work to a place or two of decimals. The drawing from which one makes calculations may, for instance, be not exactly to scale, and also it may not be a dead accurate representation of the engine undergoing the tuning process, hence from every point of view a direct and absolute determination of the compression ratio is to be preferred.

In the case of the average engine which has side-by-side valves, and so cannot have a symmetrical cylinder head, calculation of the compression ratio is almost out of the question, as it involves a series of very tedious processes in which the factor of error is likely to prove a high one. Calculation is not by any means impossible, but it is certainly not expedient. However careful be a pattern-maker, and however accurate and careful be a foundry-hand, the actual cylinder will differ to a sensible degree from the section shown on the works blue-print, and if it is not going to be machined all over with considerable nicety, unknown quantities are going to be introduced which may upset the truth of the calculation very greatly. On the other hand, if measurements are to be taken from the engine itself they will take as long and give as much trouble as carrying out a mechanical process which will give a perfectly accurate and absolute result.

Compression Ratio.—

There are three principal ways of obtaining the figure of compression ratio. They are, all of them, simple and capable of giving good results if applied intelligently.

The Shot Method.

The first, which is the cleanest and best, is known as the "Shot" method, and the *modus operandi* is as follows:

First, obtain a few pounds of fine lead shot. This may be obtained at an almost negligible price from electricians, who use it for filling the counterpoise of electroliers. Obtain a short piece of ordinary steel cycle tubing about three or four inches long. The gauge is immaterial, but it is important that the ends of this should be cut off as square as possible. Measure the internal diameter and the length of this tube as exactly as possible. For the sake of illustration, we will suppose that it measures $1\frac{1}{8}$in. × 3in. respectively. This piece of tube must now be put on a pair of scales, the more accurate the better, and carefully counterpoised by a certain amount of shot in the weight-pan of the balance. The tube must now itself be filled with shot, which can easily be done if it is stood on end. If the balance be now equalised, the weights which have been added to the pan will give the exact weight of the shot inside the tube. By this means one obtains the exact weight of shot per cubic inch. We will suppose the tubeful of shot weighs $1\frac{1}{4}$ lbs. The cubic capacity of the tube will then be as follows:

$$\text{Length} \times \text{radius squared} \times \frac{22}{7} \quad (\pi = 3.142)$$

That is to say, 2.98 cubic inches of shot weigh $1\frac{1}{4}$ lbs.

Therefore a cubic inch of shot weighs .419 lb.

Now weigh out five or six pounds of shot and use these for a store from which to draw for the operation about to be described.

By means of a spoke passed through the compression tap, ascertain the point at which the piston is at the extreme top of its stroke, and in order to maintain it in this position drive a wooden wedge between the edge of the belt pulley and the crank chamber. Make sure that the piston is at the top of the *compression* stroke so that both valves are closed.

Remove the compression tap, taking note how far its stem extends down the internal thread cut in the cylinder head. This is easily discernible by the small carbon deposit which is always to be found on that part of the internal thread in the cylinder head which is unused. Leave the sparking plug *in situ* and also the valve caps. By means of a small tun-dish, which may be made out of a sheet of stiff notepaper, fill shot into the cylinder as long as it will take any, and when it is full, stir the shot round as much as possible with a spoke so as to ensure the pellets running into the valve chamber and entirely filling it up.

Rule of Three.

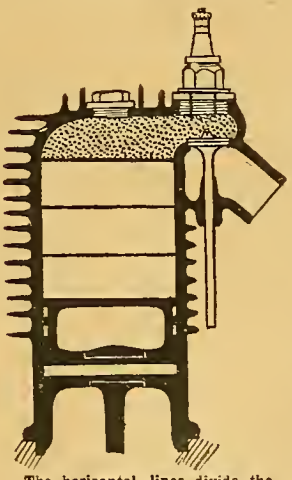
To ensure that they do this a smart tap or two may be given on the outside of the valve chests with a piece of wood, the effect of which is to shake the shot sideways. If there is any doubt about this matter, remove the plug and see whether the shot have gone where they ought to, afterwards replacing it. In filling up the cylinder with shot in this way, care must be taken not to spill any, as the weight of the shot so filled into the cylinder is ascertained by weighing what is left of the store originally weighed out. On re-weighing this store, it is found, let us say, that 2 lbs. 6 ozs. have been filled into the cylinder. From this, by means of a simple proportional sum, is calculated the cubic capacity of the clearance volume above the piston, which from the foregoing data is 5.66 cubic inches. The compression ratio is now given by the following fraction:

$$\frac{\text{Cubic capacity of cylinder in inches} + 5.66}{5.66}$$

The cylinder capacity in cubic inches is easily measured, as there are 16.38 cubic centimetres in a cubic inch, and particulars of the cubic capacity in centimetres is given of nearly all engines, but if not given can easily be calculated from the bore and stroke. Assuming the engine to be one of 500 c.c., then the cubic capacity is equal to 30.5 cubic inches and the fraction is, therefore,

$$\frac{30.5 + 5.66}{5.66} = 6.39.$$

The compression ratio is, therefore, 6.39, from which the compression in pounds to the square inch can be found by multiplying this figure by 14.7.



The horizontal lines divide the cylinder, with piston at bottom of stroke, into four equal volumes. Hence the compression ratio (the space being indicated by dotted shading) is 4 to 1.

When the above operations have been carried out the cylinder is removed and the shot poured away, the only thing in this connection necessary to observe being the placing of a clean rag on the top of the crank chamber to prevent any shot falling inside.

The great advantage of the shot method of ascertaining compression ratio is that, in addition to its exactness (which, of course, depends upon the accuracy of the weighing), it is perfectly clean, and can be carried out successfully with an engine of which the piston is an exceedingly slack one. As a matter of fact, if the piston be tight, fairly thick oil can be used instead of shot, but it is rather a messy business, and owing to the large amount which adheres to the cylinder walls not likely to be very accurate.

Second Shot Method.

The method described above is not applicable to all engines. In the case of the Indian, for instance, it might be rather hard to work, or, in fact, with almost any engine which has a detachable head and valves above one another. In this case, another method, which in some ways simpler, can be used. After having ascertained the weight of a cubic inch of shot, the cylinder head is removed and is filled so that the top of the shot is flush with the washer against which comes the edge of the cylinder liner itself, and from this is calculated the cubic contents

Compression Ratio.—

of the cylinder head alone. Bore and stroke being known, the volume swept out by the piston can also be easily calculated. The only thing left to do is to ascertain by how much the piston at the top of its stroke is separated from the washer or ground joint on the detachable head. If an engine has been run for some little time this distance is always accurately recorded by the carbon deposit, which can be easily measured.

Let us suppose that the cylinder is, as before, of 500 c.c., or 30.5 cubic inches capacity, and that the head by itself has a cubic capacity of 2.8 cubic inches. The depth of the carbon deposit is, let us suppose, 7 mm., whilst the bore of the cylinder is 85 mm. From the last two figures can be calculated the volume enclosed by the clearance between the piston and the cylinder head, which in this particular case is 39.73 cubic centimetres, which is equal to 2.42 cubic inches. The compression is, therefore, represented by the following fraction:

$$\frac{30.5 + 2.8 + 2.42}{2.8 + 2.42} = 6.84 \text{ compression ratio,}$$

that is to say, compression pressure 100.5 lbs. to the square inch.

Needless to say, both the above cases are fictitious, as such high compression ratios are not found on ordinary engines.

Third Method by Means of a Pressure Gauge.

This is the least accurate of the three methods which are given, but has a great advantage, that it does not require the engine to be taken down, although, as a matter of fact, on very few modern machines is this much trouble. The pressure gauge requires to be a sensitive one, designed to read up to 90 lbs. The wider apart are the limits marked on its dial the greater the ease whereby its indications can be read accurately. The gauge must be furnished with an adapter screwed so as to fit the sparking plug thread into which it should be screwed as nearly as possible exactly the same depth as the sparking plug itself. Two difficulties now present themselves. Firstly, that the compression must be read whilst the engine is being turned over fairly briskly, and also that such compression will only be registered momentarily. Both of these difficulties can be overcome by a very simple little device.

Stick on to the dial a semi-circular strip of paper. This can be done with a few spots of wax without harming the dial at all. This piece of paper must first be thoroughly smoke-blacked by holding it over a little burning turpentine. Next attach to the hand of the pressure gauge by means of sealing wax a short length of very thin wire, the end of which lies immediately under the hand, and presses lightly against the blacked paper. When the gauge is screwed into position on the engine the latter may be pedalled or otherwise turned round any number of revolutions at any rate of speed, the small recording device always showing the highest pressure achieved. The throttle should be left open for this test.

For the sake of example, assume that the pressure thus shown is 71 lbs., then the compression ratio is given by the fraction, $71 \div 14.7 = 4.8$.

In the above descriptions we have not dealt with the value of compression in regard to the efficiency of an engine, but this point we hope to discuss in a subsequent article. W.G.A.

The Motor Cycle in the Mail Service.

MORE than a year ago, the Postmaster of Oakham, Mr. G. H. Geeson, invited tenders for a motor mail service between Oakham and Wymondham. A local tender proposing to run the service with a 3½ h.p. Triumph motor cycle, in combination with a Mills-Fulford commercial sidecar, secured the contract, and the service was commenced on February 19th, 1911.

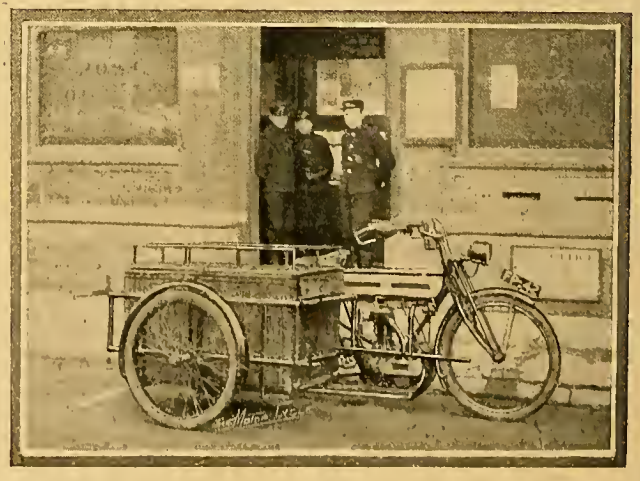
The distance between Oakham and Wymondham is eight miles, and this has to be covered twice daily during the week, and once on Sunday, making a mileage of 208 miles per week.

This motor cycle mail service leaves the Post Office, Oakham, every morning at 6.15, and deposits mails at the intermediate villages of Ashwell, Teigh, and Edmondthorpe, reaching Wymondham at 6.55 a.m. At 11.15 a.m. it leaves this town, picking up again on its return journey, and in addition, clearing pillar boxes *en route*. This quick service is again repeated later in the day.

During the whole time the Triumph outfit has been running—its yearly mileage being over 10,000 miles—it has given every satisfaction to the postal authorities. The engine has never failed, no trouble whatever has been experienced with the constructional details, and there has been no difficulty in maintaining an accurate time table.

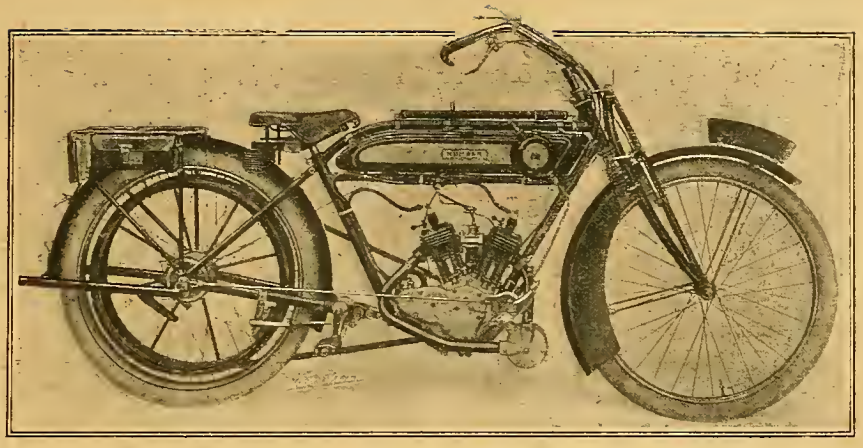
It is rather interesting to note that this motor cycle, prior to being employed in the mail service, was ridden solo for 10,000 miles.

So successful has been this initial experiment that the Postmaster is authorising the use of another of these mails to commence early in April, and it is on the *tapis* that another route will be served by the same means.



A Triumph and sidecar which regularly carries the mails in the neighbourhood of Oakham.

The Small Twin and its Attractions.



2¾ h.p. twin-cylinder Humber, with Armstrong three-speed gear and clutch.

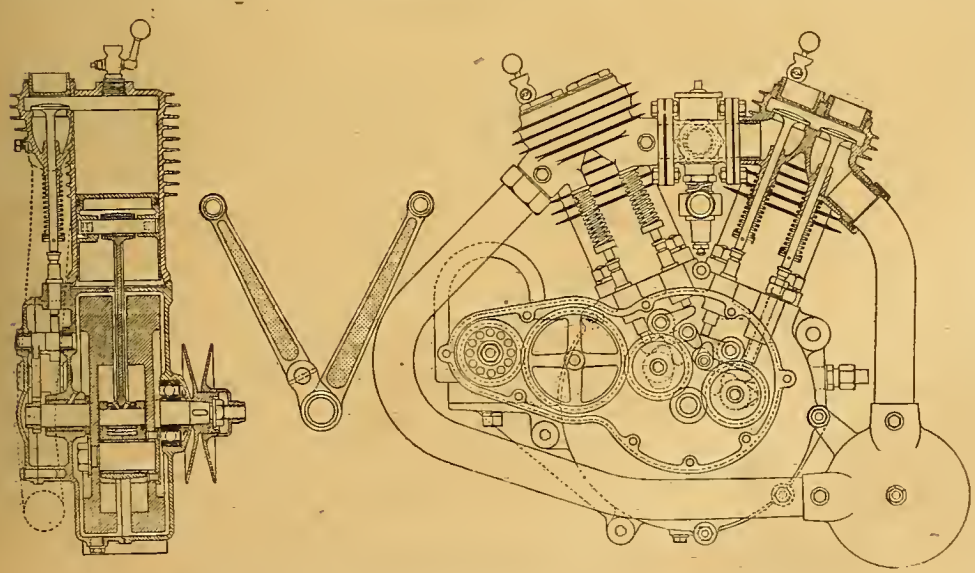
TO those riders of 3½ h.p. single-cylinder mounts who have come to regard their machines as uninteresting, go anywhere motor cycles, shorn of all interest and excitement by reason of their unfailing reliability, and who sigh for something more interesting and more fascinating to ride, we would say try a 2¾ h.p. twin Humber. We have undergone such an experience, and we have been converted. The writer has for years been a staunch supporter of the 3½ h.p. ultra-efficient single-cylinder, but gradually a feeling has crept over him that, after all, the 3½ h.p. single has become an uninteresting machine to ride. Years ago we were not certain of ever reaching home to time, but latterly we have been able to keep our appointments by motor cycle with the certainty of a railway train, and there is little to vary the monotony of the continual "pop, pop, pop" of the engine.

But there are new delights in store for those who would sample a miniature twin such as the Humber. Instead of the plugging of the one lunger, a smooth even purr is all one hears as the machine flies along, bounding over pot holes with a surprising absence of jolting, due to the well-balanced engine and comfortable riding position.

An All-weather Mount.

It is a most handy little machine in every way, and with a three-speed gear, just such a mount as would appeal to the all-weather rider, seeing that it is as stable in grease as a push cycle, and on the low gear will wind its way up the steepest and roughest hill. Starting is simplicity itself. One may either sit on the saddle and, with the low gear engaged and the valve lifter raised, hobble de horse the machine for a couple of yards, when away the engine will go, or alternately walk comfortably alongside, place one foot on the rest, and at the same time drop the valve, and instantly the engine responds. It will thus be gathered that no acrobatic or gymnastic feats are necessary in starting a little Humber, which, in its management, is simplicity itself. By judicious use of the Armstrong three-speed gear rapid acceleration is possible. A fact which will cause no surprise is that the back lash one notices on the top ratio of this gear with a single-cylinder engine is not nearly so pronounced in the case of a twin, owing to the more constant torque.

The speed of this lilliputian twin with its 60 × 60 mm. cylinders is amazing. It is not long ago that motor cyclists of the sporting type regarded 2¾ h.p. lightweights as a sort of potterer's mount, but now the conditions have changed, and instead of the bare 40 m.p.h. which was the order of the day a year or two ago, one can hit up 50 m.p.h. on the road as a usual thing under favourable conditions. This fact no doubt explains why such well-known riders as Harry and Audrey Bashall, Alan Woodman, E. M. Oliver, Sam Wright, and A. G. Fenn have been won over by the little Humber.



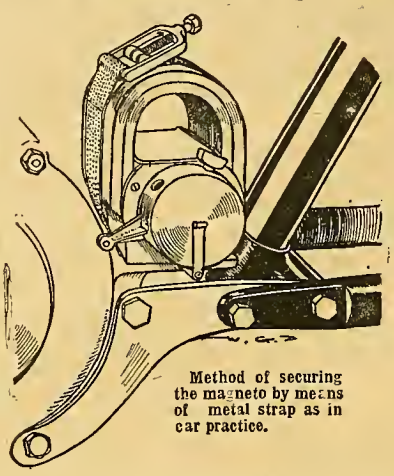
End view and side elevation of the 1912 pattern 2¾ h.p. twin-cylinder Humber engine.

Some Features of Design.

For sheer originality in design there has been no machine evolved to equal the Humber with the possible exception of the two-stroke Scott.

The Small Twin and its Attractions.—

One can picture the confidence of the designer who sets out to produce a V-type twin-cylinder engine with offset cylinders, compound connecting rods, flat-faced valves, single step-cut rings to each piston, and other original features of minor importance. Its object was to win the Junior T.T., and it is now known the world over that it was successful, averaging with P. J. Evans in the saddle, 41½ miles per hour; surely never had a newly designed motor cycle such a splendid send off. Since then, of course, Sam Wright has established a new hour record with 58 miles 1,408 yards, and the feat still causes much wonderment in motor cycle circles.



Method of securing the magneto by means of metal strap as in car practice.

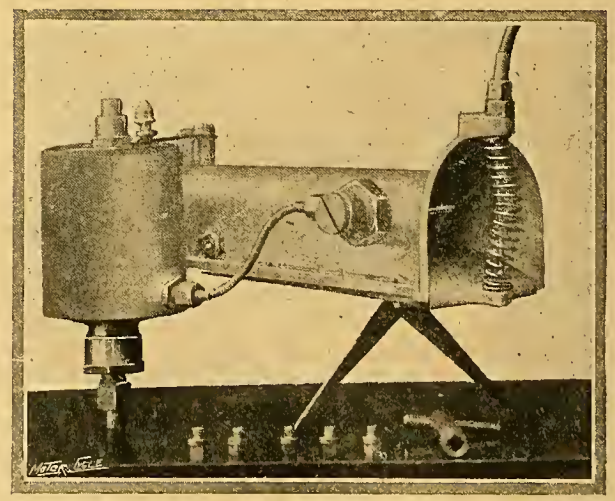
We reproduce a drawing of the Humber twin engine. Each flywheel and spindle are formed of one solid steel stamping. Both cylinders are identical in design, and therefore interchangeable one with the other. The plugs are placed in the cylinder crown, and are fired by an Eisemann magneto secured by a metal strap as in car practice to a bracket formed at the rear of the crank case. All valves are mechanically operated, each cylinder having its own separate cams and valve tappet levers. The exhaust valve lifters are inside the timing cover, and are operated by cams, one valve being arranged to open in advance of the other.

The three-speeder weighs in the neighbourhood of 150 lbs.—which is designated "lightweight"—but the extreme mobility of the machine would not lead one to suppose that it exceeded one hundredweight.

Altogether we are looking forward with great interest to mastering the whims and idiosyncrasies of our little stranger which has won such good opinions during its short sojourn. Only one point has drawn forth criticism—we refer to the somewhat inaccessible position of the carburetter sandwiched in between the cylinders. We have reason to believe that this small point will soon receive attention, as Humber, Ltd., are not the firm to allow such trifles to mar their progress.

A RACING CARBURETTER.

WE reproduce on this page an illustration of the latest Binks carburetter, designed expressly and solely for racing purposes and hill-climbs. This instrument has no throttle, so the machine must be ridden to the venue with an ordinary carburetter. The control is effected entirely by means of the tongue, or shutter, which for starting purposes is brought up to the horizontal jet. This gives a rich mixture. When under weigh the tongue is dropped and the air fully opened, and full speed is attained in a very few yards. All the air rushes past the jet, which has six holes in it, through the venturi tube, and straight through to the engine without meeting any obstruction. In this way it is claimed that full power can be got out of the engine, and we are informed that a speed of 71 m.p.h. has been attained by a T.T. machine fitted with this carburetter on a private stretch of road. The novel design of this carburetter should ensure the engine getting as large a charge as it can possibly take, of course excepting methods of forced induction and the compression of the charge before it enters the cylinder.



New design Binks racing carburetter.

THE USE OF THE CLUTCH.

Now that free engine clutches are becoming almost universal on motor cycles, the following few words of advice on their use should be read and inwardly digested. Clutches are like servants—treat them as you would a good one and they will serve you well. Ill-use them and they will rebel.

Do not make use of the clutch unnecessarily, and do not demonstrate for the benefit of others (unless you are in the business) what it is possible to do with the aid of a clutch in the way of restarting on very steep hills. When starting, make use of the clutch by all means, but do not expect it to perform miracles, *i.e.*, instead of expecting it to do all the work of starting the dead load, slightly pushing off with one foot while letting in the clutch will ensure a longer life for the clutch and enable a much easier start.

The careful expert rider by considerate use of the clutch will probably go through a season's riding without the slightest necessity for clutch adjustment, whereas he who ill-uses the device will merely add items to his repair account.

The largest and strongest clutches used on motor cars have to be handled with consideration, otherwise the leathers or clutch plates will be damaged.

Occasional Comments

by "Ixion"



A Cute Sidecar Tip.

Last week a well-known Triumph rider showed me a positively inspired tip for sidecar users. He obtains a couple of spare union nuts, which he screws over the open ends of the socket pins of the cycle clips whenever the sidecar is detached. These nuts keep the threads on the pins clean, and considerably facilitate the attachment of the sidecar when it is required. In the case of clips which have a hollow socket for the end of the sidecar tube to enter, as well as a screw thread, it is advisable to make a cap for the central hole in the union nut, either by slipping a penny under it, or soldering a thin disc of metal over it. The butt of the tube will then find clean entrance.

Three or Four Wheels.

"Cyclecar" (forgive the horrid word) users should allow their tyre fads to decide whether they will use a three or four-wheeled pattern. There are some riders (how I envy them!) who by some skilful knack slide the stiffest and newest 3in. cover out of the rim with a couple of prods from a penknife or tooth pick, whose patches never curl and always stick, who spot the tiniest puncture at sight, and mend the biggest gash in three minutes. Men of such genius will obviously choose three wheels. They may only require to take the wheel out once or twice in a season, for only a bad burst at high speed can wreck a tube. (N.B.—My experience of butt-enders on big three-wheelers has been the reverse of gratifying.)

Personally I am not to be trusted with the repair of the rear tyres on these three-wheelers. It takes me a long time to get a 3in. cover clear of the rim; I get very hot and perspiring and muddy in the process. I not infrequently chew my tube up in the sprocket when I turn the wheel round, and my patches have a loathsome habit of curling off as soon as the tyre gets warm again; if they don't I leave my pipe or my eye-glasses or a tyre-lever inside the cover, and generally do everything I ought not to do. If anyone knows how to avoid profanity on such occasions, I should be grateful for the tip.

There are plenty of worse duffers about, and for men of this kidney the four-wheeler, preferably with detachable wheels, is the only safe cure. Tyre troubles are few and far between with a good—ugh!—"cyclecar," provided it be carefully driven and have heavy enough tyres; but the sportsman who presses such a machine with under-tyred wheels to its maximum of 40 or 50 m.p.h. on a hot day in summer will seldom escape three tyre stops per run; and hence the tyre question is vital, where speed is a desideratum.

The Carriage of Spare Belts.

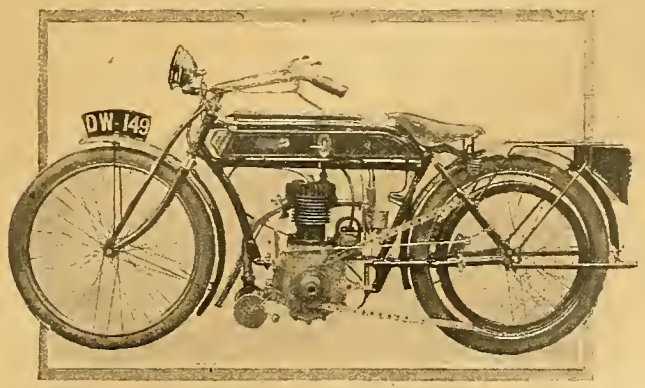
Year by year I wait eagerly for some shrewd maker to solve the problem of carrying spare belts. On a summer tour in easy country, the belt may, of course, be packed flat on the carrier, and the use of a leather case is an aid to beauty as well as keeping the belt clean. But when a rider leaves home for a month's trip, solo or with a sidecar, during which he intends to visit some stiff country, and expects a certain period of rain, the matter is widely different. The sidecar rider has sundry cunning receptacles such as "boots" and pockets at his disposal. The solo rider furls the two spare belts into neat rolls, and attaches them to various bare spots on his machine.

But watch these two gentry after a trying day's work among the hills in wet weather. Both men's hands are filthy, and both machines are bulging with loose belts flapping about in the wind. I always set out with the spare belts curled neatly round the tank, and sometimes protected by a sheet of American cloth wrapped neatly over them.

However, after two hours of rain among the hills there is one belt tied loosely round my waist, another sticking out of my rabbit pocket, and making me look as though I had a tumour on my hip, and a couple more untidily furled round my lamp and handle-bar.

Light for Night Repairs.

A correspondent informs me that the easiest way to get light for repairs and adjustments on the rear part of the machine at night, without unshipping the lamp, is to put the helm hard over, so that the lamp shines at right angles to the machine, and then to fix any light coloured object, such as a handkerchief or sheet of paper, at the side of the lamp as a reflector. He says that a pocket handkerchief or a newspaper is quite efficient when thus employed. I have tried this tip when I merely desired to glance at the machine, *e.g.*, to find where the rear tyre valve was when I wanted to inflate the tyre. But for a prolonged job I must admit that I prefer to unship the lamp and generator and stand them in the road, so as to perform the work in comfort. If I were in the habit of regularly covering long distances at night, I should carry one of the repair lamps sold for the purpose with a long piece of rubber piping to fit to the generator.



A locally assembled 2¾ h.p. Livingstone with Arno engine, by V. J. Ashton and Sons, of Newport, Mon. It has been built to special order with 24in. wheels, enabling a saddle position only 27in. from the ground.



THIS year is to be *the* year of the motor cycle just as next year is going to be *the* year of the aeroplane.

It is extremely difficult to define definitely the present indefinite condition of affairs in the military motor cycle world, but an impartial summary of the position could be put as follows.

On the one hand we have:

(1.) A distinguished company of generals clamouring for the assistance of motor cyclists at Army Manœuvres.

(2.) An enlightened Director of Military Organisation clamouring for motor cyclists in the event of war.

(3.) A parsimonious financial secretary at the War Office trying to conceive a plan for getting sixpen'orth of efficiency out of a halfpenny.

And on the other hand we have:

(1.) Hundreds of patriotic motor cyclists willing to serve their country provided a workable scheme be devised.

(2.) Willing organisations, which are unfortunately somewhat ignorant of military requirements, anxious to help.

Motor Cyclists' Demands.

It might be thought that with all this goodwill matters would progress swimmingly, but alas! a little knowledge is a most dangerous thing, and the mutual knowledge of the military authorities and of the motor cyclists is not by any means great, and the probable result will either be a *fiasco* or a continuation of the shilly-shally policy of the past five years.

Now, as I believe that if all motor cyclists who have military leanings banded together, it would be possible to obtain suitable recognition from the War Office, I ask all motor cyclists to club together to support themselves and one another, and to postulate the following conditions before they offer their services to any military organisation:

(1.) Official recognition.

(2.) A petrol allowance of 6s. 6d. a day when employed.

(3.) Daily pay at the rate of 2s. a day.

(4.) (*a*) Full board and lodging or (*b*) payment of hotel bill, or (*c*) a board and lodging allowance of 6s. 6d. a day.

The Legion of Cyclists.

Within the last few months a powerful association has sprung into being and is forming branches all over the kingdom with the sole object of providing cyclists and motor cyclists for the use of the military authorities in the event of an emergency. So far as motor cyclists are concerned, this emergency occurs annually, at the time of the autumn manœuvres. Already this Legion of Cyclists possesses more than one hundred branches throughout the kingdom, and hundreds of motor cyclists of a military turn of mind are already members. Membership offers the great advantage of not entailing a subscription—all that is necessary is to communicate with the local organising officer or with the honorary secretary at 117, Piccadilly, W., and to enrol oneself as a member.

Moreover, this Legion of Cyclists proposes next month to give a proof of its power, and to call upon all its motor cyclist members to rendezvous somewhere in the Midlands to give a great demonstration of mobility.

A Gigantic Mobilisation Test.

The idea is that on a certain Friday a postcard will be sent to every motor cyclist of the Legion so that it will reach him by the first post on Saturday morning. This postcard will summon him to proceed at once by road to the rendezvous, which will be some convenient Midland town.

Here they will be inspected by various distinguished officers, and a prize will be given to the motor cyclist who is considered to have achieved the best record.

All motor cyclists who are members of the Legion, or are prepared to join it, are eligible to compete under the following conditions:

1. Applicants must enclose one stamped postcard addressed to themselves on the back of which must be written—

Mobilise at the ..... at .....
as early as possible on Saturday, instant.
Hour of departure from home, ...
Witness, ...
Address, ...
.....

The last four lines will be filled in at the time when the competitor leaves home to go to the rendezvous by some independent witness, and the card will be handed to the umpires immediately on arrival at the place of mobilisation.

2. Applicants must enclose three penny postage stamps, and signify their willingness to join the Legion of Cyclists if they have not already been enrolled as members.

3. They must also enclose an envelope addressed to themselves with a halfpenny stamp affixed.

Applicants must also bring with them—(*a*) either an overcoat or a blanket; (*b*) twenty-four hours' food; (*c*) a change of underclothing, just as if they were starting on a campaign.

5. Applications should be addressed to Captain A. H. Trapmann, hon. secretary, the Legion of Cyclists, 117, Piccadilly, W.

It is anticipated that some two thousand motor cyclists will probably compete for this gigantic test of mobility, and arrangements will be made for their accommodation.

Overheard at the first open Brooklands Meeting.

"that the Indian was the most silent machine on the track."

that the belt driving competitors experienced so many troubles that they wished they had had the reliable chain drive.

BUT WHICH MACHINE WON?

Indian

as usual; Mr. A. J. Moorhouse on a 7 h.p INDIAN MAKING THE FASTEST TIME OF THE DAY, AND SETTING UP NEW RECORD FOR THE 100 MILES.





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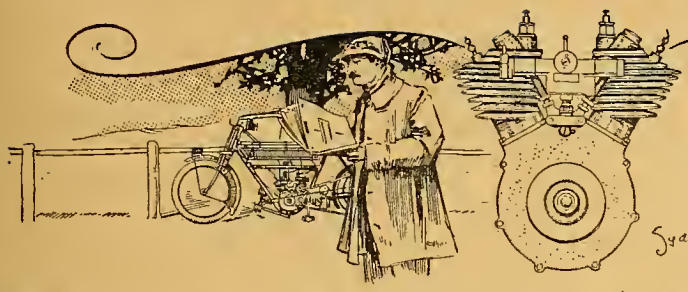
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WHY AMATEURS GET BEATEN.

By B. H. DAVIES.

ONE or two manufacturers complain that many of their amateur customers are always plaguing them for a few tips which will enable them to win in the best company, and display great annoyance because they find their chances of fastest time in an open hill-climb, when riding their standard touring mounts, are so extremely small. I propose to show why it is difficult for an amateur rider with a fully equipped touring motor cycle to compete successfully against the crack riders of the day, who are usually mounted on special machines.

The Superlative Engine.

The first reason is one of the curiosities of motor engineering. A firm standardise an engine, and put a batch of, say, 500 through their factory. They employ materials of even quality, so far as is possible; every single part is tested by gauges and jigs, and to all human appearance every engine in the 500 is the "dead spit" of all the rest. Yet, despite all precautions, some dozen engines in the batch will be distinctly superior to the other 488; and probably one particular engine will stand out head and shoulders above the pick of the eleven super-excellents.

In the course of use this engine may need renewals, a new cylinder or piston; and such modification will often rob it of that fractional superiority. No matter how carefully it may be repaired, how skilfully it is afterwards re-tuned, it may remain for ever afterwards a perfectly ordinary engine.

Such experiences are commonplaces in the secret history of a factory. Many instances stand out in my memory. I remember how a certain firm used every resource known to chemistry and mechanics in order to duplicate a certain De Dion engine; but their best imitation was 25% inferior to the original. Jake de Rosier's famous "No. 21" Indian twin was made four years ago; and it is alleged, so I am informed, that the Hendee factory has never contrived to produce another quite as fast.

Now these star engines seldom get into the hands of amateurs, unless they are great favourites at the factory. Last summer I was permitted to overhaul the testing slip file at a certain factory, and I found that the testers had earmarked certain machines sent out for tests as possessing star engines; I noted the numbers, and in the course of the season I frequently met these engines at hill-climbs in the hands of famous riders. This is quite pardonable practice—such engines would be wasted on the common or garden duffer.

A firm with a huge output necessarily supplies a few of these star engines to ordinary users, though the cream of them never leave the factory through the ordinary sales channels. A small firm retains them all for its trade riders and the favoured half-dozen amateurs who show up well in climbs—always supposing the small firm's organisation is good enough to identify these engines as they pass through bench or road tests.

The Personal Element.

Secondly, not one amateur in a thousand possesses the knowledge to tune up an engine that the junior tester of a factory staff can rely on. A lad may get a job as a tester when he knows very little indeed. But he spends all the summer riding one make of engine; the more experienced testers give him a few friendly tips, and the flayings he receives from the head of the riding staff if he passes a machine in poor tune soon makes him careful. The head tester, who may be the firm's first string at hills and on the track, no doubt keeps a few tips up his sleeve, but some day the junior is despatched to represent his firm in a climb, and then all the brains of the staff are put into his engine, and he is able to pick their brains to some degree.

The amateur who would cope with this selected and co-operative knowledge must be a man with unlimited leisure, and with quite unusual mechanical gifts. But supposing an odd amateur happens to get hold of a star engine, and has the leisure and the genius to duplicate the last veneer of factory tune, he still needs the riding skill to win; and when you pit a man with whom motoring is only a hobby, who has perhaps a wife and family to think of, and whose racing experience is very limited, against a young mechanic who has everything to gain and little to lose by a win, it is not surprising that the mechanic can display a trifle more dash in the ruts and round a hairpin bend.

The Machine Itself.

Thirdly, it is the greatest possible delusion to imagine that hill-climbs are really won on machines in "strict touring trim," and I say this with all due respect to scrutineers—an office I have often filled myself, and the uselessness of which is tolerably evident; a scrutineer can only limit departures from regular equipment, he cannot exorcise them.

It is true that some firms claim that their hill-climbing and track wins are achieved by the same machines which win gold medals in reliability trials, and there is a residuum of truth in the statements. I once saw three men arrive at the starting point of a six days' trial; during that very afternoon they had pretty well swept the board at a crack hill-climb, and their respective employers were within the frontiers of truth when they afterwards claimed that the hill-climb and thousand miles medals were earned by "the same machines." This expert trio spent half a day at the starting point changing engine pulleys, tyres, wheels, carriers, carburetters, handle-bars, toolbags, and several other minor items.

Why Amateurs Get Beaten.—

Supposing a novice amateur secures a star engine, either by accident or interest, he must first of all learn all there is to be learnt about corner work and holding up the machine on a rutty surface; then he must know all there is to be known about compression and gear ratios, ignition adjustment, valve spring strengths, etc.; then he must get a special pair of light wheels and tyres and strip his machine down to the extreme limits allowable under the regulations; and finally—and this is very often the real crux—he must get the most perfect carburetter adjustment. I have seen many an amateur compete in an open hill-climb on the very same carburetter adjustment he employs in touring work. He seems to ignore the fact that with the abnormal jets and air intakes used in speed work it is a very difficult matter to keep the engine firing in traffic at all. A spectator at one of the French hill-climbs tells me that one of the English experts could not keep his engine firing regularly at a less speed than 30 m.p.h.

Importance of Good Carburation.

It is therefore obvious that the way of the amateur fastest time man, like the way of transgressors, is hard. If he can persuade the ruling genius of a big factory that he is fit to use a star engine, he may secure a good sample, as the factory is sure to turn out more picked engines than its own staff can find work for, and if he gets placed a few times in big climbs with this second grade engine, he may eventually be allotted one of the half dozen super-excellent engines issued each year. But no matter how great his leisure, and how genuine his riding and mechanical gifts, he will find it hard work even to win two or three third places in open climbs, for he is competing against the double-starred engines of a dozen different factories, bestridden by the greatest experts in the trade, and a few amateurs who are at least as keen and able as himself. If any reader has ambitions in this direction I should recommend him to regard the carburetter as the detail which most repays attention.

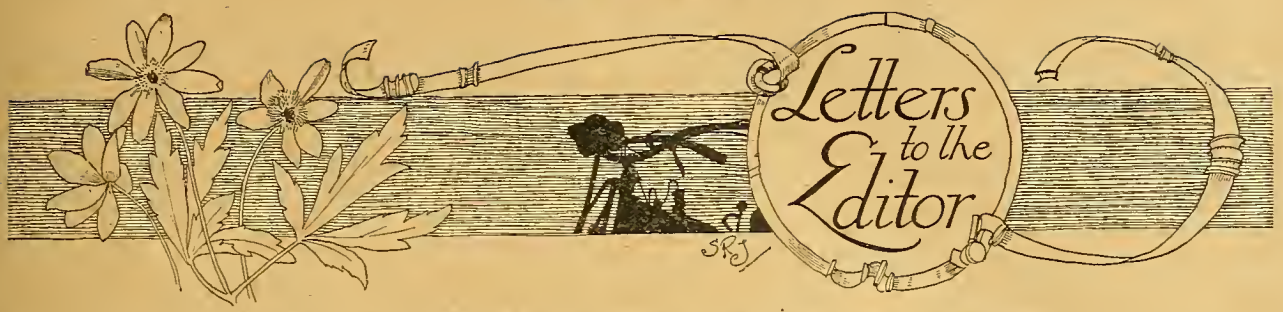
FURTHER WAR OFFICE TRIALS.

THE War Office is at present taking a great interest in motor bicycles, as was shown by the trial held in the presence of members of the Mechanical Transport Committee, at Brooklands, in the early part of the year. To learn for what purpose the War Office requires motor bicycles may interest our readers. In the first place there is no idea of founding a motor cyclists' corps in the regular army. The real use to which they are to be put is this. The Army Service Corps, as most people are aware, has for its object in life the transport of ammunition, forage, food, and other impedimenta necessary to an army in the field. Nearly all the transportation from the railway to the troops is now effected mechanically, and the vehicles are divided up into companies of fifty motor lorries. These lorries are in charge of a captain who rides in a two-seated car, while the two subalterns are mounted on motor bicycles. One precedes the company and shows the way, while the other follows in the rear to look after any cases of breakdown which may occur. On the occasion of the trial on Tuesday, the 26th ult., Lieut. R. H. Verney, A.S.C., was in charge. Mr. Verney is himself a keen motor cyclist, and rode one of the successful P. and M.'s back to Aldershot when the test was completed. The machines entered were two Phelon and Moores and two Douglases. The two P. and M.'s were fresh from the works, and would have been all the better for a little running in. One of the Douglas machines was withdrawn at the last moment owing to a slipping clutch due to the use of a new clutch lining which was not altogether a success. What the War Office required was the following: That each machine should average 30 m.p.h. for nineteen laps, cover one lap at 40 m.p.h., cover one lap with two up, show a good petrol consumption, and climb the test hill from standing start.

The machines were not timed to the fifth of a second, and were only required to come within a reasonable margin of the set standard. The day was beautifully fine, but a strong wind was blowing down the railway straight. Pratt, who was riding one P. and M., was unable to do the lap at 40 m.p.h., but Marians, who was riding the other, did better than the required maximum speed. Pratt's machine was therefore sent back for further tuning up. On the test hill Marians made an excellent ascent, but Pratt failed the first time, though he was successful on the second attempt. Neither of the two machines had any difficulty in maintaining the thirty miles an hour average, and only one stop was made for a broken lamp bracket, due to setting the lamp too high on the bracket. The machines were fully equipped, and carried two stones of lead. Pratt's machine consumed 3¼ pints of petrol, and Marians's rather under 3 pints. Marians's machine carried a passenger round the track in a satisfactory manner. The Model H Douglas acquitted itself most creditably. It easily averaged over 30 m.p.h. over the 19 laps, made a fast lap at over 42, took a passenger round the track at rather over 39, ascended the test hill satisfactorily, and averaged 130 m.p.g. Other machines such as Zenith and Rudge have gone through these tests in a manner satisfactory to the War Office officials, but this is the first trial to which we have been invited.



Lieut. R. H. Verney, of the Army Service Corps, testing how much petrol the 3½ h.p P. and M. had used after covering about 52 miles on the track.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street E.C., and should be accompanied by the writer's full name and address.

Another Exceptional Hill.

Sir,—The intensely exciting hill-climbs which have recently taken place on Honister go to prove the splendid capacity of modern motor cycles, and the wonderful grit of the men that ride them.

There is a very steep and rough pitch at the head of the Langdale Valley (Dungeon Ghyll), which the coaches in summer *descend only*, after making the long climb from Little Langdale, passing the romantic region of Blea Tarn.

It would be interesting to know if this pass has been climbed by a motor cycle. It is not nearly so long as Honister, but the gradient must nearly approach one in three for the greater portion of the ascent. The road is an extremely narrow one, much cut up and loose, and would prove a good test for man and machine. The distance is about five miles from the famous Red Bank. E. T. COOMBES.

Local Taxation Licence.

Sir,—Are you correct in your conclusion that using the motor cycle, and not merely keeping it, compels the payment of the tax? I have in mind a decision of a few years back, where a heartbroken victim was successfully penalised, despite his assertion that his machine had been for months in an outhouse, unused and unusable and completely dissected, and, further, that he never intended to put it together or use it again. Later decisions, too, I remember somewhat hazily, have declared that "abandonment" must entail official notification to the tax-grabber and the surrender of the number.

This view seems the only sound one from the point of view of the Government, who never pretend to throw in any extras for what they take from you, and my recollection of the Act is that the tax is charged for possessing a motor cycle. Whether or not you can or do use it is a matter of indifference to the Government.

I raise the point, not as a critic, but that we may get it statutorily cleared to prevent misunderstanding and risk. W.J.G.

[See L.C.C. *v.* Fairbank, Justice of the Peace Reports, No. 356, in which this matter is cleared up; also see *The Autocar* of March 16th, page 476.—ED.]

Road Dangers in Devon.

Sir,—I should like to warn your readers against an occurrence which happened to me last winter whilst riding at night between Exeter and Plymouth on a dark night. I had a bad spill when on a lonely piece of road on Dartmoor owing to a loose pony being frightened by my light and suddenly jumping in front of my machine. The pony was standing so that I could not see it, and I never had time ever to lift my exhaust before I crashed into the animal.

I should like to know that if in the event of any serious damage being done I should have been able to obtain redress from anyone. Luckily I was only stunned and bruised, and my machine was not materially damaged. I think the attention of the County Council should be drawn to the matter, as I have since heard that these half-wild Dartmoor ponies are constantly in the habit of straying on the roads, and naturally are a source of danger to motorists. J.P.A.B.

[The laws regarding animals straying on the roads are rather complex, but certainly no redress could be obtained in the case of roads which cross common lands. There have been several cases lately.—ED.]

Hill-climbing.

Sir,—While looking through some old numbers of *The Motor Cycle*, I came across the following in the issue of April 25th, 1904, in which appeared an article by Mr. B. H. Davies, describing a run on a Phœnix Trimo up Westerham Hill. In it he says: "The engine (of the Trimo) is a 3½ h.p. Minerva 82 mm. by 82 mm., being the identical one which was fitted to the bicycle driven up Westerham in the Catford C.C.'s climb at 30 m.p.h. It was then geared 3½ to 1 with a belt drive." Surely this was an extraordinary performance, and if authentic it appears that the present 3½ h.p. is inferior to a smaller engine of eight years ago.

It would be interesting if Mr. Davies could tell us some more about this performance if he can carry his memory back far enough. LIEUTENANT.

This letter was submitted to our contributor, who replies as follows:

"I regret I do not remember the details. I have no doubt that Mr. Hooydonk gave me the gear ratios, and as his victory in the Westerham climb was then fresh in everybody's memory, and the engine was a centre of general interest, any mistake of mine about the gear would probably have been corrected. After all 3½ to 1 is not such a very tremendous gear for an easy hill like Westerham, taken by a light rider with a flying start."

Three and Four-wheeled Cyclecars.

Sir,—I was interested to see Mr. Allday's letter in favour of two driving wheels on a passenger cyclecar. I quite agree with all he says in that respect, but surely he did wrong in calling his letter a comparison between three and four-wheeled cyclecars.

He has absolutely ignored the existence of our old friend the tricycle with single front steering wheel. This was not only the first of the type, but, I believe, has never since been equalled for accessibility. Unfortunately, it went out of fashion before the present reliability was obtained, and very little thought had been spent on silence, transmission, or comfort. Mr. Allday asks for other opinions on this subject, and I therefore have great pleasure in plumping for the tricycle with a single front steering wheel as being the only cross between a bicycle and a car that has not most of the objectionable features of both without the full advantages of either.

The only machine now on the market, to my knowledge, built on these lines is the Roc, which is described and illustrated in the same number in which Mr. Allday's letter appears. Now, apart from the appearance or running of the Roc (I have never been on one), or any other details which might be added or altered in this particular make of machine, I maintain that its specification contains more good points and fewer bad ones than any other cyclecar on the market.

It must be remembered that the single driving wheel type has, after years of work and thought, been brought about as near perfection as the type allows, whereas the Roc, which is the only living representative of its class, is the recent production of the brains of one firm only. I mention this to point out that the possibilities of this type have hardly been exploited at all at present.

If Mr. Allday's list of points in favour of the fourth wheel be compared with the Roc specification, I think it will be found to vanish into thin air and leave the tricycle with two excellent points to the good, namely, that it has one wheel less and that it has direct steering which is a feature

of tremendous value. Mr. Allday says he wants interchangeable wheels. I don't; I want interchangeable and perfectly accessible tyres, which the tricycle has. The possibilities of seating accommodation, springing, and general accessibility are as good on the tricycle as on the quad.

I should like to add that the general superstition that the tricycle is of necessity a difficult and dangerous vehicle to steer is absolutely false. It is entirely a matter of design and weight distribution.

My pet aversion in the cyclecar line is the four-wheeler with belt drive. Surely if we are going to have four wheels we might try to have a weatherproof transmission.

RALPH WICKSTEED

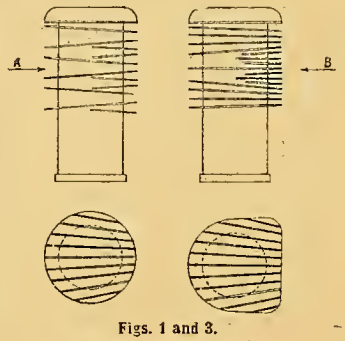
Inclined Engines.

Sir,—The centre of gravity is not displaced in vertical engines to the same extent as that of inclined engines, therefore a vertical engine ensures more stability in riding and greater efficiency, especially if placed half way on wheelbase line. Moreover, the nearer the rider gets to this point in the adjustment of his saddle, the more ease he obtains on greasy roads. Horizontal cylinder fins are most effective because a greater amount of air passes between them. Air is a bad conductor of heat, and only acts in convection to an appreciable extent. Therefore, the more air that passes between the fins, the greater the cooling effect.

MAC STROKESTOWN.

Sir,—With regard to the question of whether radiator fins on inclined engines should be cast parallel to line of motion of machine or not, I should like to point out one or two aspects of the case which occur to me.

In the first place, with regard to the ordinary vertical pattern engine. It is to be conceived that if the fins were cast as in fig. 1, the cooling effect would be somewhat greater than if the standard design were followed, for it is evident that the cooling air would come into much more intimate contact with that portion of the cylinder which is most naturally sheltered. I think this is a better arrangement than that suggested by "Melanzie" (March 7th), as in his case the sloping fins simply act as baffles to a certain volume of air, thus preventing it from impinging on the fins and consequently losing some possible cooling effect.



Figs. 1 and 3.
A. Direction of motion of air
B. Direction of motion of engine

Considering the inclined type of cylinder with fins at right angles to axis. In this case one cannot imagine the cooling effect to be greater than ($C \sin \theta$), where C is the value of the cooling effect if the fins are parallel to direction of motion. Thus if the engine be inclined at all (either way) the cooling effect is less with fins at right angles to axis, and the less the angle θ the less the cooling effect. Imagine the cooling effect if θ = zero, *i.e.*, cylinder horizontal. The end fin is then simply a baffle.

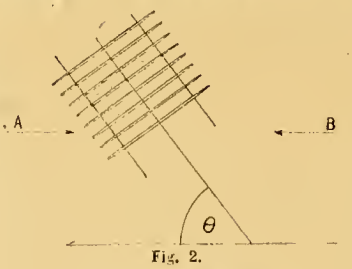


Fig. 2.
A. Direction of motion of air
B. Direction of motion of engine

As to the fact that nearly all firms follow conventional leads in the matter of radiator fins, I suppose one can look at the matter in this way, that, as at present in use, the fins are easily made and in practice give every satisfaction. As regards the inclined engine (and, of course, one naturally thinks of the P. and M.), one would suppose that the makers in the first instance would adopt the present method of placing fins, with the reservation that if it were necessary the alternative method would be adopted. That there has been no need to alter the design everyone knows from the performances that the machines have put up.

Whether some of the firms competing for the hour record will consider it worth their while to improve on the present radiator fin in order to get every ounce out of the engine will be shown in the near future. Personally, I have often thought that a design as fig. 3 would give best results. It will be noticed that in order to get full value from the expanding air the fins are widened as they recede from the first point of contact with the air current.

BETA.

Consumption Comparisons.

Sir,—Your leaderette of March 14th is of particular interest to carburetter enthusiasts, but although bewailing with yourselves the low comparative performance of the motor cycle in petrol consumption, I must disagree with certain statements laid down as facts in your article.

I will quote the particular passages: "In respect to carburation the motor cycle should be more economical, the design of its vaporiser is more settled, and on standard designs the twin lever control of throttle and air is admittedly superior to the single control on a car."

With both of the assertions above I differ, and should like to make a few remarks as to my reason for so differing.

The vaporiser on a motor cycle carburetter consists of a plain jet or jets across which a stream of air blows, petrol issues from this jet or jets in a plain stream at high speeds, and no one can say for certain that perfect or even efficient atomisation is secured by this means. From exhaust gas analysis of some engines fitted with the ordinary type of fine jet carburetter, one is led to the conclusion the petrol *in drops* does go in with the mixture and does not provide an efficient mixture.

Compare this with the best automatic car carburetters and I feel sure that any impartial engineer will agree that the automatic carburetter of the motor car is an infinitely superior vaporiser or atomiser to the motor cycle carburetter.

Twin lever control, so dear to the heart of speed merchants, is, to my mind, a delusion and a snare. What motor cycle manipulator (excuse the term) can or will guarantee that he is running at maximum efficiency at any particular time? I do not believe that any man can adjust such a delicate piece of mechanism as a carburetter in one or two seconds to produce maximum efficiency or even approximately maximum efficiency, and after all this is what twin lever control necessitates—a constant succession of adjustments made in a second or two to meet a condition felt or judged by the lever manipulator.

The expert follows a rule of thumb law or practice learnt in the hard school of experience and "gets there" approximately. The novice is content if the engine pulls sufficiently well to prevent stoppage.

Neither is certain that the mixture is the "best possible" under the given set of conditions, and this is where the single lever automatic carburetter is superior.

It was not until I had the experience of riding on Mr. E. B. Ware's Chater-Lea 8 h.p. twin, fitted with a really automatic one lever carburetter, that I realised the surprising smoothness and flexibility of such carburation, and the feeling of happiness, if I may use the term, is not the least of its advantages.

As a step in the investigation of the problem, to discover whether the loss to the motor cycle is due to engine transmission or wind resistance, I would suggest that motor cycle engine manufacturers give us the results of accurate bench tests in petrol consumption. The average of a well-tuned car engine is about .75 pint per b.h.p. per hour, although figures much better than this can often be secured.

What are the figures for motor cycle engines? It will interest your readers to know that motor lorries weighing about seven to nine tons give over sixty ton-miles to the gallon.

A touring car giving forty ton-miles to the gallon is looked on as particularly good. Smaller cars give up to thirty ton-miles per gallon, and motor cycles average about fifteen ton-miles per gallon.

Perhaps some of your readers can deduce a theory from these figures.

F. N. PICKETT.

Sir,—I notice in your issue of March 25th a statement by Mr. Axford to the effect that he can average 110 m.p.g. with his 6 h.p. Zenith.

I should very much like to know how he can manage this low consumption. Does he run his machine for a mile on a perfectly flat road, with a following wind blowing at the rate of 40 m.p.h., take the consumption of petrol for that mile, and then work out the mileage per gallon? I have ridden three 3½ h.p. machines, and thought myself lucky if I could get 90 m.p.g.

I have just invested in a 6 h.p. Rex sidette, and can get just about 50 m.p.g. with a 9 stone passenger and about 60 m.p.g. when riding solo with sidecar detached. There are a few hills around here (Pembrokeshire). For example, take from Haverfordwest to St. Davids—sixteen miles and sixteen hills, and some of them are stiff ones. I should like to see Mr. Axford average 110 miles on that run.

It is very interesting to see it stated that a 6 h.p. machine can be run 110 miles on a gallon of petrol. I wish I lived near Mr. Axford, I would willingly go for a run of 110 miles with him, and if he did manage the whole distance on one gallon would willingly sell my Rex and straightway buy a Zenith.

ALEX. ROGERS.

Resignation of Mr. F. Straight.

Sir,—I notice in your last issue that Mr. F. Straight has resigned the secretaryship of the A.C.U.

Considering the many years that Mr. Straight has held this office, and the enormously good work he has done for motor cycling, I wish to suggest that you should lend your services to receive from Mr. Straight's numerous friends signatures for facsimile on to a testimonial as a recognition of his services.

What motor cyclists owe to Mr. Straight will never be known, but, speaking for myself, I can say that during the six years I have competed in A.C.U. events I have always had the greatest consideration and courtesy shown to me by him, and often under circumstances trying enough to test a saint.

I trust others will come forward with the same object in view. FRED DOVER.

[We have received a similar letter from Mr. C. C. Cooke, hon. secretary of the Herts County A.C. (Motor Cycle Section).—ED.]

Climbing Honister Pass.

Sir,—With reference to a letter from Mr. J. A. Roche regarding Mr. Frank Smith's remarkable climb of Honister Pass, I think it only fair to point out that the road was not cleared of loose stones previous to Mr. Smith's attempt; all that was done to the road was to brush the loose shingle to one side for about two yards at one place only, where it was impossible to get a grip with a motor cycle wheel. I am fully convinced if this had not been done no motor cycle or sidecar combination would have got up, as it was like a river bed at this point; in fact, all the road is, due to the heavy rains, which rush down the mountain side and run across the roads.

I should further like to point out that at this particular spot it was not safe to try to get over it, as Mr. Roche would no doubt have agreed if he had witnessed Mr. Smith's first attempt. The loose shingle caused the combination to skid bodily to the edge of the road, and anyone who knows the Pass will agree that if you go over the edge at Hillstep you will not require a motor cycle again.

I should also like to inform Mr. Roche that Mr. C. R. Collier had one if not more attempts on the Friday before the witnessed ascent on March 16th. Both Mr. Smith's and Mr. Collier's ascents are worthy of a great deal of praise, but as one machine was higher powered and the other lower geared it hardly does to class them together.

I should like to ask Mr. Roche if he has ever seen the Pass, as I am sure he will agree with me, if he has, that Mr. Frank Smith's ascent on a 5-6 h.p. with passenger was a most remarkable feat considering the road surface and a two-mile run on a low gear before the worst part could be tackled. I think myself that the Clyno Co. have something to be proud of to be the very first firm to produce a motor cycle with sidecar that will take driver and passenger up the well-known and always considered impassable climb of Honister Pass.

F. GREENWOOD.

The A.C.U. Formula and Two-stroke Engines.

Sir,—Replying to "A Believer of Four-stroke Efficiency" in your last week's issue, if the author of the letter who claims that the P. and M. would have beaten the Scott, even if the latter had been reckoned as a four-stroke, had taken the trouble to verify his statement before committing himself on paper, he would have found that 127 (figure of merit of Scott according to *The Motor Cycle*) divided by 1.32 (A.C.U. special handicap on two-stroke water-cooled engines) gives a figure of merit of 96.2, therefore the Scott and sidecar would have beaten the P. and M. and sidecar (figure of merit 96.5). According to the *R.A.C. Journal*, the figure of merit is given as 126 which makes the position of the Scott still better.

It is surely obvious that the only factors which enter into the handicapping of a machine for a hill-climb are the total weight of machine and capacity of engine.

With regard to the question of relative petrol consumption of the two types of machine, it is common knowledge that larger jets are fitted when competing in hill-climbs (apart from the question of special high compression engines, etc.), therefore, according to your anonymous correspondent, a petrol consumption trial up the hill would have to be made before every hill-climb, and a special formula devised and worked out for each competing machine.

THE SCOTT ENGINEERING CO., LTD.,
FRANK PHILIPP, Secretary.

Two-stroke Engines.

Sir,—With reference to your leaderette in the last issue, I should like to point out that the power of an engine is proportional to the actual volume drawn into the cylinders, and it is further shown that in a two-stroke engine the pumping capacity of the crank case is very much less than the pumping capacity of the cylinder in the Otto engine, and that consequently a far less charge can be drawn into a two-stroke type of engine. This applies at all speeds—that is to say, if you imagine an Otto engine and a two-stroke engine both turning round at ten revolutions per minute or a still slower speed, it would be quite impossible for the two-stroke engine to draw in more than the actual effective pumping capacity. On the other hand, the throttling effect at high speeds affects the two-stroke very much more acutely than the Otto, because, to begin with, the two-stroke has only half the period during which the charge is admitted. This is borne out by practical experience, as shown by the fact that the Scott two-stroke undoubtedly gives greater power than, say, a 500 c.c. single-cylinder four-stroke when pulling hard uphill at a comparatively slow speed. What the public wants is a machine which pulls well at slow speed, and it is no disadvantage if the engine does not give, compared with the Otto, the same proportionate increase of power at high speeds.

The mean effective pressure of the two-stroke falls off at high speeds in a marked degree, whilst, comparatively speaking, the mean effective pressure of the Otto remains more or less constant. This leads us to the conclusion that the two-stroke engine could only meet the Otto engine on the A.C.U. formula if the speed of the engine were limited to, say, 1,000 revolutions. At twice that speed, say, 2,000 revolutions, the Otto engine should give an allowance to the Scott engine, since in every modern hill-climb the speeds of the engine are certainly over 2,000 revolutions, and it is impossible to expect the Scott to have a chance of winning on the A.C.U. formula.

With reference to the additional water-cooled handicap, the A.C.U. must be aware, from the fact that we can run our machines in competitions without the water-cooling apparatus better than with it, that it is absolutely absurd to inflict a special handicap for an advantage which has not time to materialise in the rush of a modern hill-climb.

THE SCOTT ENGINEERING CO., LTD.,
ALFRED A. SCOTT, Managing Director.

SUMMARY OF CORRESPONDENCE.

A number of correspondents have written to point out that the Differo gear is similar to gears on which they already hold patents or have provisionally protected.

A. H. Priestley, who is the owner of a 1912 model 6 h.p. Rex de Luxe motor cycle with Wolbrown sidecar, writes that he has covered 1,400 miles at an average cost of less than three-halfpence per mile.

RACING IN PAIRS AT OAKAMOOR.

A Record Entry. Some Close Finishes.

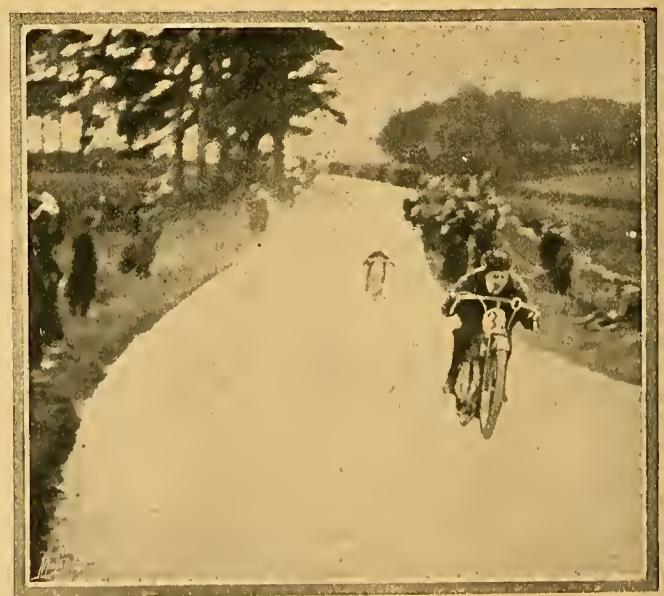


Scene at the starting banner. Hugh Gibson (Bradbury) and H. Reed (Dot-Precision).

THE Derby and District Motor Cycle Club embarked on a new venture in organising an open hill-climb for motor cycles, which was duly held on Saturday last, and as events proved the club captured a record entry, for the list totalled nearly 150 in the five classes. Unfortunately, it cannot be said that the organisation was of the best, for at times everything seemed in a state of chaos and the officials by no means had a clear understanding. However, we fully realise the difficulties of handling so large a number of competitors. The way spectators and stray dogs wandered aimlessly about over the course made one's heart quake, but fortunately no one was hurt. The sport provided was good. From a spectacular point of view, of course, nothing can compare with neck and neck racing, and all clubs would adopt the plan were suitable hills to be found in every neighbourhood. Star Bank, Oakamoor, North Staffs., the scene of Saturday's climb, is not nearly steep enough for a hill-climbing test, but the surface is magnificent, and the three bends only gradual ones. The sight of pairs of riders rushing along at over 50 m.p.h. practically side by side was much enjoyed by the hundreds of spectators who lined the roadsides, and several of the duels were worth going a long way to see.

The Afternoon's Programme.

There were five classes on the programme—(1) for Junior T.T. machines, (2) Senior T.T. machines, (3) makers' 3½ h.p. class, (4) twin-cylinder machines, and (5) all comers. The start was on a rise of about 1 in 20, but as a pusher-off was allowed, few had difficulty in getting under weigh, though it was noticeable how some of the variably geared machines scored in this respect. The course measured 1,400 yards, and the average gradient does not exceed 1 in 12. There were fifteen Junior T.T. machines entered in Class 1., the result being an overwhelming success for the 2¾ h.p. overhead valve J.A.P. engine, which was used by all the semi-finalists. David Bolton impressed the spectators most on his Martin-Jap, but, unluckily, when leading in the semi-final his engine seized. Notwithstanding their small dimensions, by general consent the Junior T.T. machines were easily the noisiest of the whole lot entered. Results:



H. G. Dixon (New Hudson), obtains a good lead in the second round of Class 2.



H. C. Newman (3½ h.p. Ivy) gains a good lead in the first hundred yards over W. F. Newsome (Triumph). This was the semi-final, and Newsome was never able to make up the ground he had lost. Many heats are won in the first hundred yards in this way.

SEMI-FINAL.—P. W. Owen (Zenith) beat David Bolton (Martin); H. Berwick (New Hudson) beat H. G. Dixon (New Hudson).

FINAL.—H. Berwick (2¾ h.p. New Hudson) beat P. W. Owen (2¾ h.p. Zenith-Jap) by 100 yards.

Makers' 3½ h.p. Class.

The "makers'" 3½ h.p. class comprised a medley of machines, as rider and machine had to weigh together 350 lbs. Some interpreted the title to mean standard machines, consequently there was the interesting sight of free engine and three-speed touring mounts competing against T.T. racers. The majority used the same T.T. mounts they had entered for the T.T. class. Some fine riding was witnessed. By far the best heat was when Dixon (New Hudson) and Greaves (Triumph) bounded up the rise at over fifty miles an hour, never a machine's length separating them, as each in turn favoured by a bend in the road would forge ahead. Harry Reed (Dot-Precision) was going great guns, and always had plenty in hand of his opponents, despite his thirteen stones weight. W. F. Newsome (Triumph) won several heats in fine style, once after being considerably behind overtaking his opponent near the finishing banner with ease. When his turn came to contest the semi-final with H. C. Newman (Ivy-Precision), it was regarded as a veritable battle of the giants. In the end it was Wenlock Edge over again, for Newman won by about twenty yards. F. C. North (Ariel) had a most unusual experience. He had won his heat on the T.T. Ariel which he has used in all the important trials of late, its mileage totalling about 12,000, when, half way up the hill, the cylinder burst, and little bits of radiator fins and piston were shed all over the road as the machine travelled fully a hundred yards by its own impetus. Though the connecting rod was wrenched in half, the back wheel did not skid, and North safely came to a standstill.



David C. Bolton (3½ h.p. Rudge) finishing an easy winner of the Tourist Trophy class. His riding was much admired.

Racing in Pairs at Oakamoor.—

The minimum weight clause gave considerable trouble. Lead weights were attached to any convenient part of the machine, but the unthinking riders found that the steering was affected at high speed. C. A. Goold (Corah), who fell at a corner, ascribed it to the lead weights attached to the front forks.

J. H. Slaughter (L.M.C.) proved his sporting propensities when he returned for a fresh start with J. Bushby (Rudge), who had chartered three vigorous pushers-off; the last-mentioned did their work so well at the word to go that they pushed Bushby's machine clean out of his hands into the roadside. After that the officials at the start wisely refused to allow more than one pusher-off. One of the favourites, R. Holloway (Premier) travelled exceedingly well, but was beaten by the ultimate winner in a fine race. In the final of this event two users of Precision engines were pitted together—H. Reed and H. C. Newman. The youngster made a splendid start and early established a lead over Reed, whose avoirdupois was against him, but once really going he set himself seriously to overhaul his opponent, and so successful was he in his endeavours that even the spectators at the finish were not sure who had won. Mr. F. A. Bolton, one of the judges stationed under the finishing banner, declared Newman the winner by half a wheel. Strangely enough, the latter's engine seized momentarily immediately after crossing the tape. Results:

H. C. Newman (Ivy-Precision) beat E. S. Brittain (Triumph); W. F. Newsome (Triumph) beat G. Lee-Evans (Ivy-Precision).

FINAL.—H. C. Newman beat W. F. Newsome, and later H. Reed (bye) by half a wheel.

Class II. for Senior T.T. machines provided some spectacular climbs, D. C. Bolton making an extremely fine performance on his Rudge. He rode beautifully, missing the grass at the curves by a few inches only, never swerving, and so earned a well-deserved and popular win. All the semi-finalists put up fine performances. Results:

D. C. Bolton (Rudge) beat W. F. Newsome (Triumph); J. Woodhouse (Regal-Precision) beat H. G. Dixon (New Hudson).

WINNER OF FINAL HEAT.—D. C. Bolton.

Class IV., for twins, was won by George Brough with a fine climb. Miss Muriel Hind put up a good performance on her Rex, but was defeated by Baxter on a similar machine. Results:

E. F. Baxter (6 h.p. Rex) beat Miss M. Hind (6 h.p. Rex); G. Brough (8 h.p. Brough) beat V. Busby (2¾ h.p. Humber).

FINAL.—G. Brough (8 h.p. Brough) beat E. F. Baxter (6 h.p. Rex), and later H. Riddell (Blumfield), bye.

Class V. was an all-comers' event, and here D. C. Bolton again distinguished himself. Brough and Riddell tied for fastest time of the day (60⅘s.), but in the run off Brough was successful. Result:

G. Brough (6 Brough)	60⅘s.
H. Riddell (6 Blumfield)	60⅘s.
D. C. Bolton (3½ Rudge)	61⅖s.
E. Baxter (6 Rex)	63⅕s.
H. Gibson (3½ Bradbury)	68⅖s.
F. Brown (6 Rex)	70⅕s.
F. Holford (3½ Rover)	72s.
Miss M. Hind (6 Rex)	73⅕s.
F. C. Coops (3½ Triumph)	75⅖s.
K. H. Clarke (3½ Corah-Jap)	75⅖s.
J. Woodhouse (3½ Regal Precision)	76⅖s.
E. Brittain (3½ Triumph)	77⅕s.
L. Norton (3½ Bradbury)	77⅖s.
A. Ainsworth (3½ Rudge)	78⅕s.
E. T. Bolton (3½ Rudge)	81s.
G. Castagnoli (3½ L.M.C.)	82⅕s.
L. Mogridge (3½ Mead Precision)	82⅖s.
G. Hill (3½ Rudge)	84⅖s.



The start of a heat. This picture shows the way in which spectators crowded on to the course.

TOW TOP CLIMBED BY SIDECAR.

Continuing his search for unclimbable hills, Frank Smith, last week-end, made an onslaught on Tow Top Hill, near Kendal. He took with him as passenger E. C. Paskell, of Birmingham, who describes Tow Top as a long climb of loose surface, with eight Farlow bends. The Clyno, which was the four-speed machine geared from 3½ to 1 on top to 14½ to 1 on bottom, was successful at the first attempt, though at one point the fate of the attempt hung in the balance. Descending the hill he got up again with a 14 stones passenger. Thus, Frank Smith and his Clyno are again first to climb stil' another notorious gradient.

TWO THOUSAND MILES IN SIX DAYS ON IRISH ROADS.

J. Healy, of the Dublin and District M.C.C., has put his year old six days' ride quite in the shade by riding from Dublin to Cork and back every day for six consecutive days, bringing the performance to a successful termination on Saturday last. Cork is distant from Dublin just under 160 miles, and as Healy added to the mileage by starting each morning from his home at Chapelizod, his mileage for the week totals approximately 2,000 miles. By starting at 5 a.m. and timing himself to do 320 miles in sixteen hours, he only exceeded the legal limit by a narrow margin. The road between Dublin and Cork is probably as good a straight-away stretch of 160 miles as could be found in Ireland. For the greater part it is level, but the hills at Kilworth Camp, near Fermoy, and at Watergrasshill, at the southern end of the journey, gave him opportunities to use the multi-speed gear with which his 3½ h.p. Rudge was fitted. There were only two days on which it did not rain, and on the first day it rained for ten hours. His machine was naturally covered with mud from top to bottom at the end of the ride, but a cursory examination did not show that it was any the worse, and the seal placed on it before the start by the Dublin and District Club, who undertook the checking of the ride, showed that the cylinder had not been disturbed. Healy is a barrister, and a son of Mr. T. M. Healy, K.C., M.P.

B.M.C.R.C. FIRST MONTHLY MEETING.

Success of the Postponed Event. The First Cyclecar Race Creates Much Interest.



Settling down after the start of the 100 miles all-comers' race. The stragglers have lost ground due to sluggish starting.

BRIGHT sunshine and a strong wind which raised the proverbial dust worth a King's ransom were the order of the day on Wednesday of last week, when the postponed B.M.C.R.C. meeting was held. Though held on a Wednesday, the meeting was well attended, which seems to indicate that the abolition of the mid-week meetings is a pity.

The first event was the three-lap sidecar scratch race for machines up to 1,000 c.c. fitted with a touring sidecar carrying a passenger not weighing less than eight stones. Awards: Gold, silver, and bronze medals. At the completion of the first lap, F. W. Barnes led with ease, and next in order came C. R. Collier, B. A. Hill, S. T. Tessier, and J. T. Bashall. In the next lap the order was maintained, but Hill had gained slightly on Barnes, while the final order was as follows:

		mm.	c.c.	m.	s
1.	F. W. Barnes (2-cyl. Zenith-Jap)	90 ×77.5	998	8	44⅘
2.	C. R. Collier (2-cyl. Matchless-Jap)	85.5×85	964	9	2⅘
3.	S. T. Tessier (2-cyl. Bat-Jap) ...	85.5×64	734	9	50⅘

Hill (7 h.p. Indian) retired with a broken chain, and Bashall (8 h.p. Bat-Jap) with a broken valve, both in the third lap.

There were originally ten entries for this event, but Smith (Rudge), Rhys (Zenith), Carter, H. A. Collier, and G. F. Hunter (Matchless) did not start.

100 Miles All-comers' Race.

The next event was the 100 miles all-comers' race for motor bicycles or motor cycles fitted with sidecars up to 1,000 c.c., competitors to be timed for 50 miles, one hour, and 100 miles. Awards: Gold medal to the first motor cycle and the first sidecar machine in Classes A, B, C, D, and E; the club's silver and bronze medals to the second and third respectively. Instead of the gold medal, a silver cup value £5 or cash at option was offered to the rider of the machine making the best performance in each class, provided the 100 miles record is broken. The finish of the 100 miles was 975 yards before reaching the fork in the thirty-seventh lap. Classes C, D, and E with sidecar, and A, B, and C solo, were started first, while Classes C, D, and E for solo machines were started one hour later.

As a spectacle, the race was somewhat tedious to watch. It was just a procession of machines of all classes, and their order, if taken, meant little or nothing. As a test, it was, of course, extremely valuable, and many and various were the troubles experienced. At the end of the first lap, the procession passed in the following order: Barnes and Axford (Zenith), Wright (Humber), Tessier (Bat sc.), H. A. Collier (Matchless sc.), W. H. Bashall (Humber), A. Bashall (Humber), Griffith (Rudge), Woodman (Humber), J. T. Bashall (Bat sc.), W. Smith (Rudge), and Slatter (Alcyon).

Barnes kept his lead throughout, while all the Humbers in Class B ran wonderfully well. Not the least remarkable of the performances of these was Woodman's. Not only did he, handicapped as he is by the loss of one leg, ride magnificently, but he acquitted himself well at the finish of a really plucky ride.

A Thrilling Moment.

One thrilling moment occurred when a competitor cut closely in while passing Woodman, and caused him to swerve. The latter, however, quickly recovered himself in a very clever manner. Tessier was early in difficulties and valve trouble put him out of the running. Axford ran out of both petrol and lubricating oil. Slatter ran well for thirty-one laps, and then with a heartrending screech his engine gave up the ghost, probably a broken connecting rod causing the failure.

The position of the passengers in the sidecar machines was interesting to observe. Some lay back in the seats, others reclined on their sides. Bashall's passenger sat on the footboard; Weatherilt often leant behind the back of the burly Barnes, whose Zenith carried him to victory. H. A. Collier had a spare petrol tin, to which a tyre pump and a delivery pipe were fitted, and at times the passenger was kept busy pumping petrol into the main tank. Griffith, despite much belt trouble, succeeded in finishing.

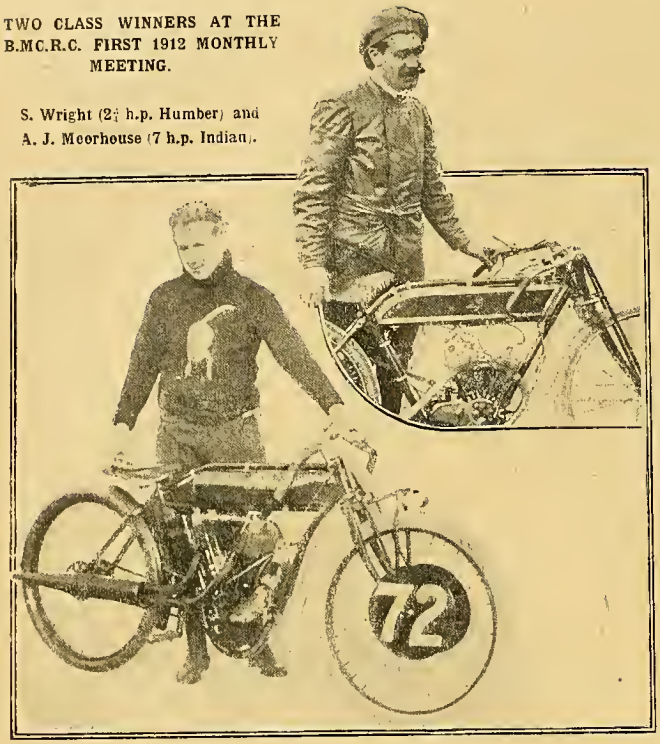


S. D. Timpson and W. H. Elce (3½ h.p. Rudges) at full speed in the 100 miles all-comers' race.

B.M.C.R.C. First Monthly Meeting.—

TWO CLASS WINNERS AT THE B.M.C.R.C. FIRST 1912 MONTHLY MEETING.

S. Wright (2¾ h.p. Humber) and A. J. Moorhouse (7 h.p. Indian).



Starting the Solo Machines.

Then Classes C, D, and E, for solo machines, were started. Mr. A. G. Reynolds marshalled them in single file, lined them in close order opposite the timekeeper's box, and when the right moment came started them. Then the track resounded with the noise of numerous competitors in full flight. Moorhouse led the ball, but his 7 h.p. Indian was not too noisy. Godfrey, on the other hand, who rode a single-cylinder machine of the same make, had covered auxiliary exhaust ports, and the sound from these was quite noticeable. Moorhouse put up a splendid performance, and spent his time in lapping everybody else. Godfrey made an excellent start, and held the second place till the seventeenth lap, when a broken exhaust valve caused his retirement. Barnes, after running faultlessly for many laps, had the misfortune to have his belt come off, and as it did so it struck his passenger, the faithful Weatherilt, in the eye, stunning him for the moment. Major Lloyd quickly sent a car to the assistance of the wounded one, but by the time it had reached the spot Barnes was again under way.

Results of the 100 Miles Race.

CLASS A.

Slatter retired for reasons stated.

CLASS B.

		mm.	c.c.	h.	m.	s.
1.	S. Wright (2-cyl. Humber) ...	60×60	340	2	10	56
2.	A. E. Woodman (2-cyl. Humber)	60×60	340	2	14	28⅘
3.	A. Bashall (2-cyl. Humber) ...	60×60	340	2	21	46⅕

Woodman's ride is all the more creditable in that he had to stop four times for a loose plug terminal. J. T. Bashall rode well throughout the trial, but was troubled with a leaky tank, while Audrey Bashall (2¾ h.p. Humber) had a puncture. There were six entries in this class—five Humbers and a Martin-Jap; the latter was a non-starter.

CLASS C.

		mm.	c.c.	h.	m.	s.
1.	E. B. Ware (Rudge)	85×88	499	1	47	42⅘
2.	W. D. South (Rudge)	85×88	499	1	50	18
3.	W. F. Guiver (Rudge)	85×88	499	1	51	46⅕

In this class Ayres (Singer) had trouble with his tyre valve pulling out; S. C. W. Smith (Singer) suffered belt trouble; Rhys, who was to have ridden a Triumph, broke the cylinder flange the night before the race, and rode Miller's Matchless, on which he had belt trouble; Elce (Rudge) was put out of the running through a fault in the timing; Spencer (Rudge) had tyre trouble; while Ware (Rudge) had the top of his oil pump come unscrewed on several occasions.

The original entry list for the 23rd ult. (Saturday) contained twenty-three names. Among those who did not compete on Wednesday were Brewster (Norton), Stanley (Singer), Haswell (Triumph), Vernon Taylor (Rudge), C. T. Newsome (Rover), Howard Smith (Triumph), Milledge (Rover), Oldman (Bat), Maurice (Premier), etc.

CLASS D.

Printz and Hal Hill, the only entrants, both on Bat machines, did not finish, the former through belt trouble, the latter through the belt coming off seven times and a puncture.

CLASS E.—Solo.

	mm.	c.c.	h.	m.	s.
A. Moorhouse (2-cyl. Indian) ...	82.5×93	994	1	30	7

This constitutes a record. Previous best, Stanhope Spencer (Rudge), October 3rd, 1911, 1h. 34m. 8s.

Sidecar Performances.

CLASS C.—With Sidecar.

	mm.	c.c.	h.	m.	s.
G. Griffiths (1-cyl. Rudge)	85×88	499	3	6	41

CLASS E.—With Sidecar

	mm.	c.c.
F. W. Barnes (2-cyl. Zenith-Jap)	90×77.5	998

Records—

50 miles ... 1h. 0m. 18⅘s.	2 hours...96 mls. 1,594 yds.
1 hour ....49 mls. 1283 yds	100 miles ..... 2h. 3m. 42⅗s.

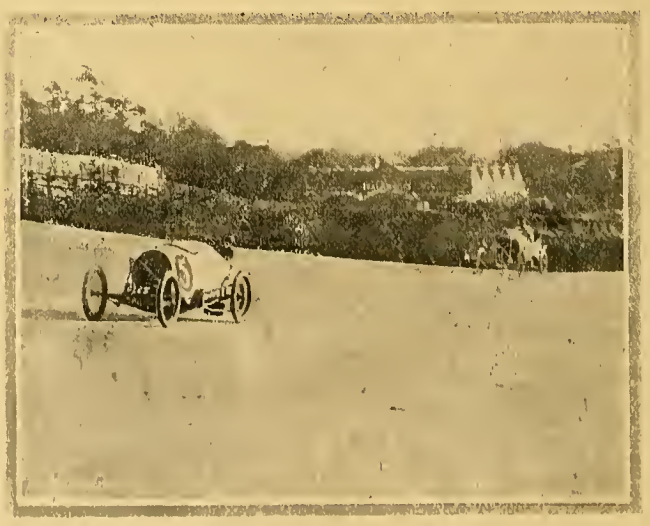
The previous best performance for the one hour was by W. H. Bashall (2-cyl. Bat-Jap), 85.5×85 mm., 964 c.c., November 21st, 1911, 45 miles 639 yards; and for the hundred miles, H. A. Collier (2-cyl. Matchless-Jap), 85.5×85 mm., 964 c.c., 2h. 16m. 3s.

The First Cyclecar Race.

The last event—the New Comers' Race—created great interest as it was the first of its kind. It was down on the programme as being for cyclecars of any type or power, but not exceeding 5 cwts. unladen, or 600 lbs. without driver or passenger ready for use. Distance, three laps (about eight miles). Awards—gold, silver, and bronze medals to first, second, and third respectively.

A brief review of the competing vehicles may be interesting. The Autotrix was a sensible looking vehicle, with chain drive, Chater-Lea three-speed gear box, and rod steering. The Morgan had a boat body and a 90 × 77.5 J.A.P. engine with

IN FULL FLIGHT.



An impression of the cyclecars at full speed.

B.M.C.R.C. First Monthly Meeting.—



Start of the cyclecar race. It will be noticed that the cyclecar drivers have aped the big car racers even to the smoke of the exhaust!

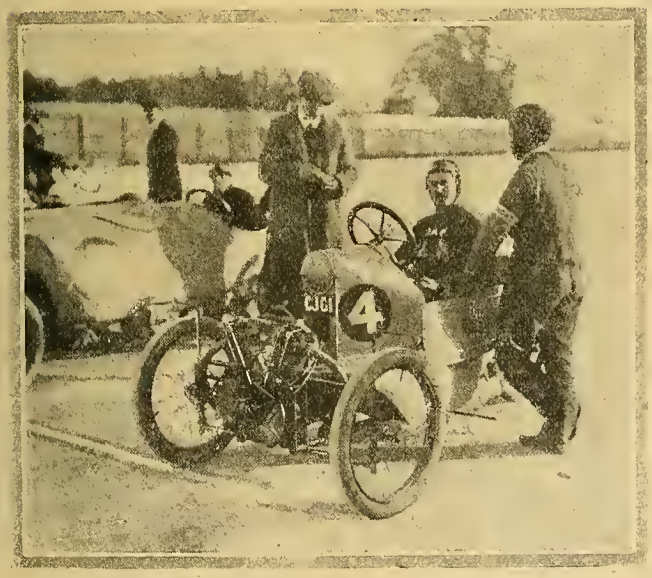
overhead valves, and was one of the smartest of its type we have yet seen. Godfrey was at the wheel of a Rollo fitted with J.A.P. engine and expanding gear. Both the Bedelias had boat-shaped bodies, and one a 90° Bourbeau engine. E. D. Tate's Sabella-Jap had a 9 h.p. a.o.i.v. engine, disc wheels, and was of distinctly racy appearance.

At the start, Martin in the Morgan was first away. The Bedelia entered by Bourbeau and that driven by W. Ward were pushed off, while the former made a rather poor start.

A Cyclecar Turns Turtle.

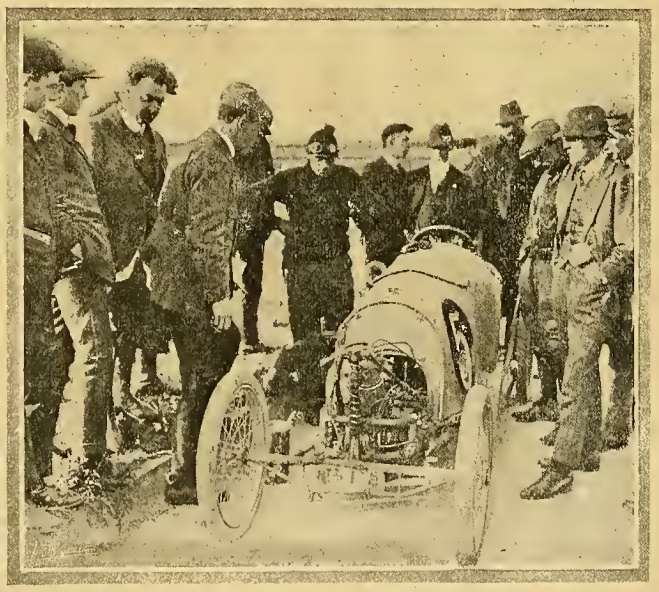
At the end of the first lap Martin was a quarter of a mile ahead. The others passed in the following order: Tate, Godfrey (whose machine was misfiring) Robinson, Bourbeau (whose machine followed a most erratic course), Wadden, and Ward. The next lap Martin led by about a mile, and was timed to be doing roughly 59 m.p.h. Bourbeau's machine wobbled till it upset. Godfrey and Robinson brought up the rear. Result:

	mm.			c.c.	m.	s.
1. H. Martin (2-cyl. Morgan-Martin)	90	×	77.5	998	8	32
2. E. D. Tate (2-cyl. Sabella-Jap) ...	85	×	95	1066	11	4
3. J. Robinson (2-cyl. Sabella) ...					13	21
4. W. Ward (2-cyl. Bedelia)... ...	80	×	100	1006		
5. O. C. Godfrey (2-cyl. Rollo-Jap)	85.5	×	85	964		



Harry Martin, winner of the cyclecar race, on his Morgan runabout. As may be seen, the J.A.P. engine is of the overhead type.

Major F. Lindsay Lloyd officiated as judge and clerk of the course, while the timekeepers were Messrs. A. V. Ebblewhite, A. G. Reynolds, P. Dutton, and F. T. Bidlake. Mr. Loughborough's new clock, worked alternately by Major Lloyd and the inventor, was much appreciated



The new comers created a great deal of interest. The photograph depicts the the Rollo-Jap which was driven by O. C. Godfrey.

MOTOR CYCLES AT BIRMINGHAM TRADES EXHIBITION.

A Trades Exhibition was opened on the 25th ult. at Bingley Hall, and about a dozen stands were devoted to exhibits of motor cycles. The Kerry-Abingdon was in a glass case, which had a mirror back so that one could inspect both sides of the machine at once. Two models of the Sun were shown. Each was fitted with a 3¾ h.p. Precision unit. One had a Sturmey Archer three-speed hub and Turner sidecar. Robert Bruce, Ltd., were showing on Stand 108 a T.T. Quadrant. Stand 110 was devoted to the G.D.W. motor cycles. One model was fitted with a 2½ h.p. J.A.P. engine. Another had a 3¾ h.p. Precision. The "Rollo" runabout (W. C. Hyde, Stand 111) attracted a good deal of attention. Centaur and "O.K." Precision motor cycles also found a place on this stand. 3½ h.p. Trump motor cycles were shown. A 6 h.p. twin was also on view. Garrard and "Canoelet" side carriages completed the exhibits.



TIME TO LIGHT LAMPS.

April 4th	... ...	7.35 p.m.
,, 6th	... ...	7.38 ,,
,, 8th	... ...	7.42 ,,
,, 10th	... ...	7.45 ,,

English-Dutch Trial.

Entries for the Dutch trial, to be held in Holland on August Bank Holiday, close on Saturday, April 15th. Committees of leading motor cycle clubs are to be asked to choose the British teams.

Cut-outs Illegal on Cars.

This week the new Local Government Board Order prohibiting the use of exhaust cut-outs on cars came into force. We wonder how long it will be before a similar regulation is issued applying to motor cycles.

Soldiers and Reflex Lights.

The Military Authorities at Aldershot have issued an order that soldiers, when marching by night, shall carry a red reflex light as a precaution against being run into by motor vehicles. One of the soldiers in the rear file of each company on the march will carry a red reflex light at the back of his belt.

The Strength of the A.C.U.

The present membership of the Auto Cycle Union is as under:

Affiliated members (73 clubs) ...	3,437
Individual members	379
Touring members	1,503
	5,319

Obstruction by Tramcars.

The General Committee of the R.A.C. has voted one hundred guineas towards the cost of opposing the Bill that is being promoted in Parliament by the London County Council, seeking powers to run coupled and trailing tramcars upon their tramways system. It is felt that the present obstruction to the free passage of the road caused by tramcars would be seriously aggravated if the proposal of the L.C.C. were allowed by Parliament to be put into effect.

The following resolution was unanimously passed at the council meeting of the R.I.A. on the 22nd ult.:

"That this meeting, having considered the provisions of the London County Council (Tramways and Improvements) Bill, 1912, in regard to the use of trailer-cars, strongly opposes the granting to the Council of such powers in respect that the congestion of traffic in the streets of the County of London is largely due to the existing tramway traffic, and that the use of trailer-cars would, in the opinion of the Council of the Roads Improvement Association (Incorporated), very seriously aggravate such congestion."

Telegraph Poles on the Highway.

Owing to the accidents which have occurred in certain districts through telegraph poles being placed on the edge of the road instead of in the ditches at the side, the R.A.C. is making investigations with a view to the removal of this danger to those using the roads.

The Roads Improvement Association.

The lessees of the Dartford Light Railways have, as a result of representations from the R.I.A. respecting the unsatisfactory condition of a certain section of their tramway track from Bexley Heath through Crayford and Dartford to Stone, caused their permanent way engineer to make a special inspection, and have promised that the defects complained of shall be remedied forthwith.

Why the Deposit System was Inaugurated.

A Nottingham youth, named Arnold Sanders, has been sentenced to three months' imprisonment for a series of ingenious frauds. He advertised in *The Motor Cycle* a belt for 12s. 6d. It was contended in evidence that he had so many replies that he became confused in his methods, and forgot from which letters he received the postal orders. Consequently no one got the belt. Two persons who sent postal orders took action, and Sanders was arrested. Subsequently 19 cases were proved against the prisoner.

SPECIAL FEATURES.

Why Amateurs Get Beaten
Racing in Pairs at Oakamoor.
Compression Ratio.
B.M.C.R.C. Meeting at Brooklands.

To Prevent Knocking.

To obviate noise caused by endwise movement of the big end on the crank pin of car engines, Mr C. Y. Knight, the inventor of the Knight-Daimler slide valve engine, has patented a method of interposing fibre or other suitable rings between the big end and the cheeks of the crank. This might prevent some of the knocking one hears so often on a motor cycle engine which has been attributed to various causes but is usually associated with overloading and lack of lubrication and pre-ignition.

A New Zealander's Experience.

M.W.R. writes us from New Zealand that a few days ago a friend of his went for a run on his motor cycle when the engine suddenly stopped. Upon making an examination he found a blow-fly fixed between the top of the sparking plug and the petrol tank, thus short-circuiting the current. When removed the fly was found to be dead—electrocuted. A rather long sparking plug was being used, the space between the top of the plug and the underside of the tank being only a quarter of an inch.

AT BROOKLANDS IN THE 100 MILES ALL-COMERS' RACE.



A good struggle between two sidecars.



The new Members' badge, of distinctive design, adopted by the Coventry and Warwickshire Motor Club. It is to be presented free to all members on payment of their subscription.

Institution of Automobile Engineers.

At the next general meeting of the Institution on the 10th inst., Professor Morgan's paper on "Paraffin as Fuel" will be read in place of Mr. Guest's paper announced for that date.

A.C.C.F. Circuit de Paris.

In addition to the names published last week, the following have signified their intention of taking part in the Circuit de Paris: H. Lister Cooper (3½ Triumph) and G. Griffiths (3½ Multi Rudge). The English party now numbers fifteen.

A Hill-climbing Week-end.

The joint open hill-climb of the Harrogate and Herts. County Clubs, to be held on Saturday next, at Leathley Bank, has resulted in a large entry, the usual expert hill-climbers, most of whom were at Oakamoor last Saturday, having entered. The majority will afterwards make a move for Brigsteer Brow for the Westmorland Club's hill-climb on Easter Monday.

Auto Cycle Union Notes.

One-day Trial.—This trial will be re-run on the 24th inst., and will start from Oxford. The route is to be kept secret, but we are at liberty to say that it will not be of such an intricate nature as the last. There will be a class for cyclecars, which will be admitted under the same conditions as have been instituted for cyclecars in the Six Days' Trial.

Cyclecars in the Six Days' Trial.—These must not exceed a maximum weight of 7 cwts. complete with body. They must be fitted with a comfortable touring body, with lamps, an efficient silencer, effective mudguards, and a reasonably protected magneto. All cyclecars must be provided with a free engine device and a change-speed gear controllable from the seat when the vehicle is running.

Tourist Trophy Race.—Practising will be allowed from 5 to 7 a.m.

Timekeepers.—Messrs. A. V. Ebblewhite and D. K. Hall have been re-appointed timekeepers to the A.C.U. (subject to confirmation by the General Committee).

Entry Forms.—All entry forms filled in by riders of variable speed machines must in future show the number of speeds and the gear ratios.

Permits.—A permit has been granted to the Sutton Coldfield and Mid-Warwickshire A.C. to hold a hill-climb for amateurs on May 18th. A special permit has been granted to the M.C.C. to hold the inter-team trial for *The Motor Cycle* Challenge Cup on June 15th.

Silencer Regulations.—The Union is determined to do all in its power to cause manufacturers to turn out a reasonably silent machine. For the present, at all events, the following regulation should ensure that all machines taking part in competitions are tolerably quiet: "The judges of any open competition shall have power to disqualify any unduly noisy machine." This regulation is mainly drafted to strengthen the judges' hands at hill-climbing competitions.

FUTURE EVENTS

April 5-8.—N.W. London M.C.C. & Herts. County A.C. Joint Trial and Open Hill-climb (Yorks.) and Ladies' Competition.
„ 8.—Westmorland M.C.C. Open Hill-climb at Brigsteer Brow.
„ 13.—Oxford M.C.C. Hill-climb.
„ 13.—Liverpool A.C.C. Open Reliability Trial.
„ 20.—B.M.C.R.C. Race Meeting.
„ 20.—Bristol M.C.C. Open Hill-climb
„ 27.—Bristol B and M.C. Open Hill-climb
„ 27.—M.C.C. Open Silencer Trial.

Mr. F. Straight.

Mr. F. Straight, the retiring secretary of the A.C.U., has, we are informed, accepted a position with the Rover Co., Ltd., Coventry.

Further War Office Tests.

Mr. W. Pratt, we understand, easily succeeded in passing the War Office test at Brooklands last week on the occasion of his second attempt, as he covered a lap three miles an hour above the speed required on a 3½ h.p. P. and M. The failure on the first attempt was due to a stuck piston ring.

R.A.C. and Associated Clubs' Annual Dinner.

The yearly dinner was held at the Holborn Restaurant on Friday evening last. Among the prominent members of the A.C.U., which is affiliated to the parent body, were Colonel H. C. L. Holden, R.A., C.B., F.R.S., Messrs. Robert Todd, J. R. Nisbet, G. F. Sharp, and E. M. P. Boileau (*The Motor Cycle*). Speeches were made by Mr. A. Armitage, Sir John Macdonald, and Mr. Joynson-Hicks.

Hill-climb on Snaefell.

Considerable surprise has been caused in Liverpool motor cycle circles by an announcement on the Mersey M.C. programme of events that this club intends to hold an open hill-climb on Snaefell on the Saturday between the two Tourist Trophy Races. The Mersey Club applied for a permit to hold an open climb on the date mentioned, but the permit has, we are informed, not yet been granted. Motor cyclists generally will, we think, agree that any open event held in the T.T. week should be organised by the Auto Cycle Union.



DERBY AND DISTRICT M.C.C. HILL CLIMB AT OAKAMOOR.
Start of a heat. The starting banner may be seen in the distance.

A.C.U. Annual General Meeting of the Council.

THE annual general meeting of the Council of the A.C.U. was held at 89, Pall Mall, S.W., on Saturday afternoon last. It was preceded by a meeting of the Motor Cyclists' Progressive Association, at which the chairman of that body, Mr. Otto Thomas, explained, at some length, its aims and objects. Mr. Thomas clearly showed that the M.C.P.A. was an association formed inside the governing body. It would also ensure those provincial clubs who could not send their own delegates being represented by active and desirable men.

At 3 p.m. the annual general meeting of the Council of the A.C.U. began, under the able chairmanship of Mr. Robert Todd. Mr. H. P. E. Harding opened the ball by asking the chairman if there was anybody present who was not entitled to vote. The Chairman asked for someone to challenge Mr. Harding's statement, which Mr. W. H. Wells promptly did. Mr. Harding then named three members, whom Mr. Todd informed that they might be present though they could not vote.

Considerable time was then spent, on Mr. Harding's request, in reading the names of the various delegates of the R.A.C. private members and affiliated clubs, and the lists of proxies received. The minutes of the last meeting, and the report of the General Committee, were then passed, and the accounts submitted. Several questions were afterwards asked, which were answered by the treasurer, who moved the adoption of the accounts, and Mr. E. Nelson then enquired as to the fate of the funds of the Féderation Internationale des Clubs Motocyclistes. Mr. G. F. Sharp gave a brief history of the F.I.C.M., and reported that he held the funds for that body, the only surviving member of which was the A.C.U. It was suggested that the money should be spent in reforming the Federation.

The following proposition was then moved by Mr. V. Hart and seconded by Mr. F. A. Hardy, and carried:

To alter Rule 42 as follows:

11th line, after the words "affiliated clubs," to delete "each of whom must represent a different club," and to substitute, "who shall be nominated in accordance with a scheme the purport of which has already been circulated among the delegates. Pending the election of the club representatives, the existing club representatives on all committees are asked to continue in office. The election of officers and members of committees and sub-committees will be deferred until the first meeting of the General Committee after the election of the club representatives on the General Committee, the object of this being to ensure all affiliated club representatives having power to elect the Union officers.

Re-election of the President.

His Royal Highness the Duke of Teck was re-elected as president, and the vice-presidents were also re-elected.

Mr. W. H. Browne, in the place of Mr. Howard Smith, who was unavoidably absent, then moved "That the Auto Cycle Union compile an official list of names of gentlemen who are qualified and willing to act in the capacity of judges and timekeepers in various parts of the country, and to publish this list, together with full addresses, in the yearly Handbook." This was carried with a slight modification introduced by Major Lloyd. As the resolution could not be included in the Handbook this year it was agreed to circulate it.

Mr. H. P. E. Harding then proposed "That no member of the A.C.U. connected with the manufacture or sale of motor cycles, motor cars, or parts used on same, or advertising agents, be eligible to serve on the General Committee of the Union." Mr. Harding, in proposing this resolution, assured those present that he did so from no personal motives. Mr. Harding, after referring in somewhat sarcastic terms to the M.C.P.A., asked why many of its members who were on the committee had not made the A.C.U. what it should be? They had always had a majority. He could only think they had worked simply to get their own men on the committee. The speaker then mentioned that the chairman of the M.C.P.A. had thrown the blame of the failure of the one-day trial on the Competitions Sub-committee, and had asked what he was doing on that occasion. He then asked where the chairman of that Association was on that day. Why, he asked, should trade members be allowed to serve on the committee when the trade had a strong association of their own?

Mr. C. H. Hawkins seconded the motion in a most able manner, and dwelt at some length on the great work the A.C.U. had accomplished in the development of the modern motor cycle, and inferred that this could not have been effected but for the energy of the private owner.

Mr. Otto Thomas, in reply, said that the proposal had been drafted somewhat carelessly, as the words "advertising agent" had been included when the words "advertising matters" had been intended. It was characteristic of the work with which the proposer had been associated in the past. Mr. Harding had approved of the present state of the A.C.U. and the work it had done. Mr. Thomas ventured to disagree. He felt that all those who had the interests of motor cyclists at heart must make for the better management of the A.C.U. He then spoke of the assistance the trade had given to the Union. He desired to see members of the trade on the committee, provided they worked hand in hand with the other members. At the conclusion of this speech there was prolonged applause.

The A.C.U. and Trade Members.

Mr. Nisbet said, as to the trade, he was steeped to the eyes in it. It was in thorough sympathy with the A.C.U. Mr. Harding had referred to the trade organisation, and had asked why the trade should serve on the A.C.U. committee if it had an organisation of its own. To that he replied the trade did not impose rules, but only made suggestions.

Mr. Moorhouse read a letter from Mr. Baynes, of the Manchester club, which had threatened to terminate its agreement with the A.C.U. He would try to avoid this after knowing the work the M.C.P.A. had done. Mr. Moorhouse spoke of the opposition shown by the northern clubs in the past, and how since the formation of the reforming body the Northern League had been disbanded.

Major Lindsay Lloyd explained how the R.A.C. treated the matter; how it always felt it was better to have the trade on the committee and with you than outside and against you.

Mr. Harding then replied; and Mr. Todd made a few remarks from the chair. He attached great importance to the matter, but he thought Mr. Harding had gone too far. He also echoed Major Lloyd's statements.

The proposal was then put to the meeting, and the voting was 6 for, 50 against. Proxies were then asked for, and the voting was 47 for, 83 against.

Some 1912 Fixtures.

Mr. A. R. Hunter then proposed that the following fixtures be promoted by the Union during 1912: Annual race meeting; inter-team reliability trial.

Mr. W. H. Browne (for Mr. Howard Smith), on behalf of the Sutton Coldfield club, and Mr. Shaw Scott, of the same club, spoke in support of the motion as regards the inter-team trial.

Eventually Major Lloyd suggested an amendment that it be an instruction to the General Committee to consider the holding of the team trial, which was carried unanimously.

The final proposal on the agenda, "That the name of the Nottingham and District Local Centre be changed to the East Midland Local Centre," was proposed by Mr. J. King, of the Nottingham and District M.C.C., and carried unanimously.

COVENTRY & WARWICKSHIRE M.C. OPEN TRIAL.

Quite a novel scheme has been decided upon in connection with the above club's open trial, on May 4th. Usually, in the case of secret courses, the route is announced either the day prior to the event or on the morning, but the committee has decided not to publish or announce the route at all. Officials will precede the competitors and erect arrows at every doubtful corner and use a paper trail where necessary, and competitors will be despatched with instructions to follow the marked route. A number of steep hills will be included in the 150 miles course (which must be covered without an involuntary stop). There will be three classes: 1, motor bicycles; 2, sidecars; 3, cyclecars. In addition to prizes for the best performance in each class, there will be special awards for the best performance by an amateur, the best performance by a club member, and also for the best performance on a single geared machine.

Brooklands Easter Monday Meeting.

BELOW will be found the entries for the two motor cycle races to be held by the Brooklands Automobile Racing Club on Easter Monday next.

2.25 P.M.—THE SIXTH SHORT MOTOR CYCLE RACE.

K. Vaughan (1-cyl. Triumph)	85 × 88
E. T. Bolton (1-cyl. Rudge)	85 × 88
D. C. Bolton (1-cyl. Rudge)	85 × 88
W. D. Dewar (1-cyl. Triumph)	85 × 88
M. Campbell (1-cyl. Triumph)	85 × 88
S. C. Winfield-Smith (1-cyl. S.I.A.M.T.)	— —
H. E. Govet (2-cyl. Humber)	60 × 60
V. Wilberforce (2-cyl. Zenith)	76 × 54½
A. J. Walker (1-cyl. Rudge)	85 × 88
S. R. Axford (1-cyl. J.A.P.)	80½ × 60
E. Barnfather (1-cyl. Croydon-Whitgift)...	80½ × 60
W. Stanhope-Spencer (1-cyl. Rudge) ...	85 × 88
W. H. Elce (1-cyl. Rudge)...	85 × 88
W. Pollard (1-cyl. Quadrant)	81½ × 88
H. Martin (1-cyl. Martin)	76 × 59½
W. O. Oldman (2-cyl. Bat)	76 × 54½
J. H. Manners-Smith (1-cyl. Triumph) ...	85 × 89
G. E. Stanley (1-cyl. Singer)	69 × 80
N. A. Ayres (1-cyl. Singer)	69 × 80
R. N. Stewart (1-cyl. Rudge)	85 × 88
R. Cooke (1-cyl. Rudge)	85 × 88
W. W. Douglas (2-cyl. Douglas)	61 × 60
E. Kickham (2-cyl. Douglas)	61 × 60
G. H. Hunter (2-cyl. Zenith)	90 × 77½
H. Hunter (2-cyl. Corah)	90 × 58

3.50 P.M.—THE FIFTH LONG MOTOR CYCLE RACE.

S. C. Winfield-Smith (1-cyl. Singer) ...	85 × 88
E. T. Bolton (1-cyl. Rudge)	85 × 88
D. C. Bolton (1-cyl. Rudge)	85 × 88
W. Dewar (1-cyl. Triumph)	85 × 88
M. Campbell (1-cyl. Triumph)	85 × 88
H. E. Govett (2-cyl. Humber)	60 × 60
A. J. Walker (1-cyl. Rudge)	85 × 88
S. R. Axford (1-cyl. J.A.P.)	80½ × 60
E. Barnfather (1-cyl. Croydon-Whitgift)	80½ × 60
W. Stanhope-Spencer (1-cyl. Rudge) ...	85 × 88
W. H. Elce (1-cyl. Rudge)	85 × 88
W. Pollard (1-cyl. Quadrant)	81½ × 88
H. Martin (1-cyl. Martin)	76 × 59½
W. O. Oldman (2-cyl. Bat)	76 × 54½
J. A. Manners-Smith (1-cyl. Triumph) ...	85 × 89
G. E. Stanley (1-cyl. Singer)	85 × 88
N. A. Ayres (1-cyl. Singer)	85 × 88
R. N. Stewart (1-cyl. Rudge)	85 × 88
R. Cooke (1-cyl. Rudge)	85 × 88
W. W. Douglas (2-cyl. Douglas)	61 × 60
E. Kickham (2-cyl. Douglas)	61 × 60
G. F. Hunter (2-cyl. Zenith)	90 × 77½
H. Hunter (2-cyl. Corah)	90 × 58



CLIMBING ARTHUR STREET, EDINBURGH.

A 3½ h.p. 1912 pattern Humber climbing the 1 in 4 gradient of Arthur Street, Edinburgh, with a sidecar and passenger. The driver is A. G. Fenn, who has been in Scotland for a month climbing the notorious hills in the neighbourhood of Edinburgh and Glasgow.

M.C.C. Land's End Run.

A RECORD entry of 86 machines has been received for the Land's End run at Easter A supper will be prepared at the Bridge House Hotel, Staines, at 8.30 on Friday night, the start taking place from that hotel at 3 o'clock on Saturday morning. There will be a control in Exeter, in which city 1 hour 15 minutes will be allowed for lunch and replenishments, and for crossing the town. A pretty and mountainous section, but one requiring great care, will be included between Ashburton and Two Bridges. 16½ hours will be allowed for the outward trip, and 15 returning. Below we give a complete list of the entries:

Southcomb May (8 Portland-Jap)
G. E. Purchase (3½ Triumph)
F. J. Watson (3½ Swift)
S. G. Frost (4½ V.S.-Jap)
E. Gwynne (3½ Triumph)
E. Pond (3½ Rudge)
G. Brough (6 Brough)
G. G. C. Pigott (5-6 Zenith)
V. Olsson (6 Trump-Jap)
A. G. Peppercorn (3½ Bradbury)
L. A. Baddeley (7 Indian)
D. S. Baddeley (——)
A. Dickinson (3½ Triumph)
E. L. Mather (5-6 F.N.)
H. Karslake (3½ Rover)
G. L. Fletcher (2¾ Douglas)
F. C. North (3½ Ariel)
H. Greaves (2¾ Royal Enfield)
S. C. Perryman (3½ Ariel)
B. Alan Hill (7 Indian sc.)
J. S. Holroyd (2½ Motosacoche)
A. J. Sproston (3½ Rudge)
W. Pratt (3½ P. and M.)
W. Cooper (3½ Bradbury)
C. Patteson (2¾ Moto-Rêve)
H. R. Deighton-Simpson (—)
J. Haswell (3½ Triumph sc.)
W. B. Gibb (2¾ Douglas)
S. F. Garrett (3½ Premier)
A. G. Barr (3½ Quadrant)
G. B. Fry (3½ Quadrant)
F. C. Wasley (2¾ Douglas)
P. Grout (4½ Quadrant)
P. H. Bentley (3½ Triumph)
R. Davis (8 Chater-Lea sc.)
H. G. Slingo (5-6 Clyno sc.)
A. M. Scott (3½ Triumph)
G. T. Gray (3½ Rudge)
Frank Smith (5-6 Clyno sc.)
P. Phillips (2¾ Douglas)
P. W. Moffat (2¾ Douglas)
J. Milner (7 Indian)
E. O. Babington (6 Bat)
S. Saunders (3½ Rudge sc.)
J. A. Neuman (3½ Rudge sc.)
R. Lord (6 Rex sidette)
H. R. Whitmore (3½ Rudge)
E. J. Hancock (3½ Premier)
T. H. Birdsall (3¾ Premier)
C. Meredith (3½ Bradbury)
W. C. Hemy (3½ Service Precision)
F. S. Proctor (7 Indian sc.)
G. Boswell (3½ Ariel)
H. Gibson (3½ Bradbury sc.)
R. C. Owen-Wells (3½ Bradbury.
H. C. Mills (3½ Premier)
C. Q. Roberts (3½ Rover)
E. Ware (8 Chater-Lea sc.)
N. O. Soresby (3½ Rudge)
P. W. Tippett (3½ Humber)
H. Patteson (2¾ Douglas)
C. Percival (6 Zenith sc.)
A. T. Tamplin (6 Matchless sc.)
S. Savage (3½ Triumph)
A. C. Robbins (3½ Humber)
H. Johnson (3½ Triumph)
F. W. Ehlvers (3½ Triumph)
H. J. Beal (3 N.S.U.)
J. Chater-Lea (8 Chater-Lea sc.)
A. R. Abbott (3½ Bradbury)
S. T. Tessier (8 Bat sc.)
R. Charlesworth (3½ Zenith)
P. W. Pumphrey (2¾ Arno)
N. C. Dear (2¾ Douglas)
R. Croucher (3½ Kerry-Abingdon)
A. P. Maurice (3½ Premier)
S. J Bellchambers (3½ Rover)
A. V. Deacock (6 N.L.G.)
J. Stevens (2½ A.J.S.)
A. J. Stevens (5 A.J.S. sc.)
B Haddock (2½ A.J.S.)
F. Begley (2¾ Jap)
Hartridge (5-6 F.N.)
J. H. Kerr (3½ F.N.)
C. Bailey (3½ Rudge)
J. V. Robinson (4¼ Ivy Precision sc.)
H Burton (3½ Rudge)

CLUB NEWS.

Mersey M.C.

The club held a highly successful hot-pot supper followed by a "smoker" on Thursday, March 28th. A run to Kendal will be organised for the Easter holidays.

Walthamstow M.C.

The above club held its annual supper at the Essex Hotel, Walthamstow, on the 29th ult. A large muster of members and friends were present.

Burnley A.C.

A meeting was held on Tuesday evening, the 19th ult. The club's first contest is a hill-climb, to be held on April 20th, particulars of which will be given later. The officials for this season are: Messrs. E. Brown (hon. secretary), G. Pickup (hon. treasurer), and J. V. Saunders (assistant hon. sec.)

Surrey M.C.C.

The result of the speed-judging competition, held on the 27th ult., was as follows: 1, G. S. Williams (3½ Arno); 2, F. J. Houghton (3½ Trump-Jap); 3, H. R. Owtram (3½ Triumph). The competitors were timed over an unknown distance of ten miles from Alfold to Horsham.

Middlesbrough and District M.C.C.

In the last issue Mr. Geoffrey W. Liddle was wrongly described as the hon. secretary. He was the hon. press secretary, but has now resigned his position. The present hon. secretary is Mr. G. W. Goult, 29, Borough Road, West Middlesbrough.

Essex M.C.

On the 31st ult. a good attendance was put in for the penalty run to Clacton-on-Sea—a non-stop run of sixty-five miles—and the following qualified for the club medal: A. E. Brassington (6 h.p. Rex sidette), G. L. Fletcher (2¾ h.p. Douglas), C. Pearson (2¾ h.p. Douglas), Miss R. Hammett (2¾ h.p. Douglas), C. Michell (3½ h.p. P. and M. and sidecar), A. E. Uffleman (3½ h.p. Humber), A. M. Richards (3½ h.p. Humber), H. Karslake (3½ h.p. Rover), and B. C. de W. Siffken (2¼ h.p. S.I.A.M.T.).

Fleet M.C.C.

The club held speed trials on Hartford Bridge Flats at 7 a.m. on the 30th ult. The winners were as follow:

Class I. (open).—1, A. A. Longley (5 h.p. Indian); 2, Lieut. Smith (3½ h.p. Singer).

Class II. (touring machines up to 500 c.c.)—1, T. E. Little (2¾ h.p. Douglas); 2, A. Nelson (3½ h.p. Kerry).

On Easter Monday a hill-climb will be held, starting from the Oatsheaf Hotel at 10 a.m.

Woolwich, Plumstead, and District M.C.

The annual hill-climb took place on the 25th ult., at Hog Trough Hill, Brasted, Kent, the run being just over half a mile. Out of twenty-seven entries only seventeen faced the starter. The event was run off on the knock-out principle, viz., each competitor had a preliminary run up the hill and was handicapped on the time he took to climb it. Any competitor exceeding his time by more than five seconds was disqualified. Final won by H. A. Collier, 8 h.p. Matchless (sidecar and passenger), time 59⅖ seconds. In the contest for fastest time between S. Davis (3½ Rudge) and H. Cork (5 T.T. Matchless), H. Cork ultimately won in the time of 43⅖ seconds.

Bedford and District M.C.C.

The reliability run *viâ* Stamford, Uppingham, Kettering, and Rushden took place on the 31st ult. The ease with which the lightweights ascended Rockingham Hill was a revelation to the onlookers. Mrs. Kirkpatrick rode very well, and was leading on points until the last section, when repeated plug trouble put her out of the running. All the singles with one exception ascended Rockingham in style. Results:

Lightweights.—1 (silver medal), C. W. Jamison (2¾ New Hudson), 198 marks; 2, F. Waring (2¾ Enfield); 3, Mrs B. Kirkpatrick (2¾ Douglas).

Single-cylinders.—1 (gold medal), H. J. Woods (F.E. Triumph), 200 marks; 2 (silver medal), W. W. Edwards (T.T. Triumph), 199 marks; 3, R. G. Parker (3½ Bradbury), 198.

Big Twins.—1 (silver medal), E. Auger (5 Peugeot), 198.

Sidecar machines.—1 (silver medal), A. Wilkinson (two-speed Bradbury), 180 marks.

Herts County A.C. (Motor Cycle Section).

On Saturday, the 30th ult., the motor cycle section held a members' hill-climb on Aston Hill, near Tring. Fastest time of the day was accomplished by F. W. Barnes (viz., 45⅖s.) on a 6 h.p. Zenith. Formula results:

DIVISION 1.

Class 1.

1. F. W. Barnes (2¾ Zenith) | 3. F. W. Applebee (2 Centaur
2. W. A. Jacobs (2½ Singer) | 4. W. Atkin (2½ Gradua)

Class 2.

1. F. Applebee (2¾ Centaur) | 2. A. J. Parkes (2¾ Enfield)

Class 3.

1. F. W. Barnes (2¾ Zenith) | 3. G. F. Cooper (3½ Triumph
2. A. J. Dixon (3½ Zenith) |

Class 4.

1. F. W. Barnes (2¾ Zenith) | 3. A. J. Dixon (3½ Zenith)
2. W. A. Jacobs (2½ Singer) |

Class 5.

1. V. Wilberforce (3¾ Zenith) | 3. A. J. Luce (6 Zenith)
2. F. W. Barnes (6 Zenith) | 4. E. A. Colliver (6 Zenith)

Class 6 (on time).

W. H. Elce (Rudge), 50s. | F. W. Barnes (Zenith), 52⅕s.
G. F. Cooper (Triumph), 50⅕s. |

Class 7.

E. A. Colliver (6 Zenith), 51s. | G. Carter (5 Matchless), 51⅕s
V. Wilberforce (3¾ Zenith), 51s. | A. J. Luce (6 Zenith), 51⅖s.

Class 8.—Passenger machines.

1. F. W. Barnes (6 Zenith) | 2. E. G. Attenborough (
Indian)

Class 9.—Any machine (on time).

F. W. Barnes (6 Zenith), 45⅖s.* | G. F. Cooper (Triumph), 49⅕s
K. Yano (5 Bat), 48⅘s. | E. A. Colliver (6 Zenith), 49⅖s

*Fastest time of the day.

Class 10.

F. W. Barnes, 45⅖s.* | G. F. Cooper, 49⅕s.
K. Yano, 48⅘s. |

*Fastest time.

DIVISION 2.

Class 2.

1. V. Wilberforce (3¾ Zenith) | 2. K. Yano (5 Bat)

Class 3 (on time).

S. Yano (Rudge), 48s. | H. C. Worstam (Chater-
H. L. Baige (Rudge), 53s. | Precision), 1m. 2⅕s.
H. Meyer (Triumph), 55⅖s. |



R. A. Bishop, of Oxford, climbing Arms Hill, near Henley on a 6 h.p. Enfield sidecar with passenger. This is the first ascent by a passenger machine.

Club News.—

Hampshire M.C.U.

The opening run will be to Salisbury (White Hart Hotel) to-morrow, the 5th inst.

Batley and District M.C.C.

On the 21st ult. Mr. J. Hazzlewood lectured at headquarters on "Internal Combustion, Total Exhaust, and Variable Compression."

Kildare M.C.C.

Efforts are being made to found a club for motor cyclists in Co. Kildare. All who wish to join should apply to Mr. F. V. Devere, Naas, Co. Kildare.

Crawley M.C.C.

It is proposed to form a motor cycle club with the above title. All who wish to join should apply to Mr. W. Nightingale, jun., Hazeldene, Crawley.

Newcastle and District M.C.

April Competitions.—5th: Rothbury, with surprise competition at Rothbury. Dinner, Queen's Head Hotel, 12.30. 8th (Easter Monday): Kendal, to witness Westmorland Motor Cycle Club hill-climb at Brigsteer Brow. 28th: Team trial (three in a team), Penrith and back.

Essex M.C.

On Friday, the 22nd ult., a supper was given at headquarters to Mr. O. L. Summers, who has for many years been captain of the club, and who is about to depart for Canada. A small wristlet watch was presented to him during the evening as a memento of the club's appreciation of his work amongst them.

Middlesbrough and District M.C.C.

On Friday evening, March 22nd, at headquarters, Corporation Hotel, some thirty-three members assembled to hear a lecture by Mr. S. Stansfield entitled "The Internal Combustion Engine; Some Notes on Actual and Possible Performances." Mr. Geoffrey W. Liddle occupied the chair, and a hearty vote of thanks was accorded Mr. Stansfield, on the motion of Mr. E. Young, supported by Mr. H. Beckwith.

North Staffordshire M.C.C.

The first hill-climb of the season was held on the 23rd ult., at Penny Leasow. Twenty-six entries were received, and in spite of the bad weather there was a fair gathering of spectators. Messrs. Cotterill and Hesp rode well. The fastest time of the day, made by the latter, works out at 38½ m.p.h. Results (Classes I. and II.) on formula:

Class I. (under 350 c.c.): 1, A. Cotterill (2¾ Zenith); 2, Hesp (2½ Premier).

Class II. under (560 c.c.): 1, A. Cotterill (2¾ Zenith); 2, J. A. Prendergast (3½ Rudge).

Fastest time: 1, Hesp (3½ Premier), 46⅘ secs.; 2, J. A. Prendergast (3½ Rudge), 47½ secs.

Woolwich, Plumstead and District M.C.

The Easter tour is to Cheddar, starting on Saturday morning and returning on Monday.

Hunslet M.C.C.

Any motor cyclist wishing to join this club is requested to apply to Mr. G. Megson, Swallow Cycleries, Low Road, Hunslet. The headquarters will be the Swan Hotel. A general meeting will shortly be held.

Cambridgeshire M.C.C.

Members are reminded that the club photograph will be taken to-morrow, the 5th inst. Meet near the Botanic Gardens 9.45 a.m. On that day the club run will be to Luton (lunch) and Hatfield (tea).

The Motor Cycling Club.

The headquarters for Easter will be the Mermaid Hotel, Yeovil. This has been selected as in previous years because it is on the route of the Jarrott Cup Competition. Members will start from the Cricketers' Arms, near Bagshot, at 9 a.m., on Friday, April 5th, and luncheon will be taken at the Red Lion Hotel, Salisbury.

Western District M.C. (London).

The club run to Reigate was a great success. After dinner in Reigate some members explored the famous caves. On the way home Pebblecombe Hill was visited, and proved too steep for some of the machines.

Lincolnshire A.C. (M.C. Section.)

A hill-climb will be held at Station Hill, Leadenham, on Easter Monday. There will be four classes: No. 1, under 400 c.c.; No. 2, under 600 c.c.; No. 3, over 600 c.c.; and No. 4, variable gear. Results will be calculated on the formula, $\frac{C \times t^{1.5}}{W}$. For all information apply to the hon. secretary, Mr. W. J. S. Bament, National Provincial Bank, Lincoln. The membership of the club has now reached one hundred.

Surrey M.C.C.

The following fixtures for April have been arranged:

April 6-8th (Saturday to Monday).—Easter tour to the New Forest and to Weymouth.

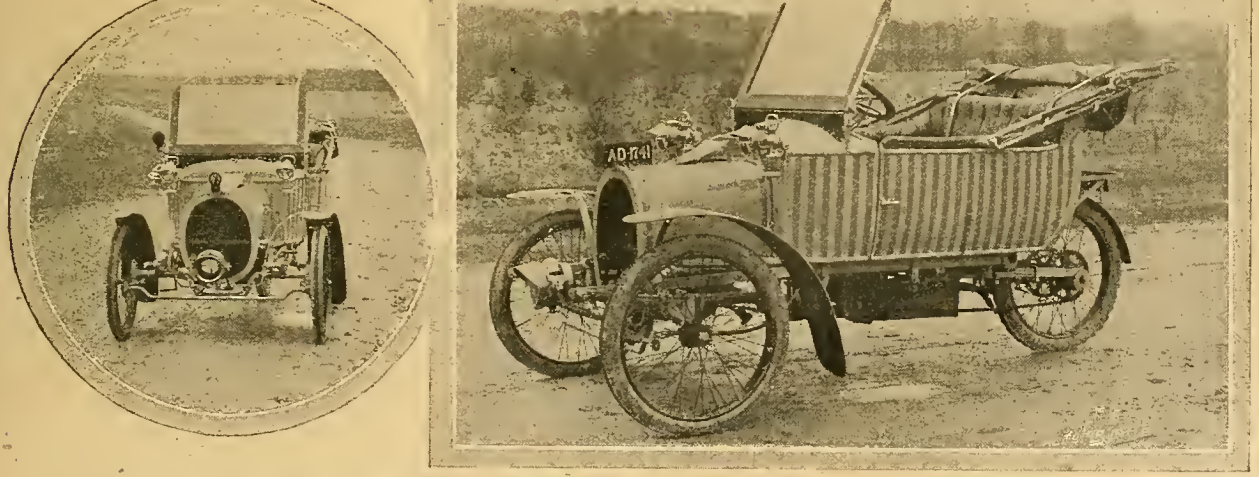
April 20th (Saturday).—Tour of local hill-climbs starting from headquarters at 3.30.

April 24th (Wednesday).—Members' hill-climb. Rules and entry forms will be issued at an early date.

Harrogate and District M.C.C.

The first event of the season will be the opening run to-morrow (Friday) to Richmond. On Easter Saturday the Harrogate and Herts County open hill-climb will be held at Leathley Bank.

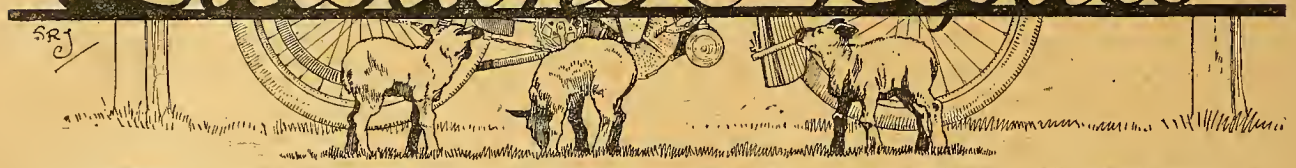
On Easter Monday the inter-club hill-climb between Harrogate and Scarborough will take place at Staxton, near Scarborough.



A NEW THREE-WHEELED CYCLECAR.

The two-seater illustrated is an 8 h.p. Lambert, with three-speed gear and sociable seats. It is built by Lambert and Son, of Castle Street, Thetford.

Questions & Replies



A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Easy Starting.

Can you inform me if an Amac decompressor would cause easier starting on a big twin (1911)? Would each cylinder require one? —J.E.T.

(1.) The device in question would make the machine start more easily. (2.) Yes, you would require one in each cylinder.

Mold to Cockermouth.

I should esteem it a favour if you would give me the best route from Mold (Flintshire) to Cockermouth (Cumberland), with distances. If you direct me through Liverpool can I avoid going through the thick of the traffic?—W.L.

Your best route would be as follows: Chester, Frodsham, Runcorn, across the Transporter Bridge to Widnes, then go through Rainhill, Rainford, Ormskirk, Rufford, Longtown to Preston. This will avoid most of the bad traffic, though, of course, it is not an ideal route. However, it is better than going through Liverpool, Warrington, or Wigan. From Preston continue through Garstang, Lancaster, Kendal, Ambleside, Keswick, to Cockermouth. The distance is nearly 150 miles.

Use of Different Gears.

I have an 8 h.p. Jap engine and Chater-Lea sidecar complete, the makers' No. 7, and have had no trouble with it. What I want to know is which is the best gear to drive on downhill, top, second, or low, also should the spark be retarded or advanced? (2) When going through traffic on low gear, if the spark is fully advanced it is rather noisy, but if I retard it it quietens the engine. I want to know whether it injures the mechanism in any way. (3.) Does it affect the petrol consumption at all, or does the high, low, or medium speed, use about the same quantity?—P.M.H.

(1.) It depends upon the hill. If you are going down a long hill of which you can comfortably see the bottom, you can let the engine run down on top speed; if the hill is fairly steep, use the second speed; if the hill is precipitous, use the low speed. This saves the brakes, and it is advisable to run down with the switch off (2.) You may certainly retard the spark somewhat in traffic. It does not injure the engine in the slightest degree, but, of course, to drive habitually with the spark retarded would tend to overheating and a large consumption of petrol. (3.) The higher the gear the less petrol is used.

Valve and Magneto Timing.

I recently purchased a 1912 machine (T.T. engine). It runs badly, and overheats fearfully, but has covered four hundred miles, and should be doing well. With magneto fully advanced, the spark occurs just as the piston reaches the top of the compression stroke. The exhaust valve opens when the piston is fully 1¾in. from the bottom of firing stroke, but closes when the piston is just on the top of exhaust stroke. Surely this must be wrong. The inlet valve opens on the top, but does not close until the piston has come about an inch or so up on the compression stroke. It seems to me to be a case of fresh cams. What can I do to improve matters?—C.B.R.

The timing of your engine is certainly very remarkable. The magneto timing is quite sufficient alone to cause the trouble. The spark should occur at the top of the compression stroke, when the magneto is retarded, not when fully advanced. We presume you are not confusing advance and retard. To retard, you must move the ring carrying the segment in the same direction as the armature revolves. The magneto can easily be retimed, and we should advise you to do this first, and let us know the result. The valve timing is very unusual, too, but more will be known about this interesting subject shortly. You will find diagrams of the usual settings on page 256 of our issue of March 7th, where you will see that the exhaust opens 45° before the bottom of the firing stroke; this in your case would be half an inch. If the valve timing has to be altered, new cams will be required.



C. T. Newsome, who has been practising on Brooklands track on a 3½ h.p. T.T. Rover. He attained a speed of a mile a minute with apparent ease.

Kensington to Wigton (Cumberland).

What is the best route from Kensington to Wigton (Cumberland)?—R.D.

We should recommend the following routes: A.—Kensington, Regent's Park, Hatfield, Stevenage, Baldock, Biggleswade, Stilton, Stamford, Grantham, Newark, Tuxford, Retford, Doncaster, Ferrybridge, Aberford, Harewood, Otley, Skipton, Settle, Ingleton, Kirkby Lonsdale, Kendal, Windermere, Ambleside, Grasmere, Dunmail Raise (fairly steep), Thirlmere, Keswick, Bassenthwaite Lake, Bothel, to Wigton. B.—Follow A almost to Harewood, where keep straight on through Wetherby, Boroughbridge, Scotch Corner, Barnard Castle, Middleton-in-Teesdale, over the Pennines (rough and steep) to Alston, Brampton, Carlisle, and Wigton. Personally we should prefer A as being the more picturesque.

4½ h.p. Single and Sidecar.

I am thinking of buying a new machine and sidecar. As a constant reader of your valuable paper, I gather that you favour a twin-cylinder for sidecar work, but I am afraid of the cost of upkeep of a twin and greater complications. I shall be much obliged if you will give me your opinion on the following points: (1.) Would a 4½ h.p. single cylinder with a three-speed gear and clutch be satisfactory for sidecar use? (2.) Would this go slowly in traffic on the low gear? (3.) Do you think the Armstrong three-speed gear satisfactory and unlikely to get out of order if not tampered with? (4.) Would a 4½ h.p. single-cylinder be very noisy if fitted with an efficient silencer? (5.) Number of miles per gallon of petrol for a 4½ h.p. single.—A.W.F.

(1 and 2.) A 4½ h.p. with three-speed gear would do well with a sidecar, and you would have no difficulty about controlling in traffic. (3.) The special sidecar gear is satisfactory, and would stand this horse power. (4.) The machine would not be very noisy if fitted with an efficient silencer. (5.) You could hope to do about seventy miles to the gallon.

"YOU RUN NO RISK."

THE "J.P. 3,000" MOTOR CYCLE COVER FOR LONG DISTANCE TOURS.



The Improved

"ACME"

MOTOR CYCLIST'S COAT.

In Grey or Brown Frieze, lined throughout, fitted with our new Multi Collar and Duplex Wind Cuffs.

PIGGOTT'S PRICE,

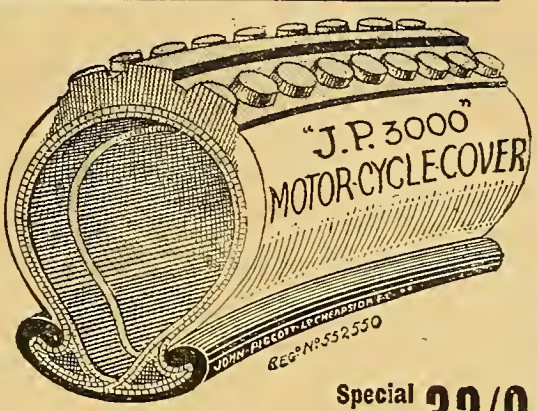
25/-

Plain Grey and Dark Fancy Frieze, and our new Multi Collar, which enables it to be worn in the three positions shown; also fitted with Duplex Wind Cuffs complete.

PIGGOTT'S PRICE,

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Sizes in Stock, 36 to 44 chest.



SIZE 26 x 2¼.

EVERY TYRE GUARANTEED FOR "3,000 MILES"

Special Price **32/9**

SEND FOR SECTION POST FREE.

JOHN PIGGOTT, Ltd., 117-118, Cheapside, & Milk St., LONDON, E.C.

J. B. JACQUEMIN BROS.

"COLLAPSABLE" "CHLOROPHYLLE" EYE PROTECTORS & GOGGLES (OPTICALLY CORRECT).

(Aitcheson's Patent) (Regd.)

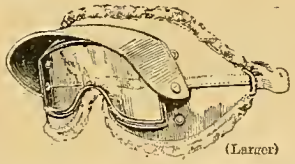
Positively protect eyesight, nullify effect of sun glare, glaring motor lights, etc. Can be worn over eyeglasses. (Vide "The Motor Cycle.")
"CHLOROPHYLLE" (Regd.) LENSES (NATURAL TINT) GIVE CLEAR DEFINITION.



(Open)



(Closed)



(Larger)

ABSOLUTELY INDISPENSABLE TO MOTOR CYCLISTS, AVIATORS, ETC. PRICES from—4/9 "CHLOROPHYLLE" LENSES, 3/6 PLAIN.
New model goggles now ready, fitted with "Chlorophylle" glass and **detachable** rain and sun shield. Price 7/6 (see illustration).
Write and send remittance (postage 2d.) to **CHAPPELL & CO., 11, HATTON GARDEN, LONDON, E.C.**

Two Useful Books for Motor Cyclists

"MOTOR CYCLES AND HOW TO MANAGE THEM."

Fifteenth Edition now on sale.

This book has long been recognized as the standard handbook of the modern motor cycle.

Net 1/-, post free 1/2.

Obtainable from leading Booksellers and Railway Bookstalls, or direct, with remittance, from Iliffe and Sons Ltd., 20, Tudor St., London, E.C.

"'THE MOTOR CYCLE' ROUTE BOOK."

First Edition now on sale.

Specially compiled for users of the highway in the United Kingdom. Route finding is made both instructive and entertaining. The book contains the maximum amount of information in the smallest possible space.

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HUTCHINSON

Motor Cycle TYRES

"Distinct from all others."

RUBBER NON-SKID.

		Covers.	Tubes joined.
"Standard" (Lightweight) For motor cycles up to 1¾ h.p. and sidecar wheels.	24 x 1¾	17/9	6/3
	24 x 2	18/3	7/-
	26 x 1¾	19/3	7/3
	26 x 2	20/6	8/3
"Superior" (Lightweight) for motor cycles up to 1¾ h.p.	24 x 1¾	20/3	6/3
	24 x 2	21/-	7/-
	26 x 1¾	21/9	7/3
	26 x 2	23/-	8/3

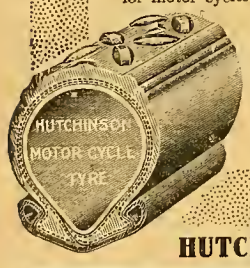
Ribbed pattern 2/3 less in each case.

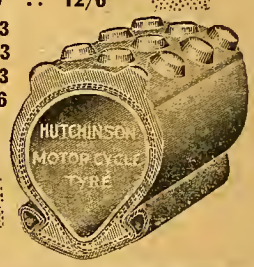
INSIST ON HAVING HUTCHINSON TYRES.

RUBBER STUDDED.

		Covers	Tubes joined.
"Brooklands" for motor cycles up to 2¾ h.p.	24 x 2	23/9	7/-
	26 x 2	25/6	8/3
	26 x 2¼	26/6	10/3
"Tourist Trophy" for motor cycles up to 3½ h.p.	26 x 2	35/-	8/3
	26 x 2¼	36/-	10/3
	26 x 2½	37/-	11/3
	28 x 2½	38/9	12/6
"Passenger" For motor cycles of 5 h.p. and upwards.	26 x 2¼	46/-	10/3
	26 x 2½	47/6	11/3
	26 x 3	50/3	13/3
	28 x 2½	50/0	12/6

28 x 2½ Covers are made to fit 28 x 2¼ Indian rims. Ribbed pattern 2/3 less in each case





HUTCHINSON TYRE CO., 70, BASINGHALL STREET, LONDON, E.C.

AT BROOKLANDS

On Wednesday, March 27th, 1912—All the winning machines (belt-driven) were fitted with

LYCETT'S LYSO BELTS

Including the following:

SIDECAR SCRATCH RACE.
1st. F. W. Barnes on a Zenith.
3rd. S. T. Tessier on a Bat-Jap.

100 MILES RACE.
Class C, with Sidecar.
1st. F. W. Barnes, Zenith.
2nd. J. S. Bashall, Bat.

100 MILES RACE. Class B.
Lightweight Class.
1st. S. Wright, Humber.
2nd. A. E. Woodman, Humber.
3rd. A. Bashall, Humber.

Class C. 3½ h.p. S.C.
1st. E. B. Ware, Rudge,
3rd. W. S. Guiver, Rudge.
4th. S. D. Timpson, Rudge.

THE DAY RECORDS.

F. W. Barnes on a Zenith with sidecar.

ONE HOUR RECORD—49 miles, 1,283 yds.
FIFTY MILES—One hour, 18 secs.
TWO HOUR RECORD—96 miles, 1,594 yds.
100 MILES—2 hours, 3 mins., 42 secs.

TO WIN COMPETITIONS YOU MUST USE A LYSO—the pliable and power giving belt. Write for particulars. All the above used LYSOS.

LYCETT, THE SADDLERIES, BIRMINGHAM.

When to have Engine Re-bushed.

I have now got my 3½ h.p. Triumph engine down for overhauling and find that both ends of the connecting rod are a very little bit slack. Could you inform me what should be the maximum amount of play allowed in these bearings before having them rebushed? Also, if I send the rod to the makers to be rebushed, will it be necessary to send the crank and gudgeon pins, or will they replace with standard bushes?—E.L.A.

It is about time to rebush the engine when an appreciably audible knock is heard. If you send the connecting rod to the makers, send them also the crank and gudgeon pin. The standard bushes might be too large, as there might be a slight amount of wear in the old parts.

Repairing Cracked Valve Seatings.

I notice in *The Motor Cycle* advertisements that cracked exhaust valve seatings can be repaired by the West London Welding Co., Essex Place, Chiswick. I should be very much obliged to you if you would let me know if it is quite satisfactory, as I do not want to throw my money away on a useless job?—P.H.

There is no reason why the firm in question could not do the job satisfactorily, provided, of course, it can be done. Whether or not this is the case, it is impossible for us to tell without actually seeing the cylinder. What you had better do is to send the cylinder to the firm mentioned above or describe the breakage to them and get them to give you an estimate for this repair. If they cannot repair it they will tell you.

Two Routes.

(1.) Please give me the best route from Worthing to Leckhampton, Gloucestershire, also mileage? I should like to avoid all bad hills, as I shall take a heavy passenger in sidecar. My machine is a 3½ h.p. two-speed Bradbury. (2.) Also best route and mileage from Worthing to Callington, Cornwall. (3.) How far ought I to go the first day (from Worthing to Callington)?—A.C.

We have pleasure in giving you the following route: Worthing, Arundel, Chichester, Havant, Fareham, Bishop Waltham, Winchester, Andover, Ludgershall, Marlborough, Swindon, Cricklade, Cirencester, thence follow the Cheltenham Road to Leckhampton. The distance is approximately 140 miles. We do not think there is anything on this road to stop a 3½ h.p. Bradbury and sidecar. From Worthing to Callington your best route would be, as before, to Fareham, then on through Botley, skirting Southampton, Totton, Cadnam, Wimborne, Dorchester, Bridport, Lyme Regis, Colyford, Exeter, Crediton, Okehampton, Tavistock to Callington. The distance is approximately 212 miles. A shorter and prettier road is *viâ* Moreton Hampstead and Two Bridges, but this is very hilly. How far you ought to go on the first day depends entirely on the capabilities of yourself and your machine. If you propose to take two days, we should recommend you to do about 140 miles on the first day.

St. Leonards-on-Sea to Leicester.

Please let me know the nearest and best way to get to Leicester from St. Leonards-on-Sea, and also the distance. I have a 7-9 h.p. twin Chater-Jap and sidecar, which will take any hill.—F.P.

Your best route would be as follows: St. Leonards, Pevensey, Lewes, Ditchling, Partridge Green, West Grinstead, Billingshurst, Chiddingfold, Milford, Elstead, Farnham, Odiham, Reading, Streatley, Wallingford, Oxford, Banbury, Daventry, along Watling Street till you meet the signposts directing you to Lutterworth, and go through Lutterworth to Leicester. The distance is nearly 200 miles.

The Tax in Ireland.

There is a widespread idea prevalent here that the tax on motor cycles of £1 per year is not legally enforceable, as the Act under which the tax is payable does not apply to Ireland. A number of motorists state that they do not intend to pay any tax, and will let the authorities take action if they choose so to do. I should be glad if you would please put the matter before your legal adviser, and answer through the columns of *The Motor Cycle*, as it is of interest to motor cyclists in Ireland. —E.D.W. (Co. Antrim).

The Finance Act of 1910 imposing the fresh duties on motor cars and motor cycles expressly provided that the rates specified should be charged throughout the United Kingdom. Residents in Ireland, therefore, are in the same position as those living in England, and the duty must be paid. We have read the provisions in the Union with Ireland Act, 1800, but cannot find that the Act recently passed is contrary to that, and even if it were, a subsequent Act of Parliament takes precedence over a prior one if they are contradictory.

Opinion of the Humber Twin.

Please give me your opinion of the 2¾ h.p. twin Humber lightweight motor cycle. I am offered this Humber from stock by a firm of dealers, so wrote them for particulars; also wrote the Humber Co. One thing I asked each was the make of magneto. The dealers reply the small 1911 Bosch, the makers say Eisemann ordinary pattern. If the machine is fitted with the small Bosch, would this be as efficient and have as long a life as the larger types? If Eisemann, is this, in your opinion, as good as the Bosch? With regard to the Armstrong three-speed fitted, would you advise this as being as good as any other hub or counter-shaft gear? The gears Humber Co. give are 3¾, 5, 7¼ to 1. I presume these could be lowered to, say, 5, 7, 10 to 1 by opening the adjustable pulley?—F.W.E.

It does not matter if the machine is fitted with an Eisemann or Bosch magneto; both are equally good. Originally a Bosch magneto was fitted, but Eisemanns are being used at present. We have a very high opinion of the machine, and the gear is excellent in every respect. You could not possibly do better. The gear ratios, of course, could be raised or lowered by altering the adjustable pulley.

EXPERIENCES WANTED.

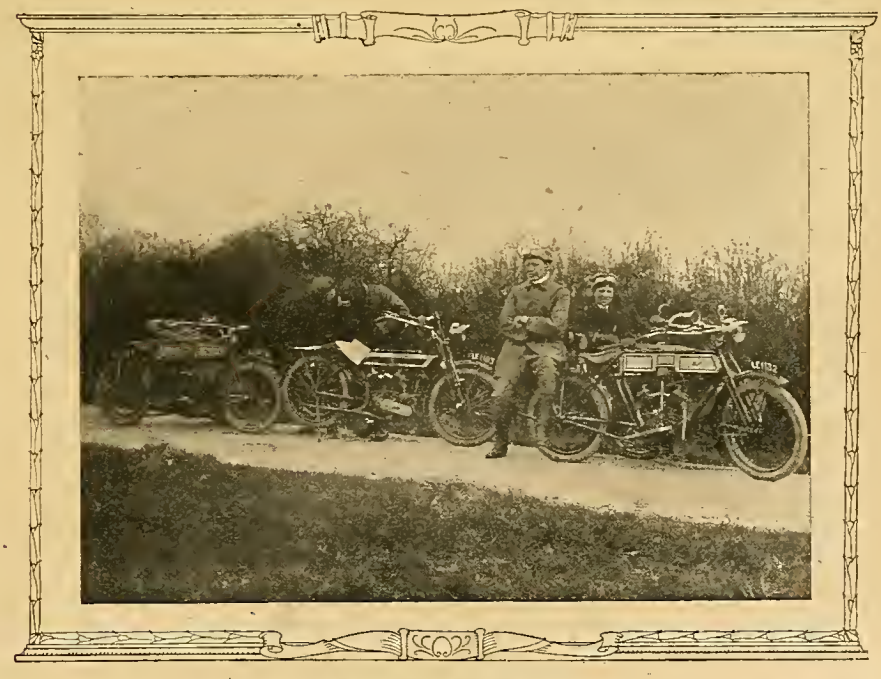
Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"A.R." (Stoke Newington).—Farrar sidecars.

"M.H." (Lincoln).—6 h.p. Bat-Jap and 6 h.p. Zenith-Gradua.

"T.E.L." (Uppingham).—3½ h.p. Rudge with sidecar.

"A.K." (Bristol).—2¾ h.p. Humber with Armstrong three-speed gear.

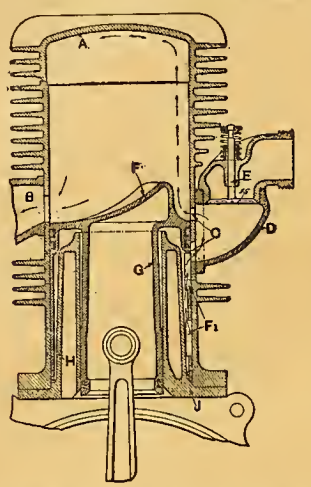


STUDYING THE MAP.

A few members of the Brockley Motor Club on the road between Pluckley and Tenterden. We are interested to observe from the photograph that all three twin-cylinder machines depicted are equipped with car tyres—a sure sign of long riding experience.

A Two-stroke Engine.

In this engine compression of the ingoing gas is not effected in the crank chamber as usual, but in a chamber specially provided for this purpose, the working cylinder A formed with an exhaust port B and inlet ports C, the latter being arranged in a chamber D provided with a non-return valve E. The piston F has inlet ports F^1, and is formed with a projection G, adapted to fit within a sleeve H, carried on a base J bolted to the crank case. This sleeve H is formed hollow, and has a clearance between its outer periphery and the cylinder walls to allow of the passage of the piston F. On the up stroke mixture is drawn through the valve E and

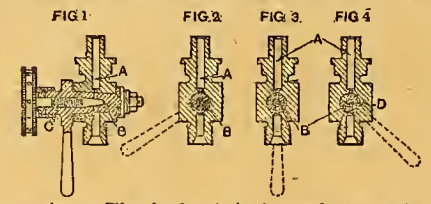




ports C and F^1 into the annular space beneath the piston. On the next firing stroke this mixture is compressed. Near the lower end of its travel the piston uncovers the exhaust port B, and also allows the gas beneath it to pass *viâ* the ports F^1 and C from the annular space into the working cylinder A when further compression and firing take place.—C. T. B. Sangster, No. 8,878, 1911.

A Three-way Oil Tap.

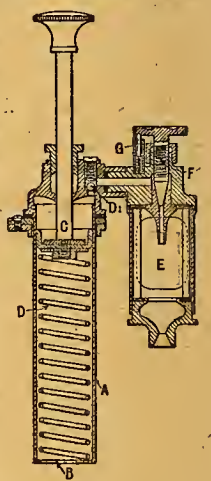
The sectional views illustrate a three-way tap to be used with the Best and Lloyd oil pump, its object being to enable a charge of oil to be pumped direct to the engine. The body A is formed to receive a plug B, provided with an adjustment nipple C, by which the orifice through the plug B is regulated. The plug has three positions, illustrated respectively in figs. 2, 3, and 4, and corresponding to the "off" position and normal position as



regards figs. 2 and 3 respectively. In fig. 4 the plug B is shown in a position in which a groove D provides an unobstructed passage from the inlet to the outlet side of the tap, enabling a charge of oil to be pumped to the engine direct, instead of dripping through the usual duct shown in fig. 3.—Best and Lloyd and R. H. Carpmael, No. 14,909, 1911.

A Best and Lloyd Oil Pump.

This is a modified construction of the Best and Lloyd automatic pump, with which is combined a sight-feed device. Sunk in the oil-tank is the pump barrel A, having a gauze-protected open end B. The plunger C is raised by the spring D, and delivers the oil past the non-return valve D^1 to a sight feed chamber E, provided with a regulating valve F, accidental movement of which is provided by a spring detent G. With this construction the plunger C is depressed against the action of the spring, for filling, which is more convenient than the reverse, and the delivery outlet of the pump being at the top affords a convenient position for the regulating valve F and sight feed tube E.—Best and Lloyd, Ltd., and R. H. Carpmael, No. 17,295, 1911.



A Severe Test.

Hugh Gibson used Dunlop tyres on all wheels when he ascended Honister Pass on a Bradbury. He has since advised the makers that the rubber studs are intact, and there is not a cut in any of the covers.

Entirely Devoted to Motor Cyclists.

The Colonnade Motor Cycle Exchange, Colonnade Road, Eastbourne, have just opened new premises, which will be devoted entirely to motor cyclists.

A new garage, solely for motor cyclists, is being erected by Mr. Fred Flanders, Regent Road, Great Yarmouth. Here, not only accommodation for machines will be provided, but adjoining the premises will be rooms where riders may leave their overalls, and wash, etc.

Trade Announcements.

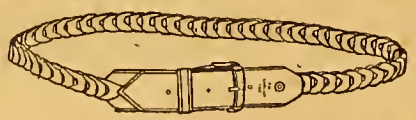
We are informed by Crescent Motors, Ltd., Walsall, that the firm has been reconstructed as a limited liability company, expressly for the manufacture of cyclecars. The newly constructed firm is now engaged in perfecting a new model Crescent runabout, of which particulars will be published shortly.

Harry Martin, the well-known rider and record holder, is, we understand, about to extend his business at 137, Cherry Orchard Road, East Croydon, S.E. He has taken into partnership Sydney Axford, of the Purley and District M.C.C., who is a practical motor cyclist and a keen competition rider. The firm intends to build machines to suit the exact requirements of customers. A speciality will be personal supervision of the tuning of Martin-Jap machines.



A.K. Accessories.

A new A.K. speciality is a leather chain belt, which is stretchless, and intended for wearing round the waist over a mackintosh. Users of loosely fitting mackintoshes will have noticed the tendency for the coats to be blown out, causing them to offer considerable resistance. With flat belts one notices a binding tendency, but with the A.K. leather chain belt this is done away with, as it gives under the least strain.



By the way, the A.K. throat protector has been much improved by the addition of a neck shaped to ensure accurate fit. We are using one of the new patterns, and can testify to its efficiency and comfort. The makers' address is: A.K. Manufacturing Co., 35, Swaine Street, Bradford.

Magneto Distribution.

The City Ignition Co., 274a, Goswell Road, E.C., have been appointed sole distributing agents for the British Empire for the Fein and N.F. magnetos.

Hill-climbing on a Lightweight.

J. S. Holroyd and his Motosacoche were in evidence at Bristol a few days ago, and in a letter to the makers, Mr. Haskins, the local agent, says, referring to Mr. Holroyd's performance on three of the local test hills: "I have been with him to three of our local test hills, which I never for a minute anticipated he would climb without pedalling, but the way the little machine gets over a 1 in 5 gradient is simply marvellous."

April Number of "The Arena."

The second issue of *The Arena* (the new monthly magazine for Public School and University men) has just been published. It contains many features that will appeal to those of our readers who are, or have been, in any way connected with one or other of the Public Schools or Universities. As in the case of No. 1, amateur sports take a leading place, and there are special articles on the Corinthians Football Club (supplemented by a coloured cartoon of the captain, Mr. S. H. Day). There are also very interesting articles on Oxford, Cambridge, and Rugby, besides numerous attractive illustrations in the issue. *The Arena* is published by the proprietors of *The Motor Cycle*, and the price is 1s., or 1s. 4d. by post.

B.M.C.R.C.

THREE EVENTS

THREE VICTORIES

ALL ON

WAKEFIELD "CASTROL"

Three-lap sidecar scratch race won by F.W. Barnes.
Class E (sidecar) won by F. W. Barnes.
The new-comers' (cycle-car) race won by H. Martin.

ALL EXCLUSIVELY USED "CASTROL."

C. C. WAKEFIELD & CO.,
27, Cannon St., London, E.C.

C.B.C.



The happy Motor Cyclist

is he whose tyres are fitted with Atlas Puncture Proof Inner Cases.

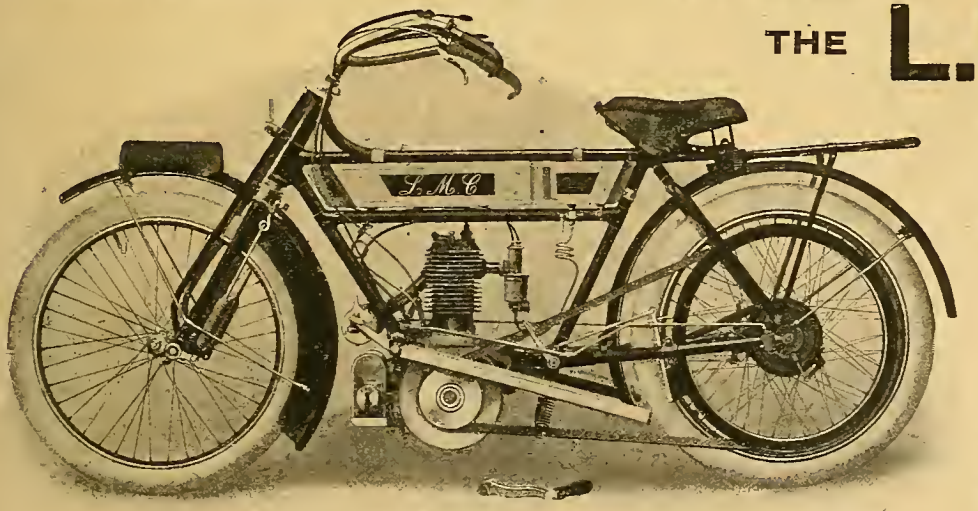
No worry over Punctures—it absolutely prevents them. You can ride even on a burst tyre.

Send at once for Booklet and copies of testimonials.

ATLAS NON-PUNCTURE INNER CASE SYNDICATE, LTD., 124, High St., Kensington, London, W. Telephone (2 lines) 4634 and 4635 Western.

Wholesale Agents:
MANCHESTER—J. E. Feay, 28, Jackson's Row, Deansgate.
SCOTLAND—J. Thomson & Son, Lady Lawson Street, Edinburgh.
IRELAND—H. Whitehead & Co., 9, May Street, Belfast.

THE L.M.C.



3½ h.p. Touring L.M.C. Model. Note the Low Saddle Position.

New 4 h.p. Two-speed Model
L.M.C. Engine, 89 x 92, **IDEAL** for Sidecar. Handle Starting, Sprung Footboard.

NON-STOP. FULL MARKS Sutton Coldfield A.C. Reliability Trial,
17th February, 1912.
104 starters, but only 24 made Non-Stop Runs and secured full marks.

3½ h.p. Touring Model.
Variable Gear, Free Engine, Footboard Starting Device.

"JUST PERFECT" for solo touring. Low frame. Last mail advises latest Colonial success.

South Canterbury M.C.C. Hill-Climb, Timaru, N.Z.,
28th November, 1911.
J. CLYMA, 3½ h.p. L.M.C. Touring Class. **FASTEST TIME** and third on formula.

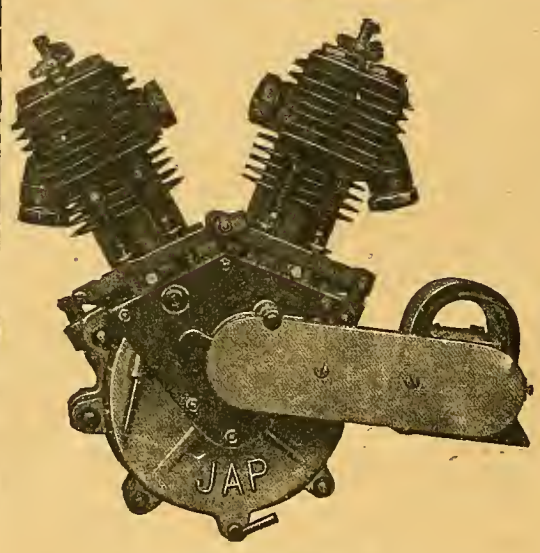
The L.M.C. for Reliability. The L.M.C. for Speed.

See 1912 complete Catalogue (free on application) for Record of Successes in all parts of the World.

3½ h.p. Touring Model from **£48** L.M.C. Free Engine Sets, **73/6** Spares for "Original" Quadrants.

Makers: THE LLOYD MOTOR ENGINEERING CO., Ltd.,
132, Monument Road, BIRMINGHAM.

The All "J.A.P." MOTORS. British.



J.A.P. Twin Lightweight, 60 × 76.

J.A.P. Motors commence the season in their usual form.

The Essex M.C. Open Hill Climb.

SIDECAR EVENT.

J.A.P. 1st. F. W. Barnes on Zenith Gradua.

LIGHTWEIGHT CLASS.

J.A.P. 1st. P. Weatherilt on Zenith Gradua.

750 C.C. CLASS.

J.A.P. 1st. F. W. Barnes on Zenith Gradua.

Honister Pass was climbed by Mr. C. R. Collier on a Matchless J.A.P., carrying two passengers.

J. A. PRESTWICH & Co., Northumberland Park, Tottenham, London, N.
Telephone—1936 (2 lines).

The "MILLENNIUM" TWO-SPEED HUB

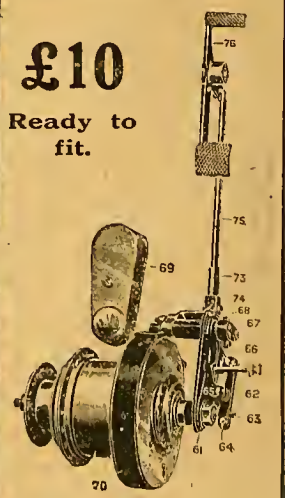
L & E

Doubles the efficiency of any machine.

The "Millennium" is without doubt the finest device of its kind, besides being, we believe, the lightest and strongest on the market. It gives High Gear, Low Gear, and Free Engine, with unimpaired efficiency on high gear. Makes the control of a machine equal to that of a motor car.

Enables you to start from the saddle at stand-still. The gear reduction is 55%. Centrally built, operated by only one foot lever. Dust and water proof. Indispensable for low power and sidecar machines.

£10
Ready to fit.



Can be fitted to almost any machine without spoiling the enamel.

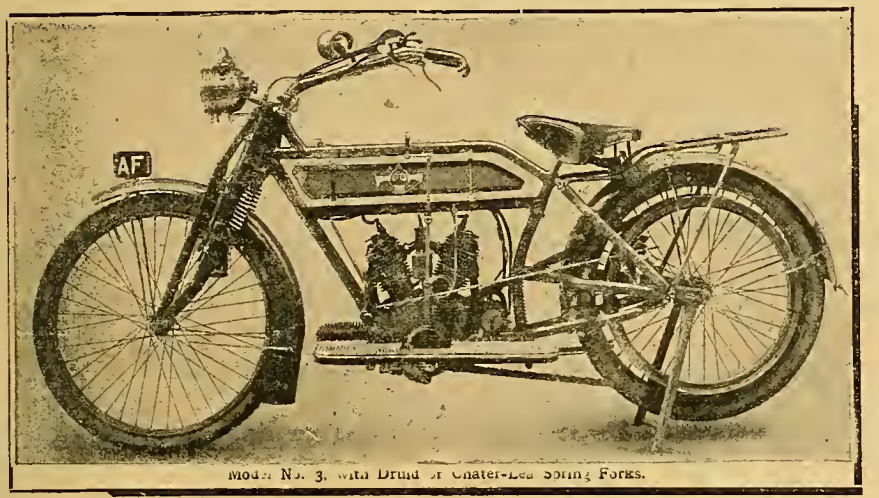
Write for fully descriptive literature free.

LAKE & ELLIOT, LIMITED.
Makers of "Millennium" Tools and Accessories for Motor Cars, Motor Cycles, and Cycles,
ALBION WKS., BRAINTREE, ESSEX.

London Showrooms:
14a, Great Marlborough Street : : : W.

If you intend buying a motor cycle

come and inspect this one first. You will save yourself a lot of time and trouble, because you will buy it at sight if you are a judge of sound engineering construction.



Model No. 3, with Druid or Chater-Lea Spring Forks.

Model No. 3—3½ h.p. J.A.P. Engine.

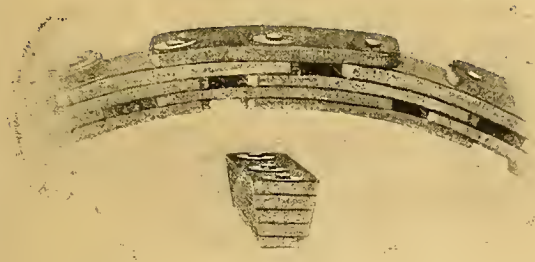
A few features:

Vibrationless.
Free from fads.
Runs as smooth as silk, and at £55 is the best value on the market.

Fitted with N.S.U. two-speed gear, £7 7s. extra.

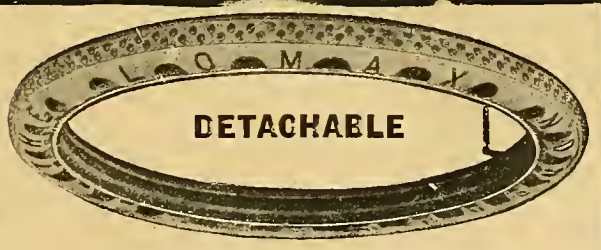
We shall be pleased to send further particulars.

SEALE & de BECKER, LTD.,
162a, Gt. Portland St., London, W.
Telegrams—"Brennabor, London."
Telephone—Mayfair 4294.
Garage and Repair Shops:
97, 98, 99, Belsover St., London, W.



LOMAX LEATHER BELTS.

Very strong and flexible. Impervious to wet. Easily kept in order. No fastener required. Best value obtainable.
⅝in., **1/-**; ¾in., **1/1**; ⅞in., **1/2**; 1in., **1/4** per foot.



If you would be free from puncture and side slip fit a

LOMAX NON-SKID BAND

Over your old cover. It will save you money and trouble. All sizes, **22/6** each, less 5 % cash with order.

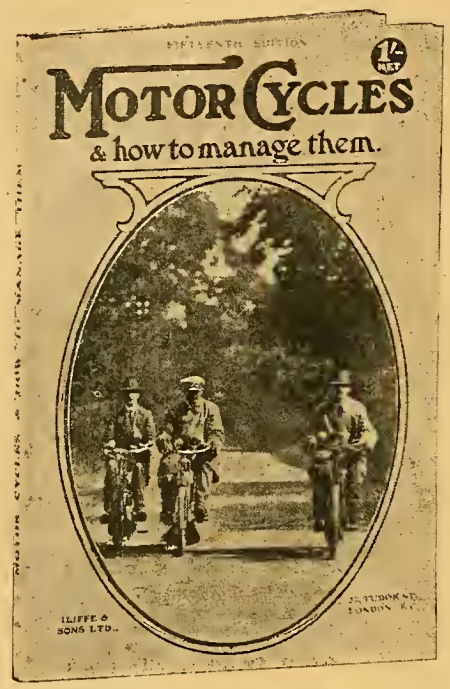
THE LOMAX TYRE COMPANY (Dept. Y), WILLIAM STREET, BIRMINGHAM.

"HINTS AND TIPS FOR MOTOR CYCLISTS."

Third Edition. *Revised and brought up to date.* *Nearly 400 Hints and Tips.*

Price **1/-** From Iliffe & Sons Ltd., 20, Tudor Street, London, E.C., and all Booksellers. By Post **1/2**

NEW EDITION NOW READY.



The FIRST and BEST book on the Motor Cycle.

MOTOR CYCLES & how to manage them.

(FIFTEENTH EDITION.)

Entirely Revised by the Staff of "The Motor Cycle."

Commencing with advice on the choice and purchase of a machine, this book tells how the motor works, and how its mechanism may be understood and mastered. It also deals with every conceivable point in the care, management, and running of machines of all types.
The New Edition gives details of all principal improvements in 1912 models, and contains a large number of explanatory drawings and a copious index.

A Reliable Guide to the Beginner and a helpful Companion to the more advanced rider.

Price 1/- net. **By post 1/3.**

OBTAINABLE FROM

ILIFFE & SONS Ltd., 20, Tudor Street, London, E.C.

AND ALL BOOKSELLERS.

1912 Motor Cycle Insurance Policies.

THE undermentioned Policies, issued by "The Autocar" Insurance Department, cover

(1) **Unlimited Third Party Claims and all Law Costs.**
(2) **Damage to Cycle by Accidental and Malicious Means.**
(3) **Fire.** (4) **Burglary and Thefts.**
(5) **Transit by Road, Rail, Sea, or Inland Waterway.**

THE MOTOR UNION Insurance Co.'s Policy

The A.A. & M.U. Policy, including Membership

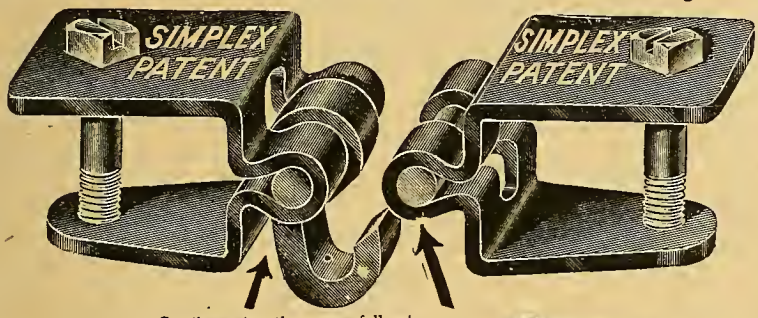
The A.C.U. Policy, including Touring Membership.

H. P.	VALUE.	PREMIUM.
Not exceeding	UP TO	
3	£40	£2 3 6
4	£50	£2 11 3
3	£40	£2 13 0
4	£50	£3 0 6
$2\frac{3}{4}$	£40	£1 17 6
$3\frac{1}{2}$	£50	£2 12 6

Full particulars of the above, and also Policies for other H.P.'s and Values, can be obtained on application to—

THE MANAGER—
"The Autocar" Insurance Dept., Coventry.

"SIMPLEX IMPROVED FASTENER,"
hitherto known as "The Stanley Detachable Fastener."



See these pins, they never fall out.

YOU RUN NO RISK. THIS FASTENER IS GUARANTEED.

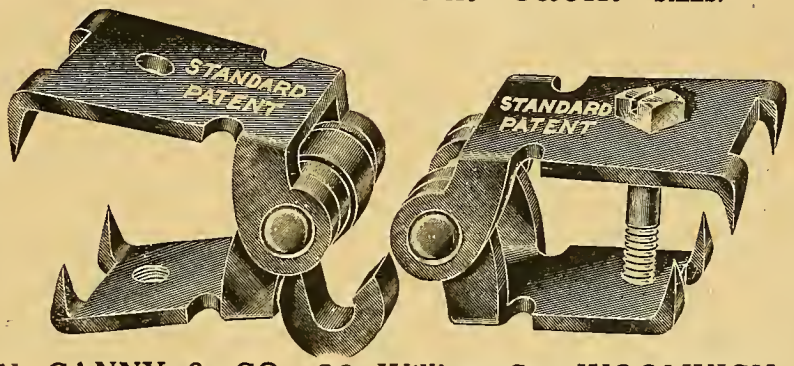
If you're satisfied, tell your friends; if not, then tell us.

6d. each. ALL SIZES.

"STANDARD"
HINGED-HOOK DETACHABLE
BELT FASTENER.

Ride with an easy mind —you can if use this HINGED FASTENER.

1/= each. ALL SIZES.



SOLE PATENTEES AND MANUFACTURERS:— HERWIN, CANNY & CO., 36, William St., WOOLWICH.

"MARTIN-JAP" MOTOR CYCLES
for SPEED and RELIABILITY.

Arrangements have now been completed whereby prompt delivery of these world-famous machines can be given. There is not sufficient space in this advertisement to detail the various records, etc., standing to the credit of these motor cycles—indeed, it is scarcely necessary, as the name of Harry Martin is world-famous. Enough if we state that over **250 Firsts** and over **200 World's Records** have been secured by the Martin-Jap.

AN IMPORTANT POINT.

Every machine is tested and personally supervised during construction by Mr. Harry Martin, **and no machine will leave the works until it has perfectly fulfilled the stringent test to which it will be subjected.** That the Martin-Jap is the most efficient machine made is no idle boast. This is proved by the consistent Record of Successes in all Open Competitions. In 1911 the Martin-Jap competed in **20 Races,** winning **17 Firsts, 2 Seconds.** Also **10 World's Records** were made, and are still standing, no other machine in the world being able to beat them despite repeated efforts.

PRICES from 38 GUINEAS,

H. MARTIN & CO. Works: **Leslie Grove, East Croydon, Surrey.**



"FITZALL" WRENCHES.
NUT AND PIPE.
DROP FORGED.
TRADE FITZALL MARK
SELECTED STEEL.

LAST WORD IN WRENCHES.
INSTANT GRIP. NO SLIPPING.

No Motorist or Mechanic should be without one.

Obtainable from all leading accessory dealers, or full particulars and prices and name of nearest dealer from—



J. C. PLIMPTON & Co., Ltd., PLIMPTON'S BUILDINGS, LIVERPOOL,
SOLE WHOLESALE AGENTS.

Look for the Corah Trade Mark— it is SEEN ONLY ON THE BEST MOTOR CYCLES—

- - THE - -

CORAH

SEND FOR ILLUSTRATED CATALOGUE.

Prompt deliveries can be given of all models, either direct or from any of our agents.

THE . .

Corah Motor Mfg. Co.
King's Norton, BIRMINGHAM.

LONDON TO PARIS in 3h. 12.

OLEO

DID IT!

After this refuse all others. Have a genuine OLEO for your money.

Ask for an OLEO 6D type (Motor Cycle) everywhere.



LEO RIPAULT & CO.,
64a, Poland Street, W.

STERNOL

THE KING OF MOTOR OILS.

The exclusive use of "Sternol" ensures sweeter running, reduces your repair bills to the minimum, and enables your engine to develop greater power on hills.

The leading agents throughout the country recognise the superiority of "Sternol," and always stock it.

Why not give it a trial?—you will then have an opportunity of testing its manifold merits for yourself.

Full particulars post free on request.

STERNOL,
56, Royal London House, Finsbury Square, London, E.C.

It pays to use good oil for Motor Cycle work

and it is just as important to adopt the lubricant that is most suited for one's engine if the best results are desired.

PRICE'S MOTOR

Oils for Motor Cycles

are prepared from the finest materials that it is possible to obtain. The individual needs of different engines are carefully studied, with the result that the lubricants recommended can be relied upon to give the utmost satisfaction. The brilliant series of successes scored by Motorine and Huile de Luxe during 1911 and in previous years is sound testimony to their efficiency. The Oils used in all these events have been exactly as sold by Motor and Cycle Agents.

Write for 1912 Booklets to

PRICE'S PATENT CANDLE CO. Ltd.,
Battersea, LONDON, S.W.

CYLINDERS DECARBONISED.

BEST RESULTS BY THE CYLCLEAN Process

NO DISMANTLING.

Quick and Effective.

Single-cylinder 3/6
Twin ,, 5/-

Nearly 400 Agents.

Head Depot: 39, Brick Street, Piccadilly.

The Internal Combustion Engine Cleaning Co., Ltd.,
3, London Wall Buildings, E.C.

OFFERS WANTED.

We have close on 200 Second-hand Motor Cycles, and these, together with the New Machines that are continually coming in, and the machines that we have to take in exchange deals, are filling up the show, and it is only with difficulty that we can get either in or out, and as to the matter of showing machines, this is an utter impossibility. They are packed in rows like "herrings in a barrel." If you have not been to see the show, come over, and you will get an eye-opener and startler, more particularly if you have been to see what other people call their shows. There are more machines here than are to be found under any one roof in the world. There are Second-hand Triumphs, Humbers, Jap-Bats, N.S.U.'s, Minervas, Rexes, P. & M.'s, Singers, Moto-Reves, Motosacoches, V.S., Moto-Velos, Rudges, Rovers, and many other two-speed gear and free-engine models. Besides these, we have a dozen or fifteen Accumulator Machines, which the Sunny Jims can have at from **£3** down and balance at from **5/-** per week. The better class machines, with a few exceptions, can be had at one-third down and the balance by instalments.

If you have some **cash** left after the strike, we want you to make us an offer. Send for our list and get on the **jump** Remember that we are on the telephone, not for the good of our health, and also that we appreciate a call or wire. We must really clear some of this huge stock to make room.

In addition to the above, we have a lot of **Second-hand Sidecars** that we wish to clear at from **£3 10s. upwards,** as we must make a move on something or other, otherwise we shall have to take another shop in order to take in the daily deliveries of new stuff. We want you to **give us a hand** to make a move on this tackle.

If you have a Motor Cycle, you are **independent** of the Coal War, Railway Strikes, and other industrial upheavals. We would specially like you to come and see us. If you can do this, you will get a surprise, and we ourselves are rather surprised that more people do not avail themselves of coming to Morecambe for a week-end during the season. It is a fine place, and is a top coat warmer than in most of the inland towns, and two top coats warmer than in many towns of this country. If you blow into Morecambe for a week-end, you can be put up very reasonably, and you can have a thorough try on a machine before starting back home again. We make this proposition to the knuts, as we think it will come cheaper in the end than having railway fares to pay on machines that they want sent on approval.

Besides a host of Motor Cycles, we have a large stock of odds and ends in the way of Accessories, which, as they say in Yorkshire, **are in the gate.** If you have not had a list, it is time to get one; and if you want a new machine, we can supply you with anything that is worth having; the others you do not want.

We have in **stock** at the present moment the following new models:

P. and M.'s, Bat-Japs, chain-drive and belt-drive models; Matchless, two-speed and all models; Rudge, ordinary and free-engine models; Zeniths, all models; Clynos, two-speed; Bradburys, two-speed and ordinary models; Premiers, lightweights, two-speed, and ordinary models; Scotts, Humbers, lightweight three-speed models and 3½ h.p. two-speed models; Motosacoche, two-speed; Triumphs, ordinary and free-engine models.

We have also coming in **this month**, A.C. Tricars, Douglas model K, Morgan Runabouts, and we are open for your kind enquiries.

If you are in the **Trade,** we can give you our best trade terms. We are catering for the wholesale, and not jealous by any means. Before buying anything, write us. Our Garage has a very poor appearance as far as looks go, but without doubt we have **the largest stock** in the World, and that is what you want to look at, not the general contour of the premises. We pay a small rent, and can give better terms than the large City Houses who have fancy rents to pay. Our stock of new machines for the season is not far short of £50,000, and we look forward to your assistance in moving this lot. So long until Eastertide.

The canaries are in full song!

—:o:—

NOTE!

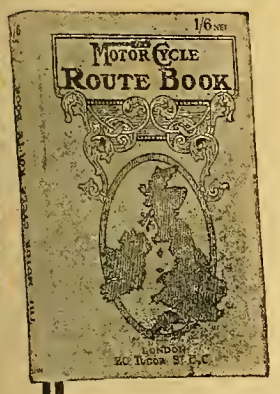
We are open all Easter Holidays. Come and see us.

—:o:—

Note the address:

HITCHEN'S, LTD., MORECAMBE.

Telephone: 112. Wires: "Motor, Morecambe."



WHERE ARE YOU GOING FOR THE HOLIDAYS?

. . . .

All best routes are given in

"The Motor Cycle"

ROUTE BOOK.

It contains descriptive main routes for the whole of the United Kingdom; speed limits; forty-five . . . . maps (Bartholomew); and copious index. . . . .

Price 1/6 net. .. .. **By post, 1/9.**

Obtainable at ILIFFE & SONS Ltd., 20, Tudor Street, London E.C., and leading Bookstalls.

(Remittance must accompany all post orders.)

HARRODS

Motor Accessories—

Overalls, Lamps, Speedometers, Horns, Tyres, etc.

Any Machine supplied on our unique system of **Deferred Payments.**

for **RUNABOUTS** (Morgan, G.W.K., Motorette, Rollo, & Sabella) and **MOTOR CYCLES**

Harrods can give immediate deliveries from stock of **P & M, Zenith, Bat, Bradbury, Singer, Motosacoche, Humber, Swift, Premier, Quadrant, Douglas, Matchless, Clyno, New Hudson, Rudge, Indian, Norton, Elswick, Browne.**

HARRODS LTD. (Richard Burbridge, Managing Director), **LONDON, S.W.**

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS In these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters shou d be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION IX
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

WAUCHOPE'S

STANDARD OF VALUE.

Proved higher than ever by greatly reduced prices of Second-hand Machines and Matchless Selection of Holiday Bargains in New Motor Cycles of every best make.

NEARLY 300 IN STOCK.

— List Free. —

5166.	3½ h.p. 1911 Free-engine **TRIUMPH**	£45	0
5159.	6 h.p. 1911 **ZENITH-GRADUA** ..	£55	0
5124.	3½ h.p. 1909 2-speed **P. & M.**	£35	0
5119.	3½ h.p. 2-speed **C.I.E.**	£20	0
5118.	2 h.p. 1911 **HUMBER**	£26	10
5117.	2½ h.p. 1911 Free-engine **SINGER** ..	£38	0
5107.	2¾ h.p. 1911 Standard **DOUGLAS** ..	£28	10
5082.	2¾ h.p. 1910 **ROYAL ENFIELD**	£20	0
5075.	4 h.p. 1908 Free-engine **ROC**	£18	10
5066.	3½ h.p. 1911 **BRADBURY,** Mabon cl.	£37	10
5064.	3½ h.p. 1911 2-speed **HUMBER**	£37	10
5058.	3½ h.p. 1911 **ZENITH-GRADUA**	£45	0
5055.	3½ h.p. 1911 **L.M.C.,** variable gear ..	£35	0
5053.	7 h.p. 1911 Free-engine **INDIAN** ..	£42	10
5001.	3½ h.p. 1911 Free-engine **BRADBURY**	£38	10
1990.	3½ h.p. 1910 Free-engine **TRIUMPH**	£39	0
965.	2 h.p. 1909 **MOTO-REVE**	£17	10
876.	5 h.p. 1908 **V.S.**	£20	0
046.	1¾ h.p. **MOTOSACOCHE**	£11	10
249.	3½ h.p. 1911 Standard **BAT**	30 Gns.	
1322.	3½ h.p. 1911 2-speed **N.S.U.**	£35	0
1420.	3½ h.p. 1911 Free-engine **PREMIER**	£33	10
1444.	1¾ h.p. 1909 **WOLF**	£10	10
1474.	3½ h.p. 1910 **PREMIER**	£27	10
1506.	3½ h.p. 1911 Clutch **REX**	£33	10
1531.	3½ h.p. 1910 2-speed **SCOTT**	£32	10
1533.	2 h.p. 1911 3-speed **HUMBER**	30 Gns.	
1546.	3½ h.p. 1911 **KERRY-ABINGDON** ..	£32	10
1619.	3½ h.p. 1911 Standard **BRADBURY**	£33	10
1628.	3½ h.p. 1910 **TRIUMPH,** Mabon variable gear	£38	0
1631.	3½ h.p. 1909 **J.A.P.**	£22	0
1673.	5-6 h.p. 1911 4-cyl. **F.N.**	£33	0
1677.	3½ h.p. 1910 **BRADBURY**	£23	0
1602.	4½ h.p. 1909 4-cyl. **F.N.**	£20	0
1701.	2¾ h.p. 1909 Twin **N.S.U.**	£18	0
1727.	3½ h.p. 1911 **KERRY-ABINGDON** ..	30 Gns.	
1729.	2¼ h.p. 1910 **ROYAL ENFIELD**	£22	0
1732.	5 h.p. 1910 **REX DE LUXE** and Sidecar	£35	0
1735.	3½ h.p. 1910 **QUADRANT**	£25	0
1742.	3½ h.p. 1908 **TRIUMPH** and Sidecar	£30	0
1748.	2¾ h.p. 1911 **DOUGLAS**	£30	0
1752.	2½ h.p. **J.A.P.**	£7	10
1759.	3½ h.p. 1910 2-speed **BRADBURY** ..	£35	0
1760.	5 h.p. 1911 Free-engine **INDIAN** ..	£39	10
1776.	3½ h.p. 1911 Free-engine **TRIUMPH**	£43	10
1799.	3½ h.p. 1909 **TRIUMPH**	£23	10
1784.	3½ h.p. 1911 **T.T. ARIEL**	£23	10
1792.	5-6 h.p. 1911 4-cyl **F.N.**	£35	0
1831.	2 h.p. 1911 **SINGER**	£27	10
1828.	3½ h.p. 1911 **JAMES**	£32	10
1835.	2¾ h.p. 1910 **DOUGLAS**	£28	10
1838.	8 h.p. 1910 **BAT** and Sidecar	£32	10
1847.	3½ h.p. 1911 Tourist	£23	10
1864.	5 h.p. 1907 **REX DE LUXE**	£17	10
1865.	2¾ h.p. 1911 **HOBART**	£25	0
1891.	2¾ h.p. 1911 **DOUGLAS**	£30	0
1927.	2¾ h.p. 1911 **DOUGLAS,** Model D ..	£37	10
1911.	3 h.p. **QUADRANT**	£7	10
3033.	6 h.p. 1910 2-speed **ROC** and Sidecar	£29	0

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Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication th t the oods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

1912 Free Engine Triumphs, in stock.—Louis Smith, The Garage, Barnard Castle.

3½h.p. Triumph, 1911, splendid condition, carefully driven; £36, no offers.—Dr. Pattullo, Spennymoor.

PREMIER, 1911, free engine, splendid condition; £40; appointment.—Wood, 23, Garden St., Carlisle.

1912 Free Engine Triumph, in stock; immediate delivery; £55.—Harburn's, motor engineers, Bishop Auckland.

1910 3½h.p. Minerva, Bosch magneto, B. and B. carburetter, perfect order; £24, offers.—Martindale, architect, Carlisle.

MOTOSACOCHE, 11h.p., magneto, lamp, generator, perfect running order; £19.—McDonald, 3, Warwick Rd., Carlisle.

2h.p. Werner, enamelled, overhauled, low, smart, good running order, cash offers; also gent's cycle, 30/.—Sampson, Brough, Westmorland.

3½h.p. Triumph, 1911 model, in perfect condition, not done much riding; £35.—Turvey and Co., The Motor House, Sunderland.

3½h.p. Triumph, competition model, won prizes in 1911; a bargain, £18.—Turvey and Co., The Motor House, Sunderland.

2¼h.p. Royal Enfield Twin Lightweight, 1910 model de luxe, in perfect running order; £23.—Turvey and Co., The Motor House, Sunderland.

NEW Machines in stock, 1912 models, for immediate delivery.—3½h.p. Triumph, £48/15; 2¾h.p. Enfield lightweight, 1912 model, 2-speed, 50 guineas; 6h.p. Enfield twin, sidecar, 80 guineas; 3½h.p. B.S.A., 1912 model, free engine, £56/10; 3½h.p. B.S.A., 1912 model, standard, £50; 3½h.p. Humber, 2-speed, 50 guineas; 3½h.p. Humber, standard, £47/10; one 1911 brand new free engine Triumph, fitted with lamp and bell, a bargain, £52.—For deliveries of anything in the motor cycle line, Turvey and Co., The Motor Cycle House, Sunderland. Tel.: No. 626.

TRIUMPHS, Humbers, B.S.A., Royal Enfield motor cycles, lightweights, 2 speeds, free engines; write, wire, or 'phone for immediate deliveries.—Turvey and Co., The Motor House, Sunderland. Tel.: No. 626.

1912 Phelon and Moores, free engine Triumphs, Douglases, Bradburys, B.S.A.'s, Enfields, in stock. —Phone: 1X2. Stout's Garage, Egremont, Cumberland.

TRIUMPH, 1910, free engine, excellent condition, only run about 1,000 miles, tyres good, lamps, spares, etc.; owner buying car; £39.—Dunn, Cleveland Av., Darlington.

1911½ Humber, 3½h.p., 2-speed, F.E., condition faultless, tyres nearly new, belt new; owner wants twin; price, with spares and speedometer, 40 guineas; seen by appointment.—Evans, St. James's Terrace, Morpeth.

BRADBURY, 3½h.p., free engine, run 1,500 miles, £37; Humber, 3½h.p., 1911, 2-speed, free engine, £33; Excelsior, 3½h.p., 1909, £26; Humber, 1911, lightweight, £25; new t rpedo, 3½h.p., £46, 1911, offers wanted; new Humbers, Matchless, Premiers, torpedoes, etc., in stock; Triumphs early.—Milburn's, Penrith.

In answering these advertisements it is desirable to mention "The Motor Cycle."

THE MOTOR CYCLE

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The Future of the A.C.U.

"THERE is a tide in the affairs of men which taken at the flood leads on to fortune." So is it with the A.C.U. at the present time. What we want to do in this short article is to impress upon the provincial clubs that, notwithstanding any communications they may have received from other sources, the progressives are their true friends It is the sole aim of the Motor Cyclists' Progressive Association to look after the interests of the provincial clubs by seeing that they are represented by active men whose motto is progress, and who believe in the government of motor cyclists by motor cyclists. The old policy of a section of the A.C.U., who, many think, have been too long in power, has been to quibble with the delegates of the provincial clubs at council meetings, and generally to prevent progress. The application for affiliation of the British Motor Cycle Racing Club was refused three years ago simply through the high handed and unreasonable action of the section referred to. It is perhaps a little unfortunate that the proportion of trade representatives on the progressive side is high, as it gives the provincial clubs an idea that the Union is governed by the Trade. This is not so.

The number of proxies in favour of the proposal detailed in the last issue which had for its object that no motor cycle trader be eligible to serve on the General Committee clearly shows that the local club members look upon the progressives with distrust and utterly fail to understand their policy. The proposition referred to was too sweeping, but had it been framed so that the proposal was to elect only a proportion, say not more than half, of trade representatives on the General Committee it might have been adopted. It is ridiculous to shut one's eyes to facts, and the fact in connection with the trade representation on the A.C.U. is that those traders who give their services are deeply interested in the development of the movement and their advice and experience are of very great use. Five weeks hence the club representatives on the committee will be elected, and we sincerely hope that the clubs will carefully deliberate before they act.

Lights on Sidecars.

FROM observations we have made recently, a large percentage of sidecarists are content to use their machines on the road at night with only one head light attached to the bicycle. It is almost unnecessary for us to point out that great risks of collisions are being run in this way, and especially does that remark apply to motor cyclists who use sidecars attached to the right-hand side of the motor bicycle. It is usual for car owners to regard a single light as illuminating the path of a single track machine, and, unless he were a cautious driver and allowed plenty of room for the machine to pass, a sidecarist using a single light might suddenly find himself in a very awkward predicament. It is strange that the law does not compel the use of two lights on vehicles of great width, though it is generally agreed that, in the interests of public safety, lights showing the extreme width of a vehicle should be used. We recommend all sidecarists, both in the interests of themselves and other road users, to carry two head lights, and thereby run no risk of a collision due to insufficient lighting.

ENGLISH-DUTCH TRIAL.

Closing Date for Entries. How the British Teams will be Selected.

THE Council of the Dutch Motor Cycle Club met recently, when the programme of the above international trial to be held on Bank Holiday Monday, August 5th, was considered.

A silver challenge cup called "De N. M. V. Beker" will be presented by Messrs. J. Ferwerda and A. Citroen to the victorious team, but it will be necessary for the countries to meet on more than one occasion before definite possession of the cup is gained. At the council meeting several members of the Dutch M.C.C. offered special prizes for the Dutch competitors in order to stimulate further interest in the contest, and so that the Dutch motor cyclists might put their best efforts forward to win the contest. The trial is being taken up enthusiastically in Holland. The Dutch organisation is now four years old, and has a membership of nearly 400, with a good bank balance. It is a matter of extreme pleasure to the officials of the organising body—the Dutch Motor Cycle Club—that English motor cyclists have adopted so enthusiastically their suggestion to send over a team to Holland to compete against the pick of that country. So far, we understand, the Dutch entrants mainly consist of private owners.

Choosing the English Team.

A scheme for choosing the team to represent this country has now been adopted. Entries definitely close on Saturday next, 13th inst., and immediately the time is up a list of entrants will be circulated among the secretaries of leading motor cycle clubs throughout the country, with a request that they bring the lists before the notice of their respective committees, and select the nine best private owners and nine trade riders, striking out the remainder. A count of the voting will afterwards be made, and the actual teams published in these pages at the earliest opportunity. It is desirable to choose the teams as early as possible so that those entrants not chosen may make other arrangements for the August holidays. Further, there is a considerable amount of work in the organisation, as checking cards, maps, number plates, etc., must be provided.

Those club secretaries who have taken an interest in this international trial, and would like their club committees to have a say in the matter of choosing a representative British team are invited to apply for the list of amateur and trade entrants.

The Dutch M.C.C. have wisely decided to send big round number plates as used in the T.T. to each of the English competitors, so that they may be fitted at home.

British motor cyclists who desire to enter have still another chance. Amateurs should have at least three non-stop runs in observed trials to their credit. The fees are as follows: Private owners, 5s.; trade riders, £1. Entries should be forwarded to the editor of *The Motor Cycle*. One or two private owners who have entered have not forwarded the 5s. fee.

Amendments to the Rules.

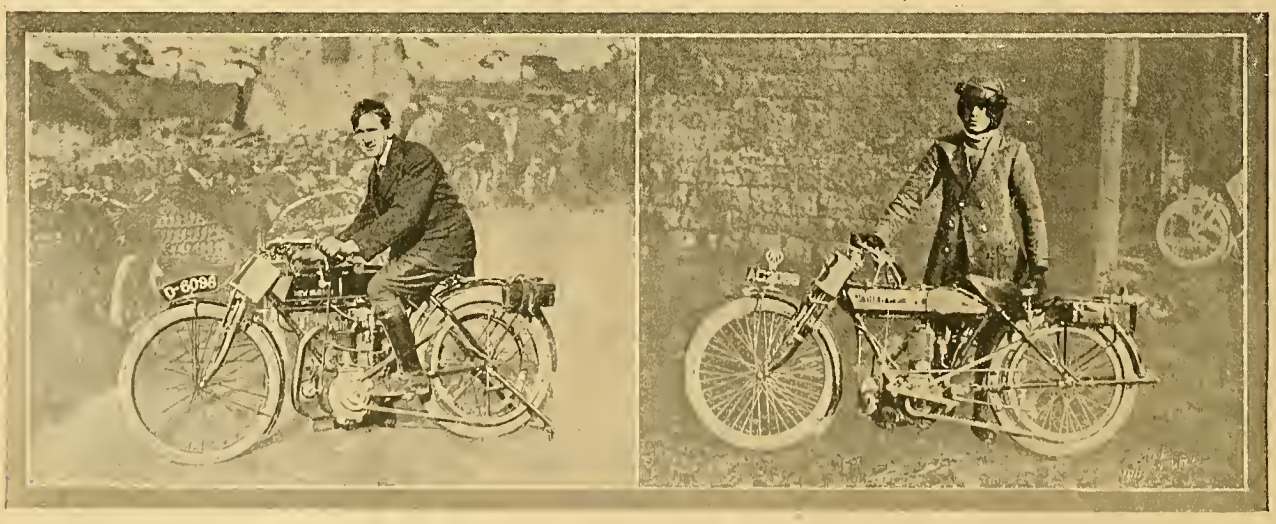
One or two alterations have been made in the conditions. In the Lightweight Class it has been decided to increase the capacity limit to 350 c.c., which is the 1912 Junior T.T. limit as adopted by the A.C.U.

The Dutch M.C.C. request that the visit to Holland be extended to the Wednesday evening. They point out that a boat leaving the Hook of Holland on Wednesday evening reaches Harwich next day at 6 a.m. No doubt some of the members of the party will avail themselves of this invitation.

Mr. Seymour Smith, one of the amateur entrants, considers it advisable for the selected teams to go over the course at least once before the competition, which would necessitate leaving Harwich on the Friday preceding the trial. These matters, however, will be suitably arranged at a later date.

Mr. Horatio Wallis, if chosen, has now decided to ride a two-speed Bradbury.

We are requested to point out that in Holland road users keep to the right and overtake on the left, the reverse of the usual order of things.



TWO OF THE CLASS WINNERS AT THE DERBY AND DISTRICT M.C.C. OPEN HILL CLIMB.

1. H. Borwick (2¾ h.p. New Hudson) first of the Junior T.T. riders. 2. H. C. Newman (3½ h.p. Ivy-Precision) who gained first place in Class III.

Special Fittings on Brooklands Racers.

THE first race meetings of the season generally bring forward a number of new ideas, but this year there have been for some reason comparatively few. The accompanying sketches, however, depict some of the more noticeable novelties on competing machines, and from these it will be seen that in the majority of cases more attention has been paid

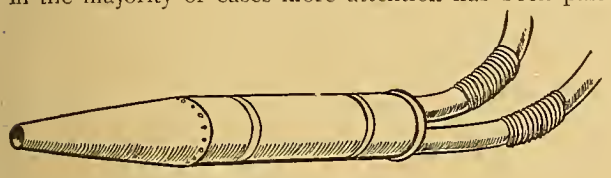


Fig. 1.

to silencers than other details. Of these several new types have been seen on the track. Godfrey's 3½ h.p. and Moorhouse's 7 h.p. Indian were fitted with silencers as shown in fig. 1. Generally speaking, they appeared to be effective, and were certainly neat looking. The wrapping of asbestos cord round the exhaust pipes is for the purpose of protecting the

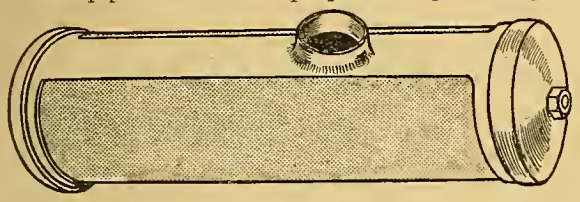


Fig 2.

rider's shin, as this part of the pipes is immediately over the foot-rest.

Guiver's and R. Cook's Rudges had large diameter extended pipes. Else's Rudge was fitted with an ordinary exhaust box perforated almost all over with small holes, the bottom of the silencer being left plain so that the gases would not tend to raise dust. There

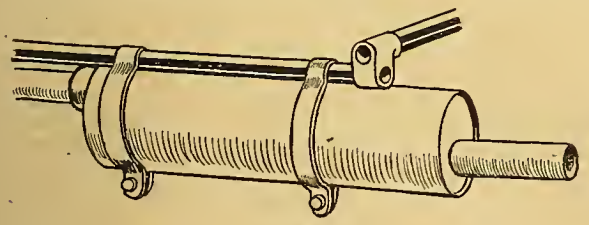


Fig. 3.

is good reason to suppose that if the holes were placed only at the back of the exhaust box the result would be better. If they face forward at all the pressure of the air which the machine meets must set up a back pressure in the silencer by tending to prevent the exhaust gases finding their way out, and that such is the case seemed to be proved by the marks which the streams of gas had left on the outside of the box, showing that they were very sharply deflected indeed.

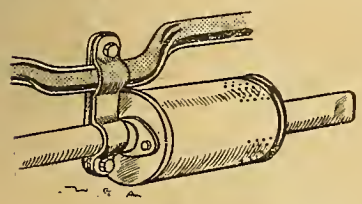


Fig. 4.

Yet another Rudge silencer is that shown in fig. 2. This was much wider than usual, and consisted of an outer shell supporting practically a tube of closely perforated brass. It will be realised, of course, that the smaller the holes the greater is the difficulty which the gases experience in passing through them, irrespective of their number, and this in itself is probably sufficient to induce a good deal of back pressure.

Harry Martin had got two very large silencers on the successful Morgan runabout, as shown in fig. 3, and also a large one on his Martin-Jap motor cycle as indicated in fig. 4. In both of these a large expansion chamber was provided, and that on the Morgan runabout certainly appeared to be efficient, as the machine showed a remarkable turn of speed, and was, perhaps, the quietest of all the cyclecars.

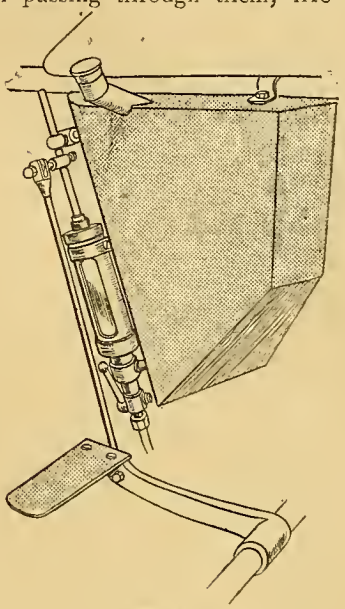


Fig. 5.

Sam Wright had fitted to his winning 2¾ h.p. twin Humber a neatly arranged foot operated oil pump, a sketch of which is given in fig. 5.

It will be noticed that the oil is contained in a wedge-fronted auxiliary tank placed below the back end of the petrol tank. By this means the redoubtable Sam was able to go through the whole hundred miles without having to fill up.

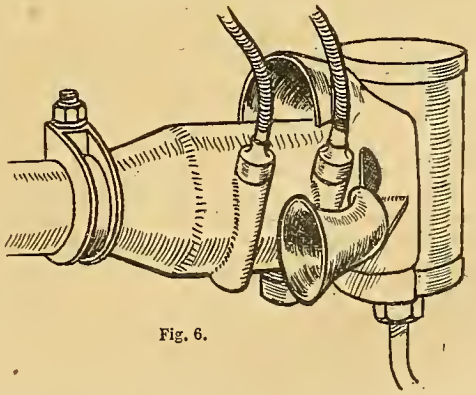


Fig. 6.

On W. Smith's Rudge and one or two other competing machines of the same make a special type of Senspray carburetter was used, a rough sketch of which is given in fig. 6. It will be seen that the spraying chamber is provided with two air scoops, the larger one of which applies to the main air intake whilst the smaller one directs a small stream of air immediately over the jet.

Occasional Comments by "Ixion"

"A" Shaped Number-plates.

I see that "A" shaped number-plates are growing in popularity. They are, strictly speaking, illegal, as the law demands an upright plate; and in practice they have one serious defect, in that they greatly enlarge the shadow cast by the lamp at night. If the lamp be mounted high, their broad shadows fall close to the front wheel, and they merely prevent the rider from sighting stones which may gash his tyres or set his machine on the wobble; but when the lamp is carried low the shadow they throw keeps bucketing ahead of the driver, and considerably interferes with the comfort of night work. I am a great believer in the single thin vertical plate carried low, with the lamp mounted high.

Adjustable Foot Control.

The increased popularity of free engine clutches has added to the number of control pedals fitted to the average machine, and very frequently a maker has a single standard fixed mounting for such controls.

As most men fail to exceed 5ft. 9in. in height, these control pedals are usually mounted amidships on the standard machine, and when a tall rider purchases one of these machines, he finds it practically unrideable until he has altered the controls. I bought two new machines last year, and neither of them was really safe for my riding as delivered. On one I had to make a new pedal, brake rod, and mounting spindle, for otherwise I rode with my feet miles away from the vital pedal, and had hastily to feel for it in emergencies.

The other—a foreigner—was even worse, for the brake, clutch, and cut-out pedals were all alike inaccessible to me. Surely every maker must realise that his customers will range in height from 5ft. 6in. to over 6ft., and even if the tall customers are in a minority, he should none the less cater for them. It is easily done in several ways. He may either stock two separate sets of control fittings, one for the rear footrests (for short and average riders), and one for the front rests (for lanky owners); or he may adopt the plan favoured by one or two leading makers by mounting his rests on short depending arms adjustable by toothed ring brackets; if the arm be 4in. long, this mounting gives a very considerable range of adjustment, and will meet the difficulty.

The Scottish Six Days Trials.

I hear that the Scottish Six Day Trials are provisionally fixed for July 15th to 20th, and that a number of lady riders are eager to compete, provided a married lady can be procured to accompany the event and act as chaperone. This proviso shows how *fin de siècle* we are becoming. Perhaps in the near future all the leading clubs will provide official chaperones. If any married motor cyclist intends to compete and take his wife with him in a sidecar, he might communicate with me.

The route is to be considerably stiffer than last year, and intending competitors may rely on the maximum of gorgeous scenery and a surfeit of sporting hills. It is not advisable to compete in these trials without a variable gear.

Wanted, a New Wheel Bearing Lock.

It is a constant puzzle to me that no motor cycle engineer has yet produced a simple wheel bearing adjuster for ordinary cone adjusting hubs which is not affected by removing the wheel from the forks. Barring a few exceptions, the trade aims at making both front and rear wheels rapidly detachable, in order to facilitate tyre repairs.

When we get a bad puncture, we mostly prefer to take out the wheel and repair at leisure, seated on a bank where the wild thyme grows, rather than to squat in the dirty road, with one leg on each side of the machine, and dodge the belt, mudguard, carrier stays, and so on. But the charm of this newer process is greatly reduced by the fact that the cone adjustment of the wheel bearings almost invariably shifts when the axle nuts are loosened; in many cases we actually ask for trouble, because one nut is tighter on the spindle than the other, and it is occasionally quite an awkward and tedious job to restore the correct bearing adjustment. I always order specially tight-fitting cones, but even thus I usually find that one nut binds and the other is too loose.

There is a distinct opening on many makes for a new cone lock which shall be independent of the axle nuts. One or two firms fit disc adjusting bearings, notably Triumph and Chater-Lea.



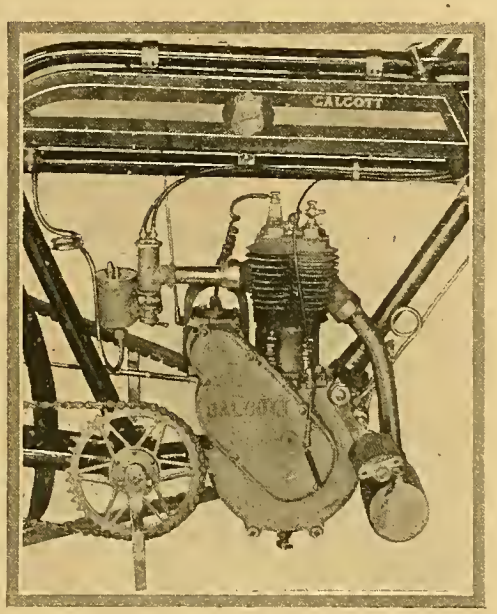
Harry Reed (Det) establishing an early lead in the Derby and District M.C.C. open hill-climb at Oakamoor.

A TRIAL OF

The Lightweight Calcott.

A FEW days ago we received an invitation from Calcott Bros., Ltd., Coventry, to have a short trial run on one of their lightweights. The engine of this machine has been increased in bore since it was described in our Show report of November 23rd, 1911. The cylinder is now 70 mm. bore × 76 mm. stroke, and the magneto firing point, which was previously fixed, is now adjustable, the lever for operating it being close up to the rider on the left side of the tank.

Reference to the illustration will show that the frame follows standard lines, but the steering head is fairly long and supported by a tubular stay from the top tube. The rear frame is dropped, affording a comfortable low riding position. The valve lifter is on the left bar and the front rim brake lever on the right. Both levers are of the inverted type. This machine has no clutch, variable gear, or free engine device, and is started by pedalling or running alongside, the idea being to produce a machine with as little complication as possible to enable it to be sold at a remarkably low figure. The machine we took over for a trial run of about fifty or sixty miles was quite new, and we were at once struck by its quietness when starting it up on the stand.



The power unit of the latest pattern 2½ h.p. Calcott.

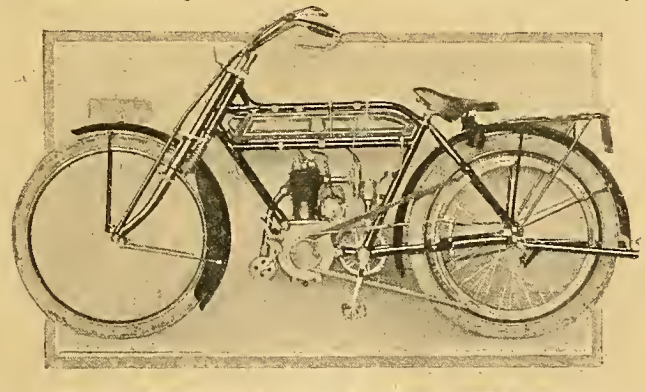
Up Warmington with a Hot Engine.

Accompanied by one of the members of the firm on a similar machine, we left Coventry on a fine afternoon, our destination being Warmington Hill, which is one of the ascents on the Edge Hill range, and a hill which we have always found to be a fairly good trial for any single-cylinder motor cycle of the lightweight class.

The writer's weight being nearly thirteen stones, he always considers it a good performance if a new lightweight machine will tackle Warmington Hill and reach the top with a hot engine unaided. With a view to proving the speed capabilities of the little machine it was not spared on the somewhat undulating road *via* Warwick and Gaydon Inn to the foot of the hill, which was reached in about one hour riding time from Coventry, the distance being about twenty-four miles. At the foot of the hill the engine was indulged in a little extra lubrication, and the grade as far as the church was taken at an excellent speed. Just opposite the church the gradient is about 1 in 7, and at this point two or three turns of the pedals were required to enable the engine speed to be maintained sufficiently to carry it over the stiffest portion of the hill. Beyond the church the grade eases slightly, and the engine immediately picked up and took the rest without a falter. In all, we made three ascents of the hill, but found that with the standard gear of 5¾ to 1 exactly the same amount of assistance was required at exactly the same point.

Comfortable Touring Mount.

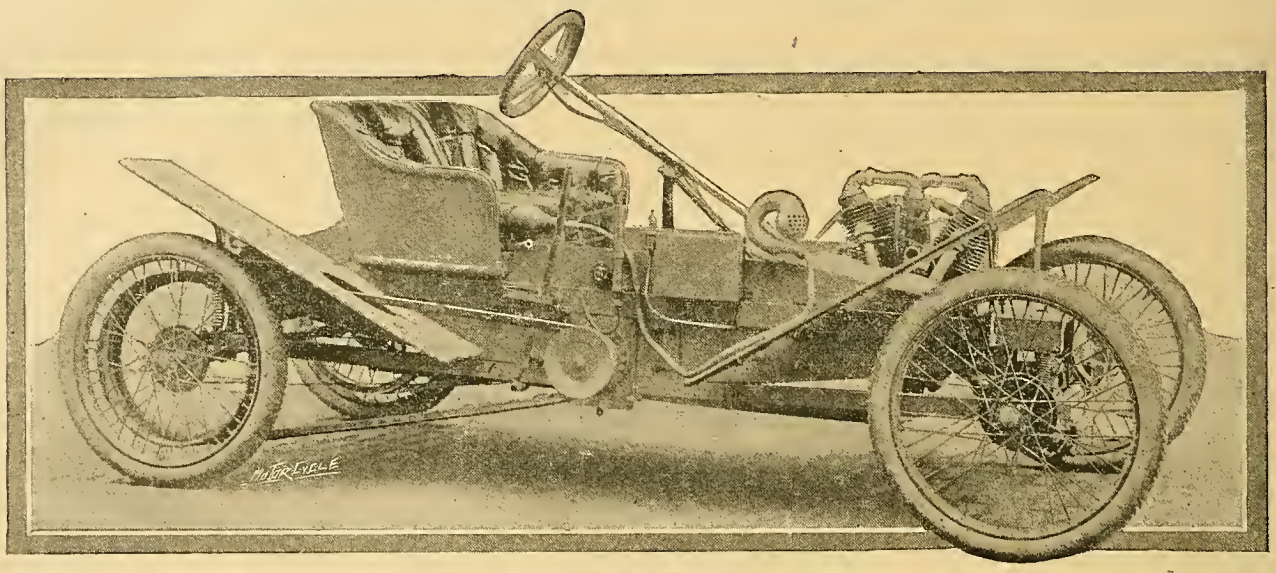
At the conclusion of our trial it was beginning to get late, so we made our way home, and returned the machine to the makers with the opinion that in their new lightweight model they have a comfortable, easy running, easy starting machine which is capable of taking an average-weight rider almost anywhere on main roads. As the machine is provided with an easily adjustable pulley, it is possible to reduce the gear considerably, when, of course, it would climb very much steeper hills than the one on which we tried it; in fact, we are told that with a gear in the neighbourhood of 7 to 1 a similar machine has taken about thirty stones over the well-known Coventry test hill at Stoneleigh.



The neat appearance of the Calcott lightweight is apparent from this illustration.

Incidentally we may mention that the whole of the power unit with the exception of the carburetter and magneto is constructed by Messrs. Calcott Bros. in their own works. Certainly we have never ridden a better finished or better running machine which is sold at such a moderate figure as the 2½ h.p. lightweight Calcott, and more will be heard of it in the near future. The magneto is a Bosch and the carburetter a Brown and Barlow.

ANOTHER NEW CYCLECAR.



A racy looking 9 h.p. two-speed cyclecar owned by H. J. Harding.

ON a recent occasion we had a visit from Mr. H. J. Harding, who arrived on a 9 h.p. cyclecar, which he had built for himself in his Paris workshop and had driven by road from the French metropolis to Boulogne. It is an exceedingly interesting little vehicle. The motive power is a 9 h.p. J.A.P. engine (85 × 95 mm.) with automatic valves; the cylinders project above the floorboards, thus being well exposed to the air. The body parts are held together by means of rods, which run in pairs from one side to the other, and are held in tension by nuts abutting on the sides of Hans Renold chain links.

The transmission from engine to counter-shaft is by Hans Renold chain. This counter-shaft is provided with a spring clutch arrangement, which acts as a differential. The counter-shaft, consisting of a central portion carrying the chain wheel and two outer portions on which are fixed the belt pulleys, is connected by spigots. The three portions are also joined by two coil springs, which are tightly wrapped round the axle and anchored at one end. When the engine is driving, the springs coil tightly round the counter-shafts and drive solid. If a corner be turned the inner half of the shaft remains practically stationary, through the spring sliding over the central shaft, while the outer half drives practically solid. The broad principle of this method is similar to the coil spring clutch used on the Mercédès car. The body, as will be seen from the photograph, is clamped in the centre to two longitudinal ash splines, 1½in. square; these form the major part of the springing of the vehicle, but interposed between their ends and the body are spiral springs, while two straps at each end are provided to restrict the limit of the rebound.

Old Type Gear Revived.

The gear is the well-known Bozier epicyclic two-speed, which was used on quads and tricycles in the early days of the movement. It is controlled by one pedal, which, when pressed right down, engages the low gear; in the midway position it is in neutral, and if allowed to rise to its fullest extent the top speed is in engagement. A lever is also provided to hold the top gear temporarily out of engagement, if required, as is the case when very thick traffic has to be negotiated. The final drive to the rear wheels is by belts. Internal expanding brakes are provided to all four wheels. The two steering wheels are coupled together by the usual tie rod, and their movement is effected by means of a drum, round which wires are wound. The petrol tank is at the rear of the back seats, and the fuel is fed by pressure to the carburetter.

We tried this cyclecar in the London traffic, and found it to run extremely well. It is easily controllable, develops ample power, and made a good showing on Netherhall Gardens; but owing to the switch being accidentally cut off, or to the petrol not feeding properly, it came to a standstill on the 1 in 7½ grade, and although the passenger and driver remained seated it made a most successful restart without the slightest hesitation.

The vehicle is not actually on the market, but represents a type which Mr. Harding would like to see taken up. His address is 211, Northumberland Park, Tottenham, N., and he was formerly a reserve rider in the first International Cup Race, and was on that occasion mounted on a 4 h.p. single-cylinder Lagonda.

A.C.U. OFFICIAL HANDBOOK.

The 1912 edition of the Auto Cycle Union official handbook is to hand. It contains a complete list of motor cycle clubs affiliated to the A.C.U., also a list of officially-appointed hotels and repairers, with prices of hotel accommodation clearly set forth. The open competition rules of the A.C.U. are for the first time included in the handbook, and a perusal of this chapter will be of interest to club secretaries who are running open events this year. There are interesting chapters on hill-climbing and petrol consumption formulæ, legal requirements for motor cyclists, a *resumé* of the Six Days' Trials, a history of the International Tourist Trophy Races, and a list of British motor cycle records existing on January 1st, 1912. Continental customs facilities, and a list of ferries in England and Wales with their charges, and particulars as to International travelling passes are also included. The handbook is being issued to all members and hon. secretaries of clubs affiliated to the A.C.U. Those who require further information concerning the handbook, or other particulars regarding affiliation and membership, should apply to the Secretary, 89, Pall Mall, S.W.

LOST AND FOUND.

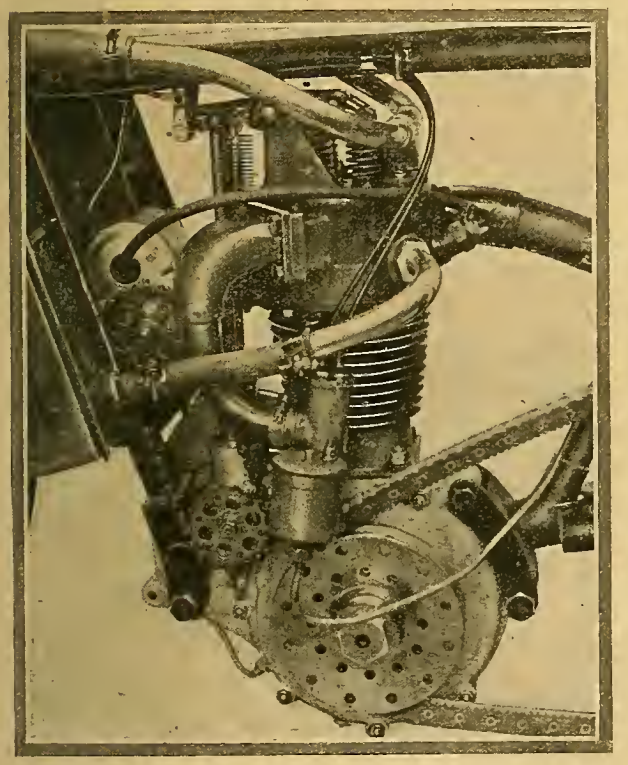
We receive many letters regarding accessories, etc., both "Lost and Found," which we are unable to find space for. As these particular matters are of interest to two persons only, viz., the finder and the loser, we keep a list of such articles, and, should we receive a letter from the finder which corresponds to the article lost, the two persons are put into communication.



A New Racing Engine.



THE Singer Co. have evolved a very novel engine for racing purposes with which they expect to do great things at Brooklands. The power unit was designed by Mr. Louis Coatalen, of the Sunbeam Co. The bore and stroke remain 85 × 88 mm. respectively, so that the machine is eligible

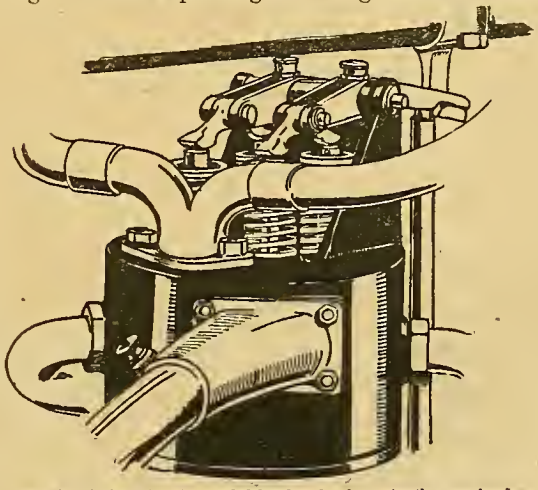


The new Singer racing engine with four overhead valves and water-cooled head.

to compete in the 500 c.c. class. The head is water-cooled, and in it are placed four large valves, two being for the exhaust gases and two for the inlet. The ports are cast in the head. A roller chain-driven camshaft in front of the engine operates stout push rods, opening the valves by a neat overhead rocker system, which can be clearly seen in the accompanying illustrations. The exhaust valves can be depressed by the usual hand lever through a neat cam gear bolted on to the lower top tube. Two small water radiators are carried pannier fashion, attached to the down tube, circulation being carried out on the thermo-syphon system. The magneto (an enclosed Bosch) is driven by a separate exposed chain off the end of the camshaft. The water-cooled head is bolted down to an air-cooled cylinder with tapering flanges.

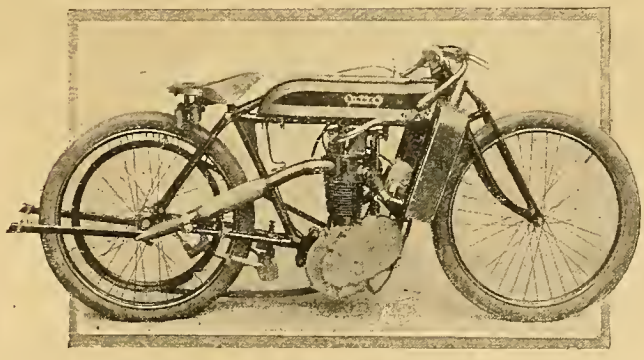
Other Departures from Standard.

Besides the engine there are several unusual points on the machine, noticeably the webbed lug to take the rear ends of the top tubes, also the neat method of controlling the oil pump by a pedal mounted on the foot-rest. All that is necessary to inject a charge of oil is to depress by the heel a pedal fitted on the right footrest. This raises the pump handle by means of a Bowden wire, the plunger being afterwards depressed by means of an internal spring. It is quite reliable, having received a prolonged testing at Brooklands.



Showing design of water-cooled head and valve actuating mechanism.

The tank comes to the level of the top of the frame on one side, so as to give a greater capacity. The silencer also is unusual, but as its construction will be clear from the photograph a description is unnecessary. It is hoped that the machine will accomplish the speed of eighty to ninety miles per hour, and its performances will be watched with interest by followers of the racing game.



The complete machine, in connection with which speeds of 80 m.p.h. are talked of.

UP TOWTOP ON A SIDECAR.

A Severe Climb on the Fringe of Lakeland.

THREE weeks ago, when nought but the storm-song of winter echoed 'midst Lakeland heights, the stern solitudes of Honister Pass were disturbed. The motor cycle men from the Midlands came, saw, and conquered. The worst hill in Cumberland, perchance in Britain, was robbed of its reputation for inaccessibility. But for some the joys of victory were tempered by ominous hints from the Westmorland enthusiasts. "It's nought to Towtop!" came the challenge in broad North-country dialect.

Thus, for the third time in the present month, the insatiables of the Cumberland and Westmorland Motor Cycling Clubs foregathered on a recent Saturday as official observers of the feats of Midland experts. Mr. Frank Smith on his Clyno was to attempt the first ascent of Towtop.

At the outset, it may be said that the hill was as hard to find as to climb. Even in Kendal, the gathering place of the motor clans, its whereabouts were most vaguely described—in fact, practically unknown—and available maps gave no information.

How to Locate Towtop.

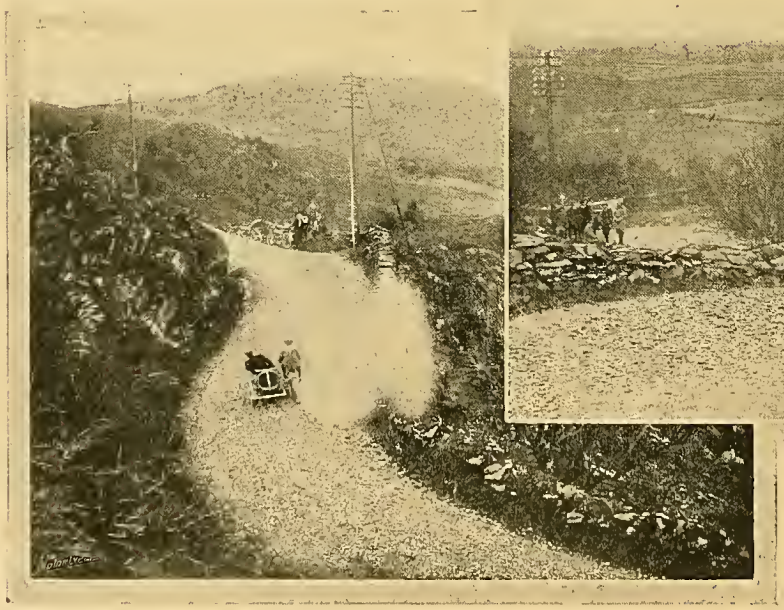
Thus a description of how to find Towtop may be useful. (Incidentally, for motorists coming to Bowness-on-Windermere, there is no finer or more direct approach to the heart of the Lake Country than by the foot of Towtop, and thence along the Witherslack valley to Winster.) The springtime beauties of this region are delightful. Aloft, shattered limestone escarpments gleam in the sunshine; below, the hazel-bedecked pastures are carpeted with daffodils, through which the slow-flowing Winster winds its way seawards.

But, best of all, as some may think, the road surface is excellent, even better at present than the main highway, though narrow in places, and at some of the corners the "speed man" will have little chance of admiring the views. Whether travelling north or south on the Kendal-Preston Road, *via* Milnthorpe, the traveller should turn off at Levens and take the Grange Road for some four and a half miles as far as the Derby Arms. There the main road is neglected and a sharp turn to the right taken. This is the way up to Witherslack Hall, the residence of Lord Derby; but those who attach more importance to Towtop must turn suddenly to the left in the little village which is entered a few hundred yards after leaving the Derby Arms. Two-thirds of a mile further, another sharp and unlikely turn to the left is taken, and soon a rocky range looms in front. Nearer approach shows a road of curious and ancient construction winding airily up into the heights. This is Towtop. In the good old coaching days it was the route between Kendal and Ulverston, and in an adjacent homestead relays of four extra horses were kept for the ascent. The good road to Winster and Windermere cuts at right angles across the bottom of Towtop.

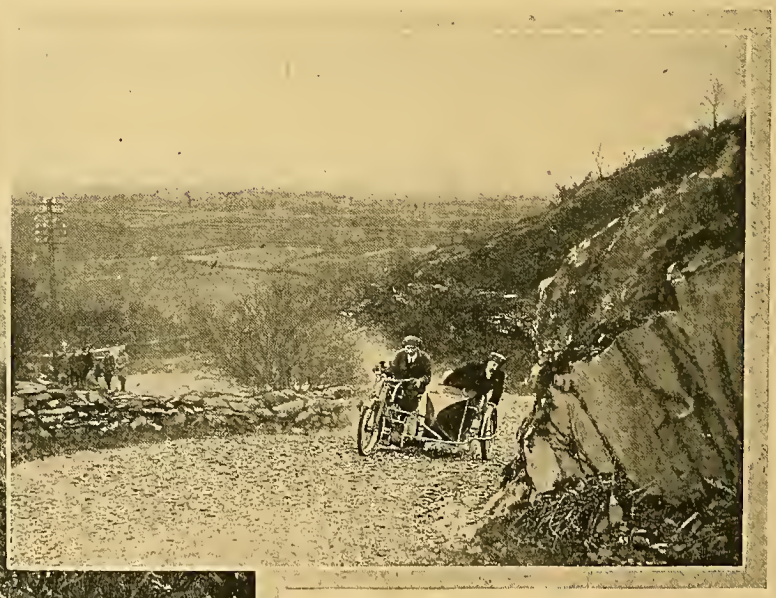
Such were our discoveries last Saturday week. Soon the main section of the party arrived, but almost all the afternoon lost members kept adding to the large gathering, which comprised a sprinkling of ladies. The Clyno was now left below, and its driver with his passenger, Mr. Paskell, inspected the hill. There had been no "trials," and neither of them had previously seen Towtop.

The Gradient of the Hill.

The new hill rose at a surprisingly steep angle for almost a mile, and thence continued in half a mile of easier grade to the summit. Main interest was centred in the eight bad turns in the first mile, and on each of these the gradient was given as 1 in 4½, but in negotiating them sharp "steps" of 1 in 3 had to be rushed. At each of these the surface was loose, and like unto a mountain side. The curious S turn about two-thirds of the way up was voted the *pièce de résistance*. There the sensation-seeking sightseers took their stand.



Rounding the upper S bend on Towtop. The summit is seen in the distance.



At the middle bend, about half way up the hill.

The foot of the hill was now visible some hundreds of feet below. The roar of the twin came up to us; a film of smoke hid the unnecessary signallers. "He's away!" was the cry. The first turn was taken slowly, a necessary precaution as some proved later. Up came the sturdy machine straining, swinging, bumping, and jumping over the mountainous slope, Smith and his passenger masters of craft in their feats of balance and control. Their strained faces seemed to leap suddenly upwards out of the depths as they appeared over the profile of the gradient at the third turn. The speed flung them across the stony surface with a surprising skid, stirring to spectators, Clyno and climbers alike. The front wheel swung almost at right angles to the direction of progress. But the balance

Up Towtop on a Sidecar.—

was just regained for the next turn, which was encountered instantly.

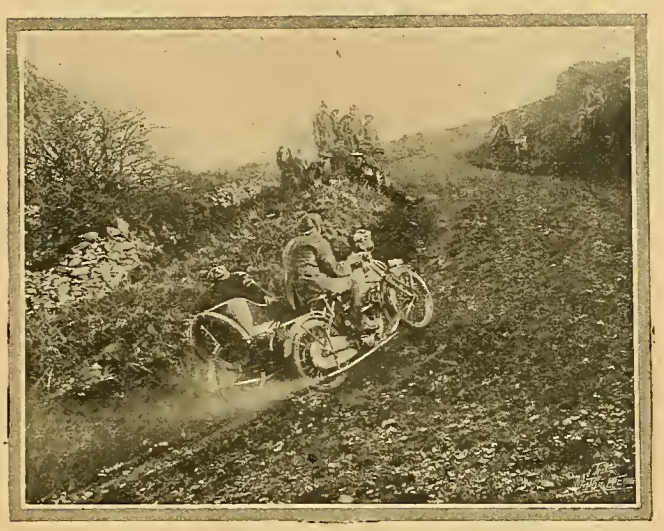
Here was the worst surface. The driving wheel spun wildly, bits of Towtop were flung all around painfully, as at least one of the spectators could prove. Progress was checked, but not stopped. Gradually the driving wheel found more solid ground, and a shout of relief rent the air as we saw the Clyno gather speed; with a roar of satisfaction, as it were, the machine dashed up the straight to the upper turns and out of sight overhead, never faltering to the summit.

Ascents on Motor Bicycles.

Numerous motor bicycles attempted the climb; three were successful, a Zenith, an Indian, and a Rudge, the latters ridden by the hon. secretary of the Cumberland Club, Mr. W. B. Little. Some failed at the first bend through taking it at high speed. After an unnerving skid one of them hit the dust, and his tongue also; thus, fortunately, little could be said. Then, at the finish, Mr. Frank Smith made two other ascents, the first of these accompanied by a passenger who modestly acknowledged to a weight of nearly fifteen stones. During the descent a Lakeland rain-storm clouded the valley; damp and rain-sodden we whirled back to civilisation through misty twilight. But thoughts lingered on the afternoon's sunny prospect from Towtop over fifty miles of Lakeland beauties, with the pale blue Pennines hanging dreamily on the horizon. Some of us will return to Towtop.

Finally, why not include the new hill in one of the reliability trials? Towtop is as much a main road as the better known, but less trying, Scotch test-hills, and from its crest cars or cycles could continue the splendid high road to Bowness-on-Windermere and Ambleside.

GEORGE D. ABRAHAM.



Another view of the S bend. The gradient at this point is said to be 1 in 3.

THE LATE AUBREY MANNING LOMAX.

To the many readers of *The Motor Cycle* to whom Aubrey Manning Lomax of the B.S.A. Co. was known, the news of his sad death will come as a very great shock. It is surmised that a tyre burst, causing him to be violently thrown while riding near Castle Bromwich. He was picked up unconscious in the road by passing motorists, who at once conveyed him to the Birmingham Hospital, where he died early the next morning from a fractured skull, the verdict at the inquest being accidental death. It was intended that he should be buried at Polesworth, the home of his *fiancée*, Miss Davies, to whom our deepest sympathy extends, but at the last moment, in compliance with the request of his parents, his body was embalmed, and, after a very beautiful choral service, conducted by the Rev. Canon Trotter, was despatched to his home in New South Wales.

Mr. Lomax left Australia about five years ago, and studied engineering first at Harvard in the U.S.A., and afterwards at the Birmingham University. About twelve months ago he was engaged by the B.S.A. firm, to whom the family wish to express especial thanks for all they have done. His relatives were also much touched by the kind thought of the Birmingham Motor Cycle Club in sending a beautiful wreath, and in having themselves represented at the service by Messrs. Duke, Fowler, and Pugh.

THE NEW A.C.U. SECRETARY.



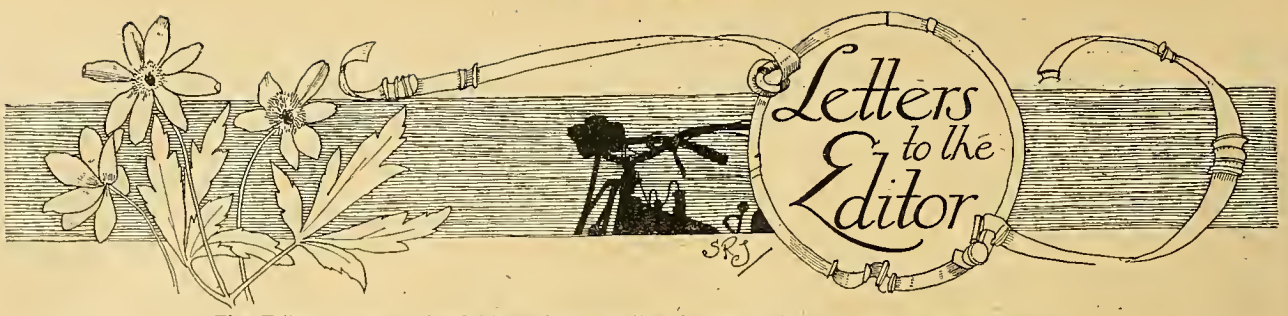
Mr. T. W. Loughborough, A.M.I.A.E., who was last week appointed secretary of the Auto Cycle Union.

The A.C.U. has been fortunate enough to secure as secretary the services of Mr. T. W. Loughborough, A.M.I.A.E. Mr. Loughborough is best known to our readers as honorary secretary of the B.M.C.R.C. The first year of its institution Mr. A. G. Reynolds undertook the work, and his quick perception soon resulted in the singling out of Mr. Loughborough from among the members as his possible successor. Since Mr. Loughborough took over the organisation of the B.M.C.R.C. that body has gone ahead by leaps and bounds, and now is one of the most enterprising clubs in the country; all the work in connection with the B.M.C.R.C. has been entirely honorary and accomplished in his spare time. His original ideas, which are embodied in the races, the excellent organisation of events, and the general success of the B.M.C.R.C., indicate that he should make a great success of the A.C.U., to which he will, of course, devote himself exclusively.

Mr. Loughborough is an old Marlborough boy, and it is interesting to note that he served with the regular troops in the South African War, and was promoted to the rank of Captain in the reserve of officers for services rendered. He is also an engineer of considerable experience, and has worked with Maudslay, Sons and Field, Ltd., Thornycroft and Co., Ltd., and Vickers, Sons and Maxim, Ltd.

We offer Mr. Loughborough our sincerest congratulations on his appointment and our very best wishes for his success in the new work he is undertaking. He hopes to be able to start on his duties early next month.

Mr. H. P. Beasley, whose work for the A.C.U. for the last seven years has been fully appreciated by all with whom he has been brought into contact, has been promoted to the post of assistant secretary.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Calculating Engine Revolutions.

Sir,—Here is a formula of mine that I have always been meaning to send you for calculating the engine revs. when the speed and gear ratio are known; it is correct to within $\frac{1}{165}$th, and is taking for granted that a 26in. wheel is used.

Revs. per min. = 13 × gear No. × m.p.h.

Thus the revs. of a T.T.T., with a gear of 4-1, at 65 m.p.h., are as follows:

13 (constant × 4 (gear No.) × 65 (m.p.h) = 3,380.

If a 28in. wheel be used, put down 12 as a constant instead of 13; the error will only be slight.

LAURENCE STRAKER.

A Belt Tightening Tip.

Sir,—A few days ago I was motor cycling out to the golf course and found my leather belt slipping for want of tightening. I arrived all right, but on my return I couldn't get engine to start, and it was just about ten minutes before lighting up time, and I was at my wits end to know what to do to make it start without shortening the belt. An idea came into my head. I picked up a small piece of newspaper, soaked it in water, and placed it in groove of belt rim, started engine, and came home flying. I shall never be afraid of having a loose belt again, as I believe I could get home from any distance by this method. I have never heard of the tip, and if you think it worth while publishing, it would be a great boon to motor cyclists who use belt drive.

T. A. ROE, L.D.S.P.C., &c.

Peroxide of Hydrogen in Acetylene Generators.

Sir,—I make use of peroxide of hydrogen almost daily in my business as an antiseptic and deodoriser, so that the articles and correspondence in your paper have greatly interested me.

It is a fact that is well known to users of peroxide of hydrogen that it will not keep well unless preserved with a small quantity of acetanilide. The only chemists as far as I know who preserve it in this way are Messrs. Park, Davis, and Co., who manufacture it for the use of the medical profession. This solution answers perfectly for the purpose of increasing the light, and will keep well in the generator for weeks. This has been proved by experiment absolutely.

Of course, I have no interest in Messrs. Park, Davis, and Co. except as a satisfied user of their products.

E. W. MORRIS, M.R.C.V.S.

Sir,—A lengthy dissertation on chemical matters would hardly be interesting to your readers, nor, judging from the tone of a correspondent's letter, would it benefit him much. My article only mentioned the oxidation of hydrogen sulphide to sulphuric acid as a minor point, but I can assure him that—

(1) Although "oxidisation" of hydrogen sulphide by hydrogen peroxide may be a questionable matter, yet *oxidation* does take place.

(2) That free sulphuric acid cannot exist in contact with the lime is correct, but it is equally certain that the carbide container, which was referred to in my article, shows distinct corrosion after using hydrogen peroxide.

(3) I certainly did not mention any catalytic action of the peroxide, nor do I assert that peacocks lay eggs and for the same reason.

FRANK HARVEY.

Design of Cyclecars.

Sir,—Having seen several descriptions of cyclecars in your excellent paper, I have the pleasure of enclosing some plans of mine. I have specially designed this with an 8 h.p. Douglas engine. The chassis is brazed direct on the front and back axles. The engine, being well below the body, receives a full cooling draught, and the body is entirely insulated from the chassis by four C springs, and consequently does not receive any of the engine vibration or road shocks.

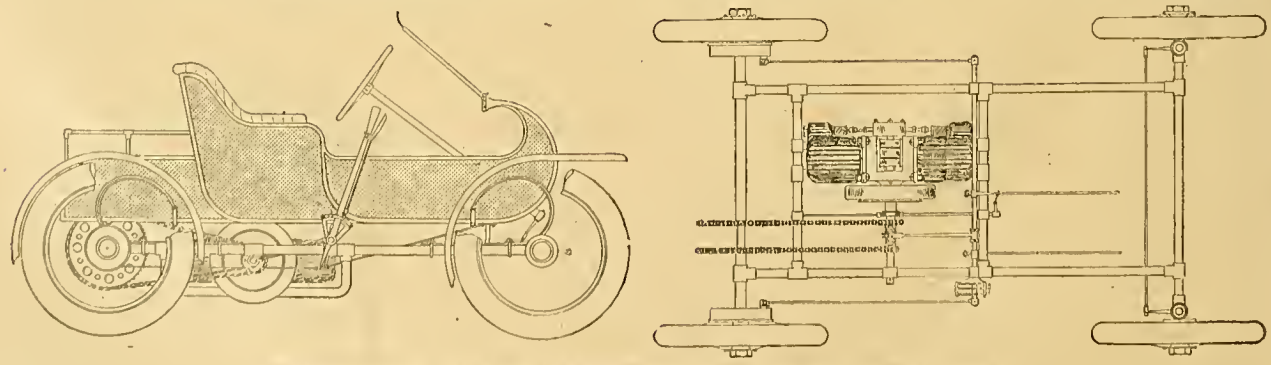
The steering is by wheel; the seating is for two, side by side, and very low. There is plenty of room for spares in the box at the back, and luggage on top.

The transmission is very simple, and has very few working parts. The drive is direct on high and low gears.

The engine transmits its power through a clutch to a shaft, on which are mounted two dog-clutches, engaging respectively two different sized chain wheels. The low gear chain does not revolve when high gear is in operation, so reducing wear of chain to a minimum. On the back axle two chain wheels are also fitted: the one for the low gear is mounted on a free wheel. No differential is required, only one wheel being driven.

By a simple arrangement a single gate lever is used for both brakes and gears. The clutch is foot operated, and the foot brake acts on the two rear wheels (the same as the hand brake), but the hand brake lever stops in its position when the pedal is operated.

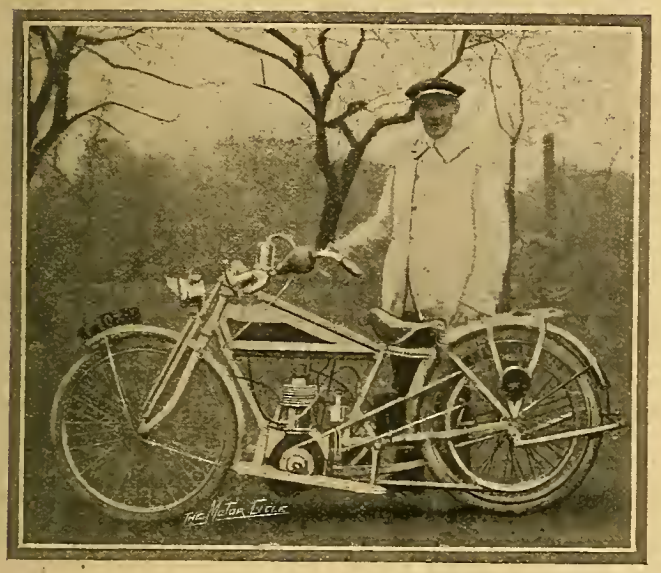
CH. OLLERS.



Interesting design of cyclecar with an 8 h.p. horizontal engine. (See letter signed Ch. Ollers)

A Converted High Frame.

Sir,—Seeing in your columns from time to time examples of cut down frames, I enclose an amateur photograph of my machine, which was a high framed Chater-Lea. My brother and I did all the necessary alterations, which included new tank, stand, carrier, footboards, long exhaust pipe, etc., left crank swings and right crank has a small sprocket attached in place of ordinary chain wheel, and by tipping up the right footboard with the toe the machine can be started on the stand either by hand or foot. The machine is now extremely comfortable.



The converted machine referred to in accompanying letter.

VINCENT N. STANLEY.

Consumption Comparisons.

Sir,—As stated in your leading article of March 14th, the comparison of performances on the ton-miles per gallon basis gives an apparent advantage to the car. Those who have followed the progress of the motor cycle will wonder whether the efficiency of the motor cycle is really as bad as this comparison would lead one to suppose, or whether this basis of comparison is fair to the motor cycle.

Is it not probable that the power required to propel the cycle or car is not directly proportional to the weight, but to some power of the weight?

Comparison of performances of a number of cars of similar form, but of varying sizes, at the same speed, say, 15 m.p.h., would decide whether petrol consumption is proportional to weight or to some power of the weight.

The two-thirds power of the weight is suggested as a probable approximation. This would give as a basis of comparison—

(Weight in tons) $\frac{2}{3}$ × miles per gall.

Using the figures in your leading article, viz., motor cycle and rider = 3 cwts. and petrol consumption 100 miles per gallon, as compared with car of 30 cwts. with petrol consumption of 20 miles per gallon, we get:

Motor cycle—$(\frac{3}{20})^{\frac{2}{3}} \times 100 = 28.2$ ton-miles per gall.

Car—$(\frac{30}{20})^{\frac{2}{3}} \times 20 = 26.2$ ton-miles per gall.

J.W.

Sir,—In your issue of March 28th, I consider that C.S.P. makes several unintentional mis-statements *re* the thermal efficiency of petrol engines. He says that in the case of a water-cooled engine, part of the heat, given to the water during the initial part of the explosion stroke, is given back again during the latter part of the same stroke. Now, how can this be? I do not know the temperature of the burning gases, but I do know that it must always be considerably higher than that of the cooling water, which can in no case be much above 212° F.

If any heat is ever given back to the expanding gases, would it not rather be in the case of the air-cooled engine, which, of necessity, must be much hotter than its water-cooled sister?

Does "C.P.S." forget the radiator, which is giving up the heat from the water to the atmosphere as fast as it can?

G. DOWSE, A.M.I.C.E.

Sir,—In reference to the editorial note at the foot of my letter, which you were good enough to insert in the issue of the 28th ult., may I suggest that the coefficient you use is in feet per second units, and mine in miles per hour? In the *Practical Engineer* pocket book for 1911 I find the wind resistance per square foot per mile per hour given as $.00492V^2$ and per foot per second $.00288V^2$.

The Eiffel Tower figure is .0036 in miles per hour, but a large allowance has to be made in applying a coefficient of this nature, derived from rectangular plates, to so complex a body as a motor cycle and passenger. I think it is clear that were the Eiffel Tower plates to have fixed in their rear a corrugated sided box a much larger coefficient would be obtained.

As regards the Brooklands figure, I believe insufficient regard was paid to the disturbance caused by the towing car. In fact, the only method of achieving reliable results is to do as Froude did with H.M.S. *Greyhound*—tow the body whose resistance is desired from the end of a very long boom, clear of the wake of the towing vessel.

Lastly, the internal evidence shows that the total resistance must be nearly double that obtained by the use of so small a coefficient as .002, or, alternatively, motor car engineers are designing extremely inefficient engines, for .15 gallon per horse-power hour is about 1.1 lb., whilst small crude oil engines run on .4 and large ones on .3 and even less.

W. R. GERALD WHITING.

[Our figures are in m.p.h., not in f.p.s. as our correspondent suggests. We are aware that some authorities give a higher constant (Carus-Wilson .00254 and D. K. Clark .00585). We quote from the R.A.C. system of handicapping: "It is luckily, however, fairly easy to obtain a reliable factor from existing data, at any rate a maximum factor. Both the 45 h.p. Mercédès and the 30-40 h.p. Daimler are well known to be capable of attaining a level road speed of 60 m.p.h. with an expenditure of about 45 h.p. If the efficiency be taken at 66% (which is, we also know from experience, a fair figure), 30 h.p. remains to utilisation at the road wheels. Of this, with the low figure of 40 lbs. per ton for rolling resistance, 10.4 h.p. is expended in overcoming road resistance, leaving 20 h.p. approximately to be utilised in overcoming the air resistance. If the area of a car be taken as 20 square feet, which is a very low estimate for it, then the factor becomes .0017 and the equation for $P = .0017V^2 20$. Though it is felt that .0017 may be a somewhat high figure, it nevertheless is recommended for adoption." In this case the h.p. is 20, and we get the following equation, k being the constant:

$$\text{H.P.} = 20 = \frac{60 \times 60 \times 20 \times 88 \times k}{550}$$

$$\text{or } k = \frac{20 \times 550}{60 \times 60 \times 20 \times 88} = .0017.\text{—Ed.}]$$

Sir,—With further reference to my notes on petrol consumption, I have, through the courtesy of Messrs. H. A. and C. R. Collier, been able to work out the ton-mileage of a Matchless motor cycle travelling at very high speed. In such a case the time in which a gallon of fuel is burnt is, of course, reduced, and the figures obtained are interesting.

The cycle and rider weighed 397 lbs., the wind resistance area is estimated at 5 sq. ft., the speed is taken at 70 m.p.h., and the petrol consumption was 14 pints per hour.

Now the wind resistance alone at this speed accounts for about 22.4 b.h.p., and, taking the consumption at .5 pint per b.h.p.-hour, this requires 11.2 pints, leaving 2.8 pints for other purposes.

Now, 397 lbs. driven 70 miles in an hour equals 12.35 ton-miles, and this was achieved with 2.8 pints of petrol, which works out at about 35 ton-miles per gallon.

This compares very favourably with the car at 37.5, calculated on the same basis.

If you neglect to deduct the b.h.p. absorbed by wind resistance, the ton-miles per gallon work out at only 7.06, which is absurd.

I venture to think, therefore, that the motor cycle is not to blame, for it is clear that to attempt to use the ton-mile formula without any factor to adjust it for speed and wind area is not only absurd but totally misleading.

This is very apparent if one considers the two results that would be obtained on a motor 'bus travelling at 8 and 24 m.p.h. respectively. As a matter of fact, to speak of ton-miles per gallon as at present computed is like speaking of nominal horse-power—a term we are all anxious to kill. Can we not kill them both and bury them together?

A. H. MITCHELL.

The A.C.U. and the M.C.P.A.

Sir,—We think that at this stage in the history of the A.C.U. it is very important to make known, especially to members of affiliated clubs and prospective touring members, the *raison d'être* for the M.C.P.A., and what it is aiming at. Briefly then, we came into being as an Association because

(a) We consider that the A.C.U. up to the present has lamentably failed to make good its undoubtedly strong claim to the support of motor cyclists, as a whole, and consequently has failed to attract members in anything like the numbers that the movement warrants.

(b) The A.C.U. has hitherto failed to keep sufficiently in touch with its affiliated members—especially those of the provincial clubs—with the result that unnecessary friction has arisen, powerful clubs have refused their support, the interests of provincial clubs have suffered, and the movement has been weakened in consequence.

(c) The policy of the A.C.U. in regard to competitions has been vacillating and variable; it has reserved to itself competitions which should have been left to the affiliated clubs—thereby competing with its own constituent members—and *diffused* its executive energies, instead of *concentrating* them upon such classic events as the Isle of Man races, six days' trials, etc.

One unjust criticism of the movement is that the M.C.P.A. is formed by, and for, men who have "axes to grind," as evidence of which stress is laid upon the number of members connected with the trade.

The M.C.P.A. is formed with the one object of making the A.C.U. a body to be proud of—useful and powerful in all matters affecting motor cyclists. It was promoted by private members. It is happy in having the assistance and hearty co-operation of several prominent trade men. It will always support adequate representation of the trade upon the General Committee, but it will resolutely oppose any effort to take the government out of the hands of the private owner.

The A.C.U. is primarily an organisation of private owners, and the trade has sufficient commonsense to recognise fully that position, notwithstanding what has been stated to the contrary.

The unworthy suggestion that we have "axes to grind" can be dismissed with the contempt it deserves.

At the annual general meeting of the Council, one of our critics asked why our members already on the A.C.U. committee had not made the A.C.U. what it should be. The answer is that, although some of our members have worked—and worked well—for reforms in the past, they have been overweighted by the *personnel* rather than the numbers of the opposition.

We need, and ask for, the support of the affiliated clubs, as we have asked for and received the full support of the private members. We are sending out a list of men known to be keen motor cyclists whom we suggest should be elected to represent the affiliated clubs on the General Committee.

We hope the provincial clubs will realise that our desire is to have them *actively* represented. It is of no use electing a member of a remote provincial club (although he may as an individual be better than any other man on our list) unless he really can and will attend committees. The better plan is to elect a man residing in or near London, and then see that he fully represents the club's wishes and opinions on every occasion.

If this be done, we venture to think that we shall say good-bye to the friction and failures of the past, and, with a united, energetic committee backing up the new secretary, shall lift the A.C.U. into the position it should occupy in the future.

OTTO THOMAS, Chairman M.C.P.A.
W. G. McMINNIES, Hon. Secretary M.C.P.A.

Experimental Work in Variable Gears.

Sir,—Regarding "Ixion's" comments on experimental work in variable gears in the issue of March 21st, we wish to back up his statements that inventors and engineers are working behind the scenes on this one important factor.

It will be in the near future when "Ixion" will see his ideal variable gear in actual existence. We have been designing and experimenting for some time past a gear invented by Mr. J. Rowe, Ilford, which will shortly be put on the market, and known as "P. and P." gear. This will be adaptable to fit all engines without alteration. It has no jockey pulley, neither is it necessary to use a sliding back wheel. The gear fits direct on to the engine-shaft just like an ordinary pulley. It is infinitely variable, and is combined with a free engine. The whole is self-contained and controlled (belt slack taken up, gear ratio altered, etc.) with one lever.

pp. PACKER AND PRENTIS.
J. H. PRENTIS.

Pillion Carriers.

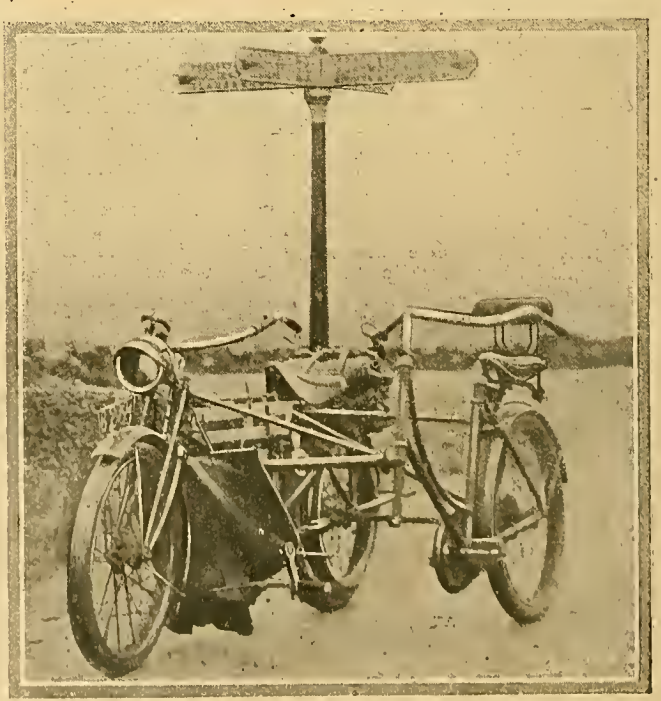
Sir,—In reply to Mr. G. H. Wait's letter in your issue of March 21st, my experience goes to prove that carrying a passenger pillion fashion is not at all dangerous, and that the slight risk, wear, and tear, etc., are not comparable with the extra pleasure to the motor cyclist or passenger.

Naturally, if the rider takes corners at 30 m.p.h., and the passenger enjoys the sensation to the extent that he allows him to travel at this speed, then they must both be on the look-out for trouble; but taking Mr. Wait's two points, first regarding the carrier not being strong enough.

This is the first thing the rider who contemplated doing any pillion carrying would assure himself of by having, say, two extra struts fitted

Now the second point, regarding back tyre not being strong enough. Has Mr. Wait any costs or data to back this statement? It may be of interest to him to read the letters of mine you published in your issues of October and December 28th, 1911, and to see the photograph of passenger and myself. If he will go carefully into my running costs he will find that I bought only one tyre during a season's running of over 11,000 miles, this being a T.T. Hutchinson, and that one of the two original ones was retreaded, but this is with a 2½ h.p. A.J.S., not a 3½ h.p. machine, which I pointed out in my letter requires considerably more for tyre upkeep.

BASIL ADAMS.



Several readers having asked for further particulars regarding the cycle passenger attachment described in the letter signed "A. L.," and published March 14th page 271, we reproduce herewith an illustration of the combination which is the work of A. Campbell, West Lothian, N.B.

CURRENT CHAT

TIME TO LIGHT LAMPS.

April 11th	... ...	7.47 p.m.
,, 13th	... ...	7.50 ,,
,, 15th	... ...	7.53 ,,
,, 17th	... ...	7.57 ,,

Next Meeting of the B.M.C.R.C.

The next meeting of the B.M.C.R.C. at Brooklands is fixed for Saturday, April 20th. Four events are down on the programme—(1) Time trials; (2) three-lap 500 c.c. scratch race; (3) five-lap cyclecar race; (4) one hour all comers' race.

Weather Forecasts.

The A.A. and M.U. have arranged for information as to weather conditions to be telegraphed to their head office every morning from various points on the main roads round London. This information will be available to members at 9 a.m. on application either by telephone or telegram both week days and Sundays.

Brighton to Worthing Road.

A correspondent in South Lancing complains of the very bad surface of the road along the shore from Brighton to Worthing. Between Shoreham and Southwick repairs were in progress last week, and the new metal was laid four inches deep the full width of the road and unlighted. The lower road through Shoreham, Southwick, and Fishergate is unfortunately no better.

R.I.A. Notes.

Schemes for the improvement of Cogan Hill, Penarth; the easing of the corners at the north and south ends of Healdon Road, Whitchurch, Glam.; the erection of signs on each side of the Church Road crossing of the Merthyr Road, Whitchurch, and the efficient lighting of the first central tramway standard at the entrance to the city of Cardiff were among the more important matters dealt with by the South Wales Centre of the R.I.A. at its last meeting.

Air-cooled Engines and Low Temperatures.

On the occasion of a lecture by Sir Ernest Shackleton, at the R.A.C., on his last Polar Expedition, he referred to the trouble he had experienced through overheating of the air-cooled engine employed on the motor sleigh used by his party. There seems to be no doubt whatever that a low temperature has comparatively little effect upon an engine cooled by air, and it is interesting to note that Capt. Scott's motor sleigh was so much troubled by this failing, even though the temperature was much below zero, that the sleigh had to be abandoned altogether. The opinions of readers in very cold and very hot countries would prove of great interest, especially as so many cyclecars are air-cooled.

A Belgian Motor Cycle Trial.

The Moto Club Liègois, Hotel Schiller, Place du Théâtre, Liège, is organising a reliability trial for motor bicycles on May 25th; entries close May 16th. There will be three classes—(1) Up to 300 c.c.; (2) 400 c.c.; (3) over 400 c.c. for one-cylinder machines. The motor cycles must be equipped as touring machines, with spring forks, efficient mudguards, two brakes, stand, carrier, lamp, and generator. Silencers must be fitted, but cut-outs may be used. Auxiliary exhaust ports may not be fitted. During the trial there will be a speed trial on the level, a speed trial up hill, and a starting test up hill. In the speed trial on the level Class 1 will be expected to do 45 k.p.h.; Class 2, 50 k.p.h.; Class 3, 55 k.p.h. In the hill-climb the following maximum speeds must be maintained: Class 1, 24 k.p.h.; Class 2, 28 k.p.h.; Class 3, 32 k.p.h. In the starting test on the hill competitors must be in their saddles at 15 metres from the start and they can pedal for the following 15 metres afterwards. The route will be from Liège to Bastogne (lunch), and Bastogne to Bouillon. Next day, from Bouillon to Phillipeville (lunch), and then back to Liège. At the luncheon (one and a half hours) and other stopping places the machines will be parked in enclosures, when nothing may be done to them.

SPECIAL FEATURES.

HOLIDAY EVENTS (illustrated).
New Racing Engine.
Future of the A.C.U.

The F.I.C.M.

A proposal is on foot to re-establish the International Federation of Motor Cyclists, or, to give it its correct title, the F.I.C.M., which signifies Fédération Internationale des Clubs Motocyclistes. This body was originally founded immediately following the first International Cup Race with the object of encouraging and looking after international events. The clubs affiliated were the Auto Cycle Union, the German Club, the Austrian Club, the French Club, and the Danish Club. As the interest in motor cycling died away on the Continent, first one club and then the other dropped out, and finally the A.C.U. alone paid its subscription, which it did until 1908.

The result is that £127 of the funds now remain in the possession of Mr. G. F. Sharp, who acted as honorary treasurer to the Federation. Of this, about half is due to the A.C.U. The idea to re-establish the Federation to control international events is a good one.



A MOTOR CYCLE WEDDING.

W. E. Grange, a well-known Harrogate motor cyclist, was married on Easter Saturday, riding to church on his Bradbury and afterwards taking his wife home on the pillion seat. Witnesses of the happy event also journeyed to church on a motor cycle and sidecar. Later in the morning Grange took his wife to the Leathley Bank Hill Climb, and made fastest time in Class 3.

Turning the Tables at Oakamoor.

H. Riddell (8 h.p. Blumfield) won Class 4 at the Oakamoor hill-climb, scoring over George Brough (8 h.p. Brough), who had his revenge in the all-comers' event by reversing the order.

Accident to V. Olsson.

Vivian Olsson, who had the misfortune to meet with an accident on Easter Monday, may be sure of our deepest sympathy, and that of a very large number of motor cyclists. He is a well-known competition rider, and popular wherever he goes.

Sidecar Records.

When F. W. Barnes created four new sidecar records at Brooklands on the occasion of the first B.M.C.R.C. monthly meeting, he used a side by side valve twin Jap engine of 85.5×85 mm. on his Zenith. Barnes's average speed for the 100 miles was in the neighbourhood of 50 m.p.h.

Spanish Motor Cycle Race.

Vernon Taylor went to Spain last week-end to compete in a road race on his Rudge. He says he met with two other Rudge riders, and they had some exciting racing over a very dangerous course with frightfully right angled corners. Taylor says he had two pieces of rock thrown at him—one hit his front wheel, the other cut his eye. There were thirty in the race, some from Paris. The course was Bilbao to San Sebastian.

Motor Cycling in Australia.

A series of open hill-climbing contests was held by the South Australian Motor Cycling Club up Greenhill Road, over a course measuring 4 miles 148 yards. The winner was H. H. Ragless (3½ h.p. Triumph), who covered the course in 7m. 26⅗s., thereby winning his fifth consecutive gold medal. First place on formula and second place on speed by gained by N. K. Torode on the same make of machine. The amateur class was won by H. Crowle, who secured the Continental twenty guineas rose bowl.

Motor Cycle Signpost.

Quite a novelty in signposts has been erected at Masons Hill, Bromley, on the Sevenoaks Road. Over each arm appears a large model of a motor bicycle, aeroplane, and car. The arm pointing in the Sevenoaks direction reads "Hastings, Paris." In the reverse direction "London, John-o'-Groat's," whilst a third arm, over which is a model motor cycle, reads, "Croydon, Brooklands, and Land's End." It was made by the proprietor of an adjacant garage, and attracts a good deal of attention.

FUTURE EVENTS

April 13.—Oxford M.C.C. Hill-climb.
" 13.—Liverpool A.C.C. Open Reliability Trial.
" 20.—B.M.C.R.C. Race Meeting.
" 20.—Bristol M.C.C. Open Hill-climb
" 27.—Bristol B and M.C. Open Hill-climb.
" 27.—M.C.C. Open Silencer Trial.
May 1.—Birmingham M.C.C. Open Hill-climb.
" 4.—Coventry and Warwickshire M.C. Open Reliability Trial.
" 4.—Mersey M.C. Open One-day Trial.
" 4.—Dublin M.C.C. Open Reliability Trial.

Fined for Obstruction.

At Gloucester County Police Court, on the 6th inst., Charles de Lisle Wells, farmer, of Noke Farm, Hucclecote, was summoned for wilful obstruction by Sydney D. Lane. Complainant was driving a sidecar, and when about twenty-five yards from defendant he sounded his horn. Defendant looked round, and then deliberately pulled his horse across the road on to his wrong side, and an accident was narrowly averted. J. O' N. Martin corroborated, and said that the action of defendant, about whose conduct complaints had previously been made, appeared to be intentional. Defendant denied the charge, but was very properly fined £2 and costs. We congratulate both the complainant and the Bench.

Police Trap.

We have received information of a police trap working on the Harrow Road on the south side of the hill. There is another at Stilton, on the Great North Road.

A Regrettable Accident.

A fatal accident to a sidecarist occurred at Birmingham on Saturday last, the unfortunate driver, E. J. Berry, colliding with the kerbstone in attempting to avoid a tramcar and being thrown heavily.

Motor Cycle Road Guide.

One of the inspectors of the newly formed R.A.C. road guides attracted attention on the Sevenoaks and Maidstone roads during the holidays. He rode a new Rudge motor cycle, and wore a smart grey uniform with peak cap.

Eastertide.

There was a record number of motor cycles on the road at Easter. Except for the strong winds, which churned up the dust in clouds, riding conditions were exceedingly good. The enormous popularity of the sidecar cannot fail to have impressed the most casual observer.

A Misstatement.

The Wilkinson T.M.C. Co. have written us to point out there is no truth in a statement made elsewhere that they intend to use a slide-valve engine for their 1913 models, being quite satisfied with the four-cylinder water-cooled engine now being used.

Speed Limits in Ireland.

An application has been made to the Irish Local Government Board by the Lisburn Urban District Council to confirm a byelaw limiting speed of all vehicles within the urban area to nine miles an hour. The L.G.B. hold the view that the byelaw could only be confirmed in regard to the entire urban district and could not be limited to certain strects, and if a speed limit were required on the main streets application should be made under Section 9 of the Motor Car Acts. The matter is now under the consideration of the Irish L.G.B. and the Irish A.C.

CLIMBING HOLNE CHASE IN THE LONDON-LAND'S END-LONDON RUN.



(1) On the hairpin bend, near Ashburton.

(2) G. B. Fry (three-speed Quadrant) on the steepest gradient.

THE RICHMOND MEET.



Group of motor cyclists assembled around the cross in Richmond Market Square.

ALTHOUGH the Northern League of Motor Cyclists has been disbanded, and no official arrangements were made for holding the now old-established meeting at Richmond this year, nearly as many as ever turned up, as in previous years, and spent the greater part of last Friday there. An exceptionally strong head wind faced the riders from the east and made it very unpleasant riding down the Great North Road, and, in addition to this, the morning dawned dull and inclined for rain, which, however, kept off.

This year the visitors were later than usual, but towards noon they arrived thick and fast, and by one o'clock the Market Square had all the appearance of previous years. Amongst the first arrivals we noticed Mr. Geoffrey W. Liddle, that energetic member of the Middleshro' Club, who is, we believe, the originator of the gathering. Mr. Liddle's club had, we were informed, the largest muster this year, and had run a competition to Richmond, which example had been followed by the Leeds, Pontefract, Doncaster, and other clubs.

The catering arrangements this year were very bad, and it was exceedingly difficult to get a meal anywhere.

A great many of the machines had sidecars attached, and very few lightweights were noticed, although most makes of machines were represented. The cyclecars present were two Morgans and a Bradford made runabout, Mr. F. Langton (Leeds M.C.C.) had also a T.M.C. and sidecar.

This year there was no meeting in the Town Hall, so the visitors were off on the homeward journey a little after three o'clock.

The clubs had, as usual, arranged competitions *en route*, Middlesbrough having a big muster of members present, whilst Darlington and District ran a good second. Other clubs that mustered in force were: Leeds, Pontefract, Newcastle, Hull, and Bradford. The Leeds speed-judging competition was won by F. Green, who judged the twenty-two miles within 1¼ minutes (early).



Motor cyclists leaving Richmond after the Good Friday meeting.

STAXTON BROW HILL CLIMB.

THIS annual fixture, held conjointly by the Harrogate and Scarborough clubs, and open to their members only, was duly contested on Easter Monday. There were six classes for motor cycles, but one of these was cancelled. Classes 1, 2, 4, 6, and 7 were decided on formula.

Class 3 was decided on time. The results were:

CLASS 1.—Standard lightweights not exceeding 350 c.c.

1. F. Mackay (2¾ Humber)
2. J. Mackay (2½ Singer)

CLASS 3.—Any single on time.

1. D. Gill (3½ Calthorpe)
2. D. Bradbury (3½ Norton)

CLASS 4.—Standard touring singles.

1. D. Bradbury (3½ Norton)
2. J. L. Emmerson (3½ Norton)
3. G. H. Storey (3½ Norton)

CLASS 6.—Sidecars and cyclecars.

1. B. Gash (own make)
2. Vernon Gash (Zenith and sc.)

CLASS 7.—Any machine not later than 1909.

1. J. H. Dale (1908 Triumph)
2. W. J. Turner (1909 Triumph)

The final for the Tranmer Trophy was won by D. Bradbury (1912 3½ h.p. Norton), whose speed averaged 34.8 m.p.h against a 50 m.p.h. gale of wind.

HILL-CLIMB AT LEATHLEY BANK.

Successful Inter-club Event in Yorkshire.



Two aspects of the bad corner on Leathley Bank.

(1) K. Clark (3½ Coran-Jap) grazes the bank at the roadside. (2) E. R. Davies (3½ Triumph) third, negotiating the corner with good judgment.

THE open hill-climb arranged jointly by the Harrogate and District M.C.C. and Herts County A.C. at Leathley Bank last Saturday proved a great success. The entry list totalled over 100; the sport was good and exciting, Dame Fortune was kind in the matter of weather, no untoward accident occurred, and the hundreds of spectators who congregated near the summit seemed well pleased with their afternoon's outing.

Leathley Bank is a long climb situated between Otley and Harrogate, and will be recalled as the test hill in the A.C.U. penalty run a couple of years ago. It commences with a long gradual rise, with easy curves, then a level stretch, a right angle turn to the left, which leads to the steepest section, which was approximately 1 in 5½. The course measured threequarters of a mile in length. It is worthy of mention that both the organising secretaries were competing—C. C. Cooke on his Triumph and H. W. Fortune on a Brown. Both did well.

After the weighing operations and examination of the machines at Beckwithshaw in the morning, a move was made for Leathley, four miles distant. Practising was permitted till 1 p.m., and during this period an exciting incident occurred. Miss Berend, who had driven her O.K.-Precision sidecar from town in the inter-team reliability trial, had lent it to a lady friend to drive over to the hill. The brakes on the machine required adjustment, and on the 1 in 5½ gradient the machine got out of hand, the frightened driver and her passenger shrieking "Can't stop" as they tore down the hill at a fast pace. The machine was travelling too fast for anyone to dash out and check its flight, and to avoid a serious accident the fair driver had to round the bad bend at over 20 m.p.h. This she did with great skill, the helpless spectators looking on with bated breath. Neither wheel lifted, but the tyre was almost wrenched off.

Mile a Minute Speeds Uphill.

A fairly prompt start was made with the hill-climb. A flying start was allowed, and with a boisterous wind behind it was estimated that some of the competitors exceeded a mile a minute in parts. A regulation which caused a good deal of dissatisfaction was the one prohibiting competitors to touch the ground with their feet in rounding the bends. It has become quite a habit with most of the well-known riders, and one or two did it unconsciously and were, unfortunately, disqualified.

Class I., for lightweights, was chiefly remarkable for the speed of H. C. Newman's Ivy, which has the new long stroke 2¾ h.p. Precision engine. He was faster than the majority of 3½ h.p. riders. Miss Berend's O.K. had a similar engine, and her time was good considering that she grazed the bank at the corner and almost stopped. She was applauded for her skill in recovering. The officials interpreted the rules very strictly, and a number who used overhead valve engines in the standard classes were disqualified. F. W. Barnes (Zenith) was one of these. P. H. Goddard (Douglas) pedalled and suffered a like penalty. F. G. Edmond's exhibition on a 2 h.p. Humber was deserving of great praise. For such a diminutive engine to account for 1 in 5½ with a single gear is an undoubted proof of efficiency, though Edmond's daring corner work undoubtedly helped to win him first place.

Formula prizes only were awarded, and we give the order of the first six.

CLASS I.—Standard lightweights up to 350 c.c.

		Fig. of merit.	Time.
			M. S.
1.	F. G. Edmond (2 Humber)	70.94 ...	1 32⅘
2.	H. Berwick (2¾ New Hudson) ...	85.25 ...	1 20
3.	H. C. Newman (2¾ Ivy Precision) ...	88.89 ...	1 14
	Jim Mackay (2½ Singer)	89.99 ...	1 31⅕
	E. R. Davies (2¾ Hazelwood) ...	90.32 ...	1 43
	C. A. Nettleton (2¾ New Hudson) ...	91.53 ...	1 53⅕

Disqualified for using overhead valve racing type of engine:

F. W. Barnes (2¾ Zenith) ... ... 68.99 ... 1 17⅘



H. C. Newman (2¾ Ivy Precision) finishing a fine ascent. He was the most successful competitor.



There was a remarkable occurrence at the Leathley Bank hill-climb. J. L. Kershaw (3½ h.p. Rudge) overshot the corner, ran up the bank much higher than depicted in the snapshot, and dropped perpendicularly on to the road again unscratched.

In the T.T. lightweight class, J. Dudley had the cylinder head blow off, grazing his leg. The winner's time was slightly slower than in Class I.

CLASS II.—T.T. lightweights up to 350 c.c.

1.	F. W. Barnes (2¾ Zenith)	68.99	...	1 17⅘
2.	H. G. Dixon (2¾ New Hudson) ...	86.04	...	1 27⅕
3.	Jim Mackay (2½ Singer)	88.02	...	1 29⅕
	H. C. Newman (2¾ Ivy Precision) ...	89.03	...	1 14⅖
	Fred Mackay (2¾ Humber)	96.06	...	1 33⅘

Nine Competitors Disqualified.

The class for standard single-cylinder machines up to 600 c.c. brought out thirty-one competitors, of whom nine were subsequently disqualified for riding semi-T.T. machines. The nine included the four fastest riders, so that W. E. Grange (Bradbury) was lifted from fifth to first place. By the way, Grange was married that morning, and took his wife to the hill on a pillion seat attached to the back carrier. Slaughter (L.M.C.) was going splendidly, but took the corner too fast and grazed the bank which slowed him considerably on the all important steep stretch. Many spoilt their chances in this way. A most remarkable incident occurred later. J. L. Kershaw (Rudge) rounded the bend at a perfectly crazy speed, shot up the grass banking, sweeping aside bushes, and then dropped perpendicularly a couple of yards on to the road again, neither his machine nor himself damaged in the slightest. H. V. Smytheman (Ivy) promised to emulate this feat, but his wheels met something hard, and he came to a sudden stop.

CLASS III.—Standard singles up to 600 c.c.

1.	A. J. Dixon (3½ Zenith)	92.90	...	1 17⅗
2.	D. Bradbury (3½ Norton)	108.41	...	1 27⅗
3.	J. Slaughter (3½ L.M.C.)	108.63	...	1 21⅕
	C. A. Nettleton (3½ New Hudson) ...	109.13	...	1 40⅗
	W. E. Grange (3½ Bradbury)	109.52	...	1 12⅖
	B. D. Shaw (3½ Norton)	112.63	...	1 21⅗

Six were disqualified for not conforming to the rules regarding standard pattern machines, including the two leaders:

H. C. Newman (3½ Ivy-Precision) ...	89.06	...	1 3⅕
J. Woodhouse (3½ Regal-Precision) ...	89.21	...	1 6⅗

There was nothing exceptional in the class for T.T. singles, though it was remarked that the Triumph representatives, Newsome and Cheshire, had a different style of cornering from the others, and that was to rush at full speed nearly to the corner, lift valve, and apply brakes, and, as soon as the course was clear, drop the valve again. This was by far the safest way, and it also gave the machines a chance to pick up, which they did splendidly.

CLASS IV.—T.T. singles.

1.	F. W. Barnes (3½ Zenith)	89.10	...	1 13⅕
2.	H. C. Newman (3½ Ivy Precision) ...	89.15	...	1 3
3.	J. Woodhouse (3½ Regal Precision) ...	90.3	...	1 7⅗
	W. F. Newsome (3½ Triumph) ...	102.6	...	1 4⅗
	D. Bradbury (3½ Norton)	102.9	...	1 23⅕
	J. Slaughter (3½ L.M.C.)	104.9	...	1 18⅖

Dearth of Multi-cylinder Machines.

E. A. Colliver (6 h.p. Zenith) rode with great skill, and rounded the bend with excellent judgment. He beat Barnes and Fawcett on similar machines for speed, and protested emphatically when informed that he touched the ground with his foot at the corner. He was ultimately awarded the premier position.

CLASS V.—Standard multis.

1.	E. A. Colliver (6 Zenith)	122.1	...	1 2⅘
	H. E. Taylor (4½ F.N.)	135.6	...	1 54⅕
	W. Fawcett (6 Zenith)	140.3	...	1 12⅕
	Disqualified for using feet round corner:			
	F. W. Barnes (6 Zenith)	122.5	...	1 4⅘

There were about seven competitors in the passenger class, and one of these stripped his timing gear in descending the hill. By far the best exhibition was by H. G. Dixon on a 3½ h.p. three-speed New Hudson, with H. Berwick in the sidecar. Spectators could hardly believe their eyes as they watched this 3½ h.p. single cylinder approach at a faster speed than some of the bicycles. Once round the bend the machine even gathered speed, yet we witnessed several machines up to 7 h.p. fail.

CLASS VI.—Passenger machines.

1.	H. G. Dixon (3½ New Hudson and sc.)	85.3	...	1 43
	F. W. Barnes (6 Zenith and sc.) ...	97.2	...	1 23⅖
	C. M. Hellier (8 G.W.K. runabout) ...	101.9	...	2 0⅕

The "any single" class was captured by Howard Newman, who made the fastest ascent of the single cylinders during this ascent, though hard pressed by P. Weatherilt, who made a daring climb. Still, Newman lost the award for using his foot at the corner. F. Mackay (Singer) made a practice of grazing the bank every time he came up. H. J. Pooley (Premier) was going well when, at the corner, his machine slid from under him. Result on time:

CLASS VII.—Any single.

	c.c.	m.	s.
P. Weatherilt (3½ Zenith)	493	... 1	3
W. F. Newsome (Triumph)	499	... 1	4
E. W. Cheshire (Triumph)	499	... 1	5⅘
C. C. Cooke (Triumph)	499	... 1	10⅗
H. G. Dixon (New Hudson)	499	... 1	11⅘
K. Clark (Corah-Jap)	493	... 1	12⅗

Fastest time: H. C. Newman (Ivy Precision), 1m. 2⅖s.

F. W. Barnes, riding the 8 h.p. Zenith, accomplished the fastest climb in the "any multi" class—60½ sec.—travelling at a terrific speed on the lower stretches, though negotiating the corner cautiously. Result:

CLASS VIII.—Any multi.

F. W. Barnes (6 Zenith)	986	... 1	0⅕

E. A. Colliver (Zenith), 63s., disqualified for touching ground with his foot.



C. M. Hellier (G.W.K. Cyclecar) making a neat ascent of Leathley Bank.

A.C.C.F. CIRCUIT DE PARIS.

All the fourteen English competitors duly turned up at Charing Cross on Friday last. There was, of course, a good number of people travelling by the boat train, and consequently it was somewhat of a rush getting the machines registered through to Paris. Several had left things to the last minute, and Mr. Beasley, the Auto Cycle Union Assistant Secretary, had to put in an appearance on Good Friday morning with tickets and International passes for those who had not obtained them before hand. Pratt, Olsson, and several other well-known riders



Competitors passing through Clement de Vay.

came to see the English team off. Kilpatrick had ridden up from Portsmouth in the morning with his friend Heighton, and had lost no time in doing so. He passed through Guildford in the early hours at a speed slightly in excess of that allowed by law, and was promptly called to book by a policeman. "Can't you see this plate?" said the redoubtable rider, pointing to the G.B. plaque. "Beg pardon, sir," said the man in blue, and saluting he let him go. The South-Eastern Railway people were evidently somewhat muddled owing to the Easter rush, as will be seen from the following examples of weighing and calculation: Rex Mundy's Singer weighed 172 lbs. and cost £1 5s. 6d., Lister Cooper's Triumph weighed 200 lbs. and cost £1 6s. 9d., Cook's A.S.L. weighed 188 lbs. and cost £1 16s. 4d.; the attention of the A.C.U. will be called to these figures.

Confusion.

Although the competitors gave considerable assistance to the railway staff at Folkestone, they were not allowed to touch the machines at Boulogne, as, being registered, the railway company were responsible. At the French port McMinnies and Griffith ascended on the crane platform with their machines, and as they went up the porters shouted, "Adieu, Monsieur Blériot." The Paris train was divided into two portions. Five of the men caught the first part, and as the crossing had been a rough one, the boat was late, and there was no time for lunch, they had to go hungry to Paris. These five competitors were duly met by Messieurs Debailly, Buissard, Lecomte, and Fenton, and a few minutes afterwards the second batch arrived. These took their machines straight into the customs house and so missed those who were there to meet them. This caused some confusion, and had it not been for Davis, a friend of Fletcher, it might have gone badly for this section of the party. However, all's well that ends well, and it eventually turned out that the English party was distributed among three hotels within a quarter of a mile of one another.

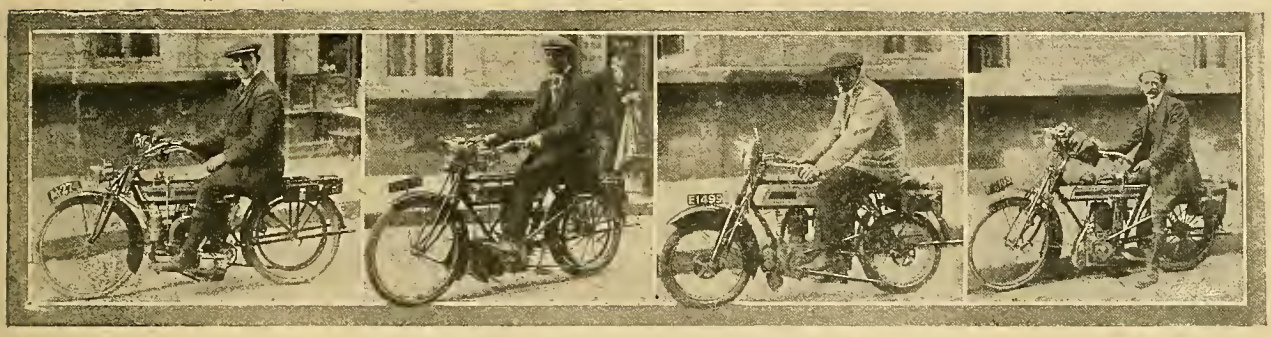
On Saturday afternoon the sealing took place at the Garage Edinbourg, kindly placed at the disposal of the Auto Cycle Club de France by its proprietor. On Sunday, the 7th inst., we all made an early start, and duly reached the official starting point, the Porte Dorée. No sooner had we got our pass-out checks from the Octroi, declaring the amount of petrol in the tanks, than the *gardiens* of the Forest of Vincennes refused to allow us to proceed, and we had perforce to make for the Porte de Charentois, where a start was eventually made at 7.30 a.m.—half an hour late.

Pave at the Start.

The men were started in groups of four at one minute intervals, and once under weigh there ensued some miles of the worst *pavé* to be found in France. Soon, however, the roads improved, and we made good progress till Villeneuve-St. Georges was reached, when the surface again became appalling. The English motor cycles stood the racket fairly well, but my stand refused to remain *in situ*, and had to be fastened with string. The road was alternately good and bad till we reached Fontainebleau, where was the first control; this was prettily situated in the forest. It did not matter how early we were, all that we had to do was not to leave before the hour stated on our time cards. Once we had left Fontainebleau the roads became much better, and one and all enjoyed the spin. Reed's Dot was suffering from over-heating, but the rest of the team were happy. Montereau was the next control, at which only the sheets were signed. No times were taken in the next section ending at Coulommiers. The English team lost three men. Cook's back tyre burst; he fell and broke the frame. Reed had a sparking plug blown out and the point entered the tank, and the leakage of petrol resulted in his machine being burnt up. Lake retired with gear trouble. Mr J. R. Nisbet, who was spending the week-end in Paris, came and rendered the Englishmen valuable assistance. Another incident was the catching fire of my own machine, due to petrol being spilt on the silencer while the tank was being filled. Beyond the traversing of some bad *pavé*, at the beginning of which I found Kilpatrick with tyre troubles—a hitch which caused his ultimate retirement—nothing further exciting happened. At Compiègne not a bed was to be had, so most of us took train to Noyou, where the Auto Cycle Club had thoughtfully engaged rooms. We only had about five hours sleep, as we were called at 4.30 a.m., and taxis supplied by the Club conveyed us back to Compiègne. It was raining, and very cold, when we started at 6.30 a.m., while a strong wind blew dead against the competitors. Several complained of bad petrol, and my own carburetter was far from happy. Dover was soon to be put out of the running with tyre trouble, and had it not been for an English tourist, who lent him a spare tube, he would have fared badly. My



G. Griffiths (3½ h.p. Rudge Multi) travelling well in the hill-climb at Montanglaust.



SOME BRITISH COMPETITORS IN THE CIRCUIT DE PARIS.
F. Dover (3½ Premier). H. Lister Cooper (3½ Triumph). E. W. Cook (A.S.L.) G. L. Fletcher (2¾ Douglas).

bad time came next. The vent in my filler cap became choked with dust and caused symptoms of partial failure, which I put down to a choked jet. The day before the float was also punctured, and the gear rod needed adjustment. The bad roads, of course, started the float trouble, while the other small details are such as would easily cause delay to one who was riding a strange machine. This day's run was chiefly noteworthy for the splendid roads we traversed. Bad *pavé* was comparatively rarely met with, while the scenery on both days in such places as Fontainebleau, Chateau-Thierry, Compiègne, Vernon, and Rambouillet was really beautiful.

A Series of Mishaps.

Lunch was served at Vernon, and at the foot of the pretty descent to the town I found Heighton in trouble. His tank was almost empty, and when he jacked up the machine no petrol would reach the carburetter. I gave him some of the precious fuel, and was able to save another man to the English, now doomed to lose another rider, the ill-fated Rex Mundy, whose back wheel collapsed after his tyre had become deflated. Hillman tried conclusions with a dog at Les Thilliers and hurt his arm. As regards the Frenchmen, the riders of the Griffons suffered a good deal of trouble. They were followed by a car, the occupants of which, against the rules, doled out coils or accumulator when required. The Clément, which followed Enfield lines, ran well, and were much admired. Fenton had chain trouble, while the lightweight New Hudson was frequently seen stopped through carburetter trouble.

The *pavé* entering Versailles was execrable, but we managed somehow to survive it. Here the survivors' machines were placed in an enclosure. Pernette (La Française) arrived first, and someone presented him with a bouquet of flowers, which ought not to have been allowed, as nothing was to be gained by arriving first.

The following arrived at Versailles, where the trial virtually ended: Class I., up to 225 c.c., one N.S.U., two Motosacoches, and one New Hudson. Class III., up to 350 c.c., three Clément, of which one was ridden by Fenton, one N.S.U., two Peugeots, one Griffon, a Motosacoche, one Enfield (Bishop), and a Douglas (Fletcher). In Class IV., up to 500. Lister Cooper (Triumph) was the sole entrant to finish, while in the open class a Française alone finished. In the amateur class the Englishmen scored, Boileau (Douglas), McMinnies (Triumph), Hillman (Zenith), and Griffiths (Rudge), completed the course. In the Voiturette Class the Cohendet and Bedelia finished.

Personal Notes.

Although the Douglas I rode gave a little trouble, it behaved splendidly, and stood up to its work well, giving ample power, and, on account of its light weight, was most convenient to handle on the journey. Griffiths's variable Rudge, the tyre of which collapsed on the first day, causing him to swerve dangerously, did remarkably well, and he was nearly always in the van with the two English Triumph riders. Rex Mundy's Singer made fastest time in Class I. at Montanglaust, but this, of course, does not count, as he did not finish the course. H. Lister Cooper (Bradbury) made fastest time in Class IV., Pean (Peugeot) in Class III., and McMinnies (Triumph) in the Amateur Class. The hill-climb took place immediately after lunch—the hill itself can hardly be counted as such in English eyes, as the gradient is only 1 in 9 and the course two kilometres long, one kilometre being on the level.

The trial was well organised and altogether enjoyable, and was a credit to the French Club. The R.A.C. and A.C.U. left no stone unturned to make the journey a comfortable one.

E.M.P.B.

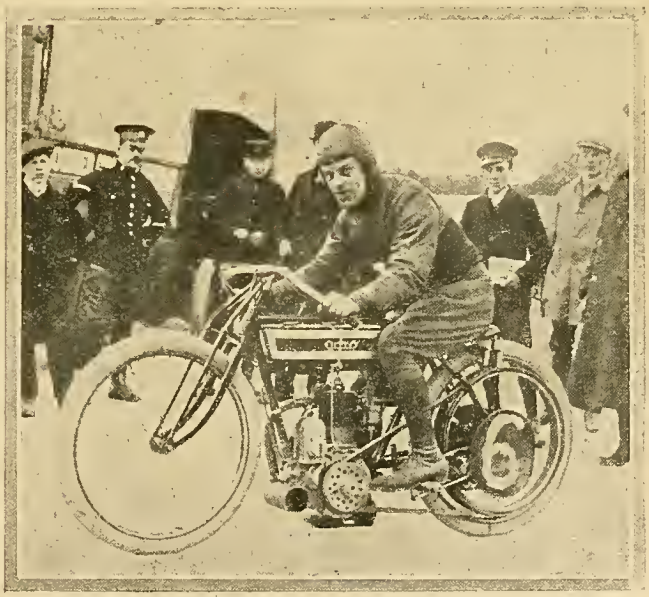
MOTOR CYCLE EVENTS AT BROOKLANDS.

Two motor cycle events were included in the Brooklands Easter meeting, which was run off in a boisterous wind that made riding very tricky. These were the Sixth Short Motor Cycle Handicap and the Fifth Long Motor Cycle Handicap, and they attracted twenty-five and twenty-four entrants respectively, of which twenty and nineteen riders started.

The first race, 5¾ miles, was won by about 200 yards by D. C. Bolton, 56s. start, whose Rudge was the same as was so successful at Oakamoor; G. E. Stanley (Singer), 1m. 22s. start, was second, and M. Campbell (Triumph), 1m. 22s. start, third.

In the second race, 8½ miles, Bolton was penalised 21s., and finished third, the winner being Stanley (Singer), 1m. 3s., who won by the length of the finishing straight from T. A. Manners-Smith (Triumph), 2m. 3s.

The handicapping of the two races appeared to be rather peculiar as, in the first race, Stanley (Singer) received 40 secs. start from Elce (Rudge), and in the second race they both started from the same mark.



G. E. Stanley (3½ h.p. Singer), winner of the Long Motor Cycle Handicap at the Brooklands Easter Monday Meeting.

M.C.C. LONDON-LAND'S END RUN.

FORTY-SIX COMPETITORS COMPLETE THE 550 MILES RUN TO SCHEDULE TIME.



J. R. Haswell (3½ h.p. Triumph and sidecar) at the secret control at Lebcombe Corner, Salisbury Plain.

IT was a dark but mild morning when the first man was punctually started from Staines on the 550 miles journey to the End and back. The competitors were got away punctually, and there appeared to be no hitch in the arrangements. At Basingstoke the dawn broke grey and cloudy, and most of the competitors here extinguished their lamps. Over Salisbury Plain the head wind gave us a foretaste of what was to come, and made the long slopes seem like severe hills. Through Salisbury and on to Shaftesbury; by this time the sun was shining intermittently, and everyone commenced to look happier, but a crop of punctures began to hinder the competitors. Nearly all the trouble we noticed was caused by tyres. Chard and Yarcombe were responsible for very few failures, as the surfaces were in fine condition. From Chard to Exeter the roads were very dusty, and great trouble was caused by the number of sheep and cattle which were being driven along the road.

After the lunch stop at Exeter, brilliant sunshine accompanied us through the beautiful district to Ashburton. We had purposely got ahead of the competitors so that we might see the fun on Holne Chase Corner, and we were in no way disappointed. Nearly all who did not know the corner overshot it and had to try again, and having got up they came down again to watch their friends' attempts. Among those whom we noticed make really good clean ascents at the first attempt were George Brough (6 h.p. Brough), H. R. Slingo (Clyno and sc.), H. Karslake (3½ h.p. Rover), R. C. Davis (Chater-Lea and sc.), W. Cooper (Bradbury), Holroyd (Motosacoche), who pedalled very slightly, G. T. Gray (3½ h.p. Rudge), Frank Smith (Clyno and sc.), F. C. North (Ariel), Alan Hill (Indian and sc.), and Eli Clarke and P. W. Moffat, both on Douglases. We had continued our journey before the last competitors had come up, so the above is not a complete list. Holne Chase was only the beginning of a series of precipitous grades, which were made even worse by half a gale of wind against the competitors. Dartmoor was enveloped in a mist, and this never really left us till St. Austell, where it turned to a sea fog.

An Encounter with a Bull.

The Cornish roads were very wet and heavy rain must have fallen during the day. Close to Truro some consternation and much amusement was caused by a crowd of competitors being held up by a bull. Though several riders were charged, everyone escaped serious damage except Frank Smith, whose sidecar was somewhat badly damaged; he, however, completed the course. George Brough, who had been running well to time, missed his way, and, though he checked in at Penzance, he had missed out the last check before that town.

Gwynne took a toss early in the day restarting after stopping for sheep, but, fortunately, he was not damaged, and completed the course to time. G. E. Purchase (Triumph) and A. C. Robins (3½ h.p. Humber) both retired at Two Bridges with belt rim trouble. F. Begeley (2¾ h.p. Hazelwood) ran into some water between Penzance and Land's End and came in soaked. Fifty-six riders finished the outward journey within schedule time, and started on the return trip on Monday morning. Rain commenced to fall when the first few competitors had started, and the Cornish roads were heavy and treacherous. Hayle, Camborne, and Redruth were all responsible for more or less serious skids, among the unlucky ones being C. Bailey (Rudge) and W. Cooper (Bradbury) who damaged his lamp and fittings. After Exeter practically no rain fell, and the roads again became dusty. It was a great relief to have the wind behind instead of plugging nearly all out against more than half a gale. The easier route, across Dartmoor, *via* Moreton Hampstead, was followed on the return, and, though this road includes some good climbs, very little difficulty was experienced by most competitors. At the lunch stop nearly everyone showed up and got out of Exeter well.



The check at the top of Chard Hill, near Honiton. The riders are H. R. D. Simpson (Ariel), H. C. Mills (Premier), E. B. Ware (Chater-Lea sidecar), and N. O. Soresby (Rudge).



Starting the second half of the ontward journey from Exeter.

up to time. Punctures were again the order of the day, but were not so common as on Saturday. After Basingstoke a lot of motor traffic was encountered and the dnst was bad.

The finish took place just after dark at the eleventh mile-stone from London, on the Honnslow Road, and forty-six competitors came in to time, thus qualifying for gold medals, subject to the times at the checks being correct. The riders finished in the following order:

F. J. Watson (3½ Swift)
E. Gwynne (3½ Triumph)
R. C. Davis (8 Chater Lea sc.)
S. C. Perryman (3½ Ariel)
H. R. Slingo (5-6 Clyno sc.)
E. Pond (Rudge)
H. Karslake (Rover)
H. Greaves (2¾ Enfield)
Eli Clark (2¾ Douglas)
J. S. Holroyd (2½ Moto-sacoche)
F. C. North (3½ Ariel)
B. Alan Hill (7 Indian sc.)
A. J. Sproston (Rudge)
W. Cooper (Bradbury)
W. Pratt (3½ P. and M.)
J. R. Haswell (Triumph sc.)
W. Gibb (2¾ Douglas)
P. H. Bentley (Triumph)
P. Grout (4½ Quadrant)
G. T. Gray (Rudge)
Frank Smith (5 Clyno sc.)
J. Milner (7 Indian)
P. Phillips (2¾ Douglas)
*P. W. Moffat (2¾ Douglas)
H. R. Whitmore (Rudge)
C. W. Meredith (Bradbury)
F. S. Procter (7 Indian sc.)
H. Gibson (3½ Bradbury sc.)
R. Owen-Wells (3½ Bradbury)
W. C. Hemy (Service Precision)
R. Lord (6 Rex Sidette)
N. O. Soresby (Rudge)
E. B. Ware (8 Chater Lea sc.)



A sidecarist making a good ascent of Holne Chase near Ashburton.



An unofficial check near Shaftesbury.

P. W. Tippett (3½ Humber)
A. R. Abbott (3½ Bradbury)
R. Croucher (3½ Kerry-Abingdon)
A. P. Maurice (3½ Premier)
A. J. Stevens (5 A.J.S. sc.)
C. Bailey (Rudge)
†J. Stevens (2½ A.J.S.)
F. W. V. Ehlvers (Triumph)
H. Johnson (Triumph)
S. Savage (Triumph)
S. T. Tessier (8 Bat sc.)
R. Charlesworth (3½ Zenith)
J. Chater Lea (8 Chater Lea sc.)

* Moffat was riding with Phillips, but stopped to help a competitor, so was credited with Phillips's time.

† J. Stevens did not sign on at the finish.

F. S. Procter got mixed up with a cow and a large stone in Devonshire and bent his front forks. A. T. Tamplin (6 Matchless sc.) is reported to have charged a wall on Dartmoor, but without serious damage to himself. R. Lord suffered from a broken sidecar frame, but patched it up and got home to time. Deacock (N.L.G.) also had trouble with his sidecar and did not return. A regrettable accident occurred near the finish, when V. Olsson (6 Trump-Jap) collided with a large car. Willing hands went to his aid, but the doctor pronounced a compound fracture below the knee, and he was wheeled to the hospital in an ambulance.

Our hearty thanks are due to Mr. Bidlake, who gave us a seat in the official six-cylinder Standard for the return journey as, owing to an argument with a dog, our motor cycle was *hors de combat*.

INTER-TEAM RELIABILITY TRIAL.

BARNET TO HARROGATE AND BACK.

THE 400 miles inter-team trial for the Service Cup arranged by the Herts County A.C. did not receive the support it has done on the two previous occasions on which the trial has been held. The start was from Barnet on Good Friday, and the route to Harrogate *via* Hatfield, Biggleswade by Stevenage, Norman Cross, Grantham, Newark, Doncaster, and Wetherby. Three clubs were represented, the Herts County, N.W. London, and North Middlesex. The score or so of competitors who started from Barnet at 7.30 a.m. made good progress. J. W. Thomas, the veteran rider of a Douglas, punctured on his way to the start, but, assisted by a fellow-member, he was able to start to time. A. J. Dreydell (Ivy sidecar) also experienced tyre trouble in a non-stop section, and continued on the rim, which was the commencement of a long list of troubles, which delayed him several hours. C. C. Cooke was caught in a trap at Stilton, two policemen who were in a ditch at the end of the measured distance starting the watch as they saw a motorist pass a spot 180 yards away. (This should be a case for the A.C.U.) Lunch was taken at Grantham and tea at Doncaster. Near the latter town the strong wind increased to the fury of a gale, raising clouds of dust. The following table shows the marks lost on the outward journey:



Miss Lottie Berend (O.K. Precision sidecar) restarting from Doncaster in the inter-team reliability trial to Harrogate.

No.	Name and Machine.	Biggleswade.	Grantham.	Doncaster.	Harrogate.	Total.
15	C. C. Cooke (Triumph)	N.S. 7	1	6	2	16
63	J. W. Thomas (Douglas)	N.S. 1	2	6	1	10
80	Miss Berend (O.K.)	5 marks 1	2	1	19	28
18	A. N. Gutteridge (Rudge) ..	N.S. 1		1	7	9
69	H. J. Pooley (Premier)	N.S. 3		1	1	5
84	D. H. Noble (Rover)	N.S.	1	2	5	8
19	A. J. Dixon (Zenith)	N.S.	3	0	4	7
71	E. D. Rose (Rudge)	N.S. 2		0	7	9
85	T. R. Williams (Triumph) ..	N.S. 3	1	4	10	18
74	C. Rose (P. and M.)	N.S.		0	5	5
87	H. Boocock (Enfield)	N.S. 2	2	1	10	15
29	E. A. Colliver (Zenith)	N.S. 3	1	1	2	7
75	A. J. Dreydell (Ivy-Precision)	No time 46	0		X	46
88	T. A. B. Brown (Tab-Jap) ..	5 marks 7		0	7	14
32	H. H. Huckle Elswick)	N.S. 2	4	0	2	8
76	A. E. Taylor (F.N.)	N.S. 1		X	X	100
35	C. Worssam (Precision)	5 marks 3		X	X	100
78	P. H. Goddard (Douglas) ..	N.S. 3		1	5	9

The following competitors survived the double journey:

C. C. Cooke (Triumph)
F. G. Thomas (Douglas)
Miss Berend (O.K. sc.)
A. H. Gutteridge (Rudge)
H. J. Pooley (Premier)
D. H. Noble (Rover)
A. J. Dixon (Zenith)
E. D. Rose (Rudge)
T. R. Williams (Triumph)
C. Rose (P. and M.)
H. Boocock (Enfield)
A. Dreydell (Ivy-Precision)
T. A. B. Brown (Tab-Jap)
H. H. Huckle (Elswick)
C. Worssam (Precision)

P. H. Goddard's Douglas seized eight miles from the finish, the rider pedalling the machine home.

E. A. Colliver (6 Zenith) retired at Silton with tyre troubles. The return journey proved a very hard ride owing to the high wind.

BIRMINGHAM TO PERTH AND BACK.

THE Birmingham M.C.C. run from Birmingham to Perth and back was started on Saturday morning last from the Parson and Clerk on the Old Chester Road. The morning was very dark, but quite fine, and of the twenty-one entrants nineteen started. G. H. Mansell (Singer and sidecar) was too late to start with the remainder of the competitors, but he followed to Perth.

Just before reaching Whitchurch, Rigby (New Hudson) ran into the hedge at a bad corner and was forced to retire. Passing through Whitchurch most of the competitors were stopped by the police, who examined the number plates. The roads were in fine trim except over Shap, where the surface was greasy.

After leaving Carlisle a terrible head wind sprang up, and over the moors near Abington most of the competitors were driving on low gear with the throttle wide open, and by lying along the top tube they just managed to keep going. The checker at the secret check between Carlisle and Beattock failed to appear. Cox (Forward) retired at Lanark through the magneto shaking loose. The competitors who arrived at Perth one minute either side of schedule time were Taylor (Veloce), Newey (Ariel), Rollason (Rudge), Duke (Zenith), Jones (Zenith), Sangster (Ariel), Seymour Smith (Norton), Steeley (Triumph), Busby (Twin Humber), Peck (Rudge), Ball (Triumph), Brook (water-cooled Precision), Backwell (Zenith), and Pollock (James).

At Perth the competitors stayed at the Royal George Hotel, where excellent accommodation was provided, and all arrangements were carried out by the Perth and District M.C.C., whose officials acted as checkers. The return journey was commenced at 3 a.m. on Monday.

Soon after leaving Perth it commenced to rain, and later on, when getting near Stirling, a gale sprang up and the machines could hardly move. Driving over the moors near Abington the gale caused it to be most dangerous as it tended to blow the machine over sideways.



Checking at the Racecourse Garage, Doncaster in the inter-club reliability trial for the Service Cup.

BRIGSTEER BROW HILL-CLIMB.

A LARGE ENTRY FOR THE WESTMORLAND CLUB'S EASTER MONDAY EVENT.



E. W. Cheshire (3½ Triumph) after successfully rounding the bend on Brigsteer Brow.

WITH a programme containing competitors' numbers up to 179, there was promise that the Westmorland Motor Cycle Club's second open hill-climb on Easter Monday would prove a most important event. It was not surprising, therefore, to find hundreds of spectators at the hill, which is situated four miles west of Kendal. Weighing operations took place at the public scales, Kendal, in the morning. No practising was permitted on the day of the contest, and a start was made with Class I. at noon. A telephone apparatus was installed on the hill, and altogether the arrangements were exceedingly good. Makers had been very liberal in the matter of prizes, which enabled the club to present first, second, and third awards in each class. The weather was rough and the sky overcast when racing commenced. The results are given hereunder:

Results of Nine Classes.

CLASS I.—Single-cylinder lightweights, 360 c.c., on formula.
1. F. W Barnes (2¾ Zenith) | 3. F. C. Jones (2½ Singer)
2. G. Cocker (2½ Singer).

CLASS II.—Single-cylinders, 480 c.c. to 580 c.c., touring machines only, on formula.
1. G. W. Braithwaite (3½ Zenith) | 3. B. Jefferys (3½ Triumph)
2. F. W. Barnes (3½ Zenith) | 4. Miss Ida Pickles (3½ Rudge)

Fastest time, S. Crawley (3½ Triumph).



F. W. Barnes (Zenith) starting in the Variable Gear Class—which he won—followed by C. Murdoch (Singer).

CLASS III.—Single-cylinders, any capacity, on time.
1. P. Weatherilt (3½ Zenith) | 4. W. F. Newsome (3½ Triumph)
2. R. Bowness (3½ Matchless)
3. G. Braithwaite (3½ Zenith)

CLASS IV.—Lightweight twins, 480 c.c., on formula.
1. S. W. Phillpott (2¾ Humber) | 3. H. L. Slingsby (2¾ Douglas)
2. A. H. Alexander (2¾ Douglas).

CLASS V.—Twin-cylinders, any capacity, on formula.
1. F. W. Barnes (6 Zenith) | 3. N. H. Brown (7 Indian)
2. J. R. Alexander (5 Indian)

CLASS VI.—Variably-geared machines, on formula.
1. G. W. Braithwaite (3½ Zenith) | 2. F. W. Barnes (3½ Zenith) | 3. A. J. Moffatt (3½ Zenith)

CLASS VII.—Any power with sidecar, on formula.
1. H. Dixon (3½ N. Hudson) | 3. R. P. Montgomery (3½ Rudge multi)
2. F. W. Barnes (6 Zenith)

CLASS VIII.—Any capacity machine, on time.
1. F. W. Barnes (8 Zenith) | 3. A. J. Moorhouse (7 Indian)
2. A. Alexander (7 Indian)

CLASS IX.—Novice class.
1. G. Steele (7 Indian) | 2. E. F. Baxter (6 Rex)



R. P. Montgomery (3½ Rudge and sidecar) rounding the second bend.

CLUB NEWS.

Motor Cycle Union of Ireland (Ulster Centre).

The opening reliability run of this centre was held on the 6th inst., the course being from Belfast to Londonderry. The event was down for decision on the previous week-end, but was postponed, and the change had a beneficial result on the entry. The roads were in fairly good condition, and the weather exceptionally fine. Four open controls and several secret checks were established *en route*, whilst in addition observers were stationed on one of the hills on the road between Coleraine and Limavady.

The result was as follows: 1, J. Stewart (2¾ h.p. Douglas); 2, J. R. Thompson (3½ h.p. T.T. B.S.A.); 3, J. Lavery (3½ h.p. Ariel); 4, C. R. Martin (3½ h.p. Triumph).

Manchester M.C.

A one-day reliability trial to North Wales was successfully carried through in connection with the annual Easter tour. It took the form of a non-stop run from Manchester to Beddgelert, and the time allowed (including one and a half hours for lunch) was six hours and forty and a half minutes, which made the average speed twenty miles per hour. Competitors were checked outside Beddgelert, the competitor losing the least number of marks and passing the check in the nearest time to the schedule to be the winner. The route lay by the way of Chester, Mold, Ruthin to Cerrig-y-Druidion (lunch), then to Bettws-y-Coed, Capel Curig, Pen-y-gwryd to Beddgelert, 103½ miles. The weather conditions were anything but perfect, a strong gale facing the competitors all the way. W. Heaton (2½ A.J.S.) proved to be the winner, beating J. Tytler by one minute and forty seconds.

Cumberland County M.C.C.

The opening hill-climb took place on the 5th inst. The hill chosen this year was Underwood hill, Watermillock, on a by-road leading from the road along the side of Ullswater Lake from Pooley Bridge to Patterdale and contains three almost right angular corners. Despite the unfavourable conditions, the following riders did well: G. W. Braithwaite (Zenith), R. Bownass (Matchless), W. B. Little (Rudge), L. L. Pierce (Rudge), P. E. Tolfree (Matchless), W. M. Milburn (Triumph), H. B. Harrison (Rudge), E. Jeffrys (Indian), and E. Somervill (Indian).

The results, which were decided on formula, were as follows:

SINGLES (any capacity).

	Rider and machine.	Time.	Fig. of merit.
1.	Geo. W. Braithwaite (3½ Zenith) ...	57s.	74.1
2.	R. Bowness (3½ Matchless) ...	53⅕s.	81.6
3.	W. B. Little (3½ Rudge)	64s.	84.4

TWINS (any capacity).

1.	E. Jefferys (5 Indian)	65⅕s.	106.5
2.	R. Drinkall (2¾ Douglas)	103⅕s.	102.3
3.	A. Somervell (7 Indian)	56s.	139.1

Fastest time: R. Bowness (3½ h.p. Matchless), 53⅕ secs.

Belfast and District M.C.

This club held a most important open hill-climbing competition on Knocksaughey Hill, near Giant's Causeway. The distance of the climb was about 1,550 yards, the gradient averaging 1 in 10. The surface was good, excepting a patch at the final bend. The event was decided to the accompaniment of a furious hurricane, which prevented several from starting. Thirty-four entries were received. The A.C.U. formula was used. Results:

CLASS I.—Not exceeding 500 c.c.

		Fig. of merit.
1.	R. Holloway (3½ Premier)	76.81
2.	James Stewart (2¾ Douglas)	81.9
3.	W. Cameron	83.76

CLASS II.—Unlimited capacity.

		Time.
1.	R. Holloway (3½ Premier)	52⅘s.
2.	J. Thompson (3½ B.S.A.)	53s.
3.	S. Corry (3½ Matchless)	55⅘s.

Holloway's time equals about 61 m.p.h., and is partly accounted for by the favouring gale.

Great interest was taken in the contests by Belfast and Ballymena motorists.

Cork M.C.C.

The open hill-climb took place at Grange Hill Ovens on the 5th inst. Results:

CLASS A.—Under 500 c.c.

		Time.	Fig. of merit.
E.	Harrington (2 h.p. Humber) ...	75s.	... 64
J.	T. O'Callaghan (2 h.p. Humber)...	86s.	... 65
R.	S. Russell (Matchless)	46s.	... 71

CLASS B.—Over 500 c.c.

L.	Dobbin (8 h.p. Matchless) ...	43.6s.	... 106
M.	J. Fitzgerald (6 h.p. Zenith) ...	68.6s.	... 127

Cardiff M.C.

A large number of members met on Good Friday morning at the City Hall (by kind permission of the Lord Mayor) for the opening meet. The weather was, however, dull, and fine rain fell at intervals. A group photograph was taken, after which the members proceeded to Speech House, Forest of Dean, where, after lunch, an impromptu hill-climb was held, with the following results:

CLASS 1.—Motor cycles, any capacity, run on handicap, entrants being paired.

1. A. B. Wade (6 h.p. Zenith).
2. J. C. Moore (3½ h.p. Rudge).

CLASS 2.—Motor cycles, any capacity, with sidecar attachments, run on handicap, entrants being paired.

1. E. Chapman (6 h.p. Zenith).

Torbay and District M.C.C.

The club held a hill-climb near Ashburton on the 5th inst. in splendid weather on a hill two-thirds of a mile long. A strong head wind blowing down the course increased the difficulty of negotiating it, and several machines failed to get up. Hardy's Norton made fastest time in good style, Williamson's Norton of 490 c.c. being only one second slower, and the latter rider being a heavier man makes his run up an excellent one. The climb was run off in three divisions—the first open to all for first on time and formula, the second for those members who had not previously taken prizes, the third lightweights, and an "old crocks" event, which, however, attracted only one entrant—a Quadrant, yclept the "Roebuck"—which got to the top well. Of the lightweights Powell's 2¾ h.p. Enfield was first, making very good time. Results:

	Rider and machine.	Time.
1.	A. C. Hardy (3½ Norton)	57⅖s.
2.	— Williamson (3½ Norton)	58⅖s.
3.	W. Harding (6 Zenith)	1m. 2⅖s.
4.	H. Benny (3½ Rudge)	1m. 7⅖s.
5.	R. Broadbear (3½ Premier)	1m. 8⅖s.
6.	A. Powell (2¾ Enfield)	1m. 16⅖s.



Scene at the start of the Doncaster and District M.C.C. speed judging competition.

Club News.—



H. D. Shaw making his debut on his new 8 h.p. twin Zenith at the Bradford M.C.C. minor hill-climb at Tong. The J.A.P. engine is of the overhead valve type.

Bradford M.C.C.

The club opened its season's programme with a handicap hill-climb at Tong. The surface was treacherous, but some good riding was witnessed. H. D. Shaw (8 Zenith) proved the winner by 0⅘sec. from T. H. Dunston (T.T. Rudge), after a keen struggle. Percy Shaw (T.T. P. and M.) and H. B. Ault (T.T. Triumph) rode well. Result: 1, H. D. Shaw (8 Zenith); 2, T. H. Dunstan (T.T. Rudge); 3, F. Hodgson (Bradbury sc.); 4, H. B. Ault (T.T. Triumph). The annual open hill-climb is fixed for May 18th, and a two days' open reliability trial, Bradford to Edinburgh and back, for Whit Monday and Tuesday.

The Motor Cycling Club.

Copies of the flashlight photograph taken at the opening run dinner at Brighton can be obtained from Mr. B. Mariane, 4, Percy Street, Tottenham Court Road, W., for 2s. each.

Taunton and District M.C.C.

The opening run of this club took place on the 28th ult. to Burnham, when over forty members turned up and a most enjoyable afternoon was spent. The club now numbers just over sixty, and it is hoped this number will be increased to a hundred before the end of the season. Great local interest is being taken in the open hill-climb to be held on Cothelstone Hill on Thursday, May 16th, full particulars of which can be obtained from the hon. secretary, Mr. W. G. Potter, 41, Belvedere Road, Taunton.

Dublin and District M.C.C.

There will be race meetings at Portmarnock on the 13th and 27th inst.; on each day there will be three events.

Flying half-mile competitions will take place on the 25th inst. and the 22nd prox., early in the morning, on a level road.

An open reliability trial will be held on May 4th. Starting from Donnybrook at 2.30 p.m., the route will be *via* Ashford, Laragh, Drumgoff, Aughrim, Ovoca, and Rathdrum. Observers will be stationed on Ballymacroe Hill.

Bristol M.C.C.

A very interesting and instructive lecture was given by Professor W. Morgan, of the Bristol University, before the members of the Bristol Motor Cycle Club on Thursday evening, the 28th ult., at the club's headquarters, relative to valve setting.

The club held its spring competition on the 30th ult., starting at Keynsham and covering a circular course twice. The run was a non-stop, and the result was. 1, F. Davis (3½ Rudge); 2, W. T. Symes (2¾ Douglas); 3, E. Kickham (2¾ Douglas).

Entries for the open hill-climb close on Monday next, the 15th inst., to Mr P. Grout, Warmley, Bristol. There are ten classes

Sheffield and Hallamshire M.C.C.

The opening run took place on the 30th ult., on a circular course in Derbyshire. The attendance was good.

Coventry and Warwickshire M.C.

Entries for the members' sidecar trial to be held on Saturday next, the 13th inst., close first post to-day to the hon. sec., Mr. G. Smith, 19, Hertford Street, Coventry. The course must be covered without a stop and includes six ascents of Edge Hill, which will ensure a sporting contest.

Wolverhampton M.C.C.

On the 27th and 28th inst., a two-day reliability trial for the Stevens Cup and medals will be held. This will be over a secret course, which will be made known at headquarters on Friday evening, the 26th inst.

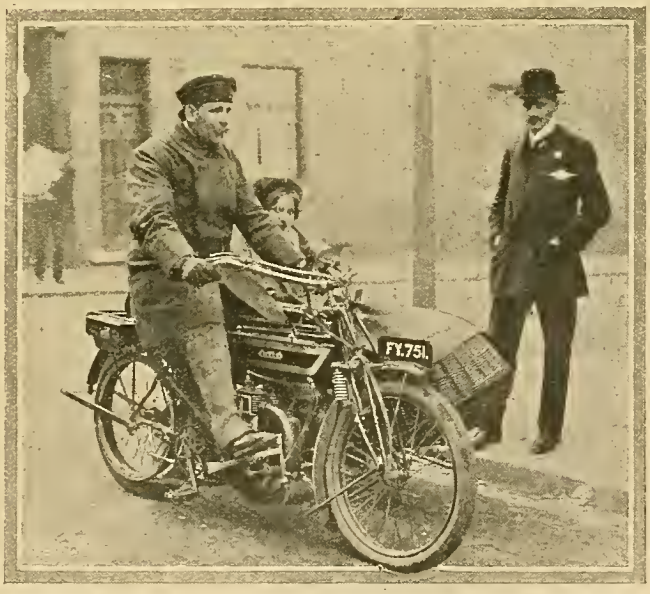
The committee have also arranged for a lecture on "Magnetos," by Mr. Bennett, of the Bosch Magneto Co., Ltd., in the Lecture Hall, Garrick Street, Wolverhampton, on Monday, the 22nd inst. All motorists in Wolverhampton and district will be most welcome. Admission free by ticket, to be obtained of the hon. secretary, George Hill, Temple Road, Willenhall.

The following runs have been fixed for April: 13th, Buxton; 20th, Hereford; 27th and 28th, Stevens Cup reliability trial (secret course).

Will the present hon. secretaries of the following clubs send their names and addresses to the Editor: Amman Valley and District M.C., Halifax and District M.C.C., Hull (Kingston) M.C., Irish Motor Cycle Union (Ulster Centre), Oxfordshire A.C., and Pontefract M.C.

100 Miles per Day on a Sidecar.

Last week we had the pleasure of meeting Harry Long and Miss Long, who have just started on another long-distance record-breaking ride. This time, Mr. Long is riding a 4 h.p. Singer, with Singer two-speed gear and Millford sidecar. His intention was to spend Easter in Wales, and then journey from Land's End to John-o'-Groat's (possibly more than once), touching on the way



Harry Long, who has commenced an attempt to cover 100 miles per day by sidecar.

most important Midland towns, after which he will repeat last year's coast route trip. All the while his object is to cover one hundred miles per day.

Mr. Long is very hopeful, and confident of success. He told us the old tale of doubting Thomases, who describe the coast trip with a sidecar as impossible. We left him going out to finish his daily hundred miles in a very cheerful frame of mind. We wish him all good luck and a successful accomplishment of his plucky venture.

Questions & Replies



A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Ignition Control.

I have a 2 h.p. Humber motor cycle with fixed point magneto ignition. (1.) Should I gain any material advantage by fitting a spark control? (2.) What alterations to magneto would be necessary in fitting control?—M.R.E.

(1.) Yes, you would find considerable advantage by fitting a spark control. This would give the engine greater flexibility and prevent knocking if it be used intelligently. (2.) All that would be needed, probably, is a new contact breaker cover.

Baldock (Herts) to Llandudno and Back.

Please give me the best route from Baldock, Herts, to Llandudno, avoiding hills as much as possible and also traffic in towns, with an alternative route home —B.F.

Your best route would be as follows: Baldock, Shefford, Bedford, Northampton, West Haddon, Crick, then straight up Watling Street, following the signposts of the R.A.C. to Wellington; go through Wellington, Shrewsbury, and follow the Holyhead Road through Llangollen to Bettws-y-Coed; here turn right, and go through Llanrwst to Llandudno. You might return *viâ* the coast road through Abergele, Rhyl, Flint, Chester, Tarporley, Nantwich, Stone, Rugeley, Lichfield, and join Watling Street near Weeford a few miles further on.

Long Distances on a Lightweight.

(1.) I purpose riding my 2¾ h.p. twin Enfield from Ashby-de-la-Zouch to Cromer. Please tell me the most direct route (avoiding, if possible, the biggest hills) and distance. (2.) Do you consider I should get so far on such a small machine? (3.) Would it be wise to average twenty-five miles per hour, I mean on account of the low power of the machine?—T.L.D.

(1.) Your best route would be as follows: Ashby, Loughborough, Melton Mowbray, Oakham, Stamford, Peterborough, Wisbech, King's Lynn, Fakenham, Holt, to Cromer. The distance is approximately 144 miles. (2.) There will be no difficulty in travelling this distance in a day. We have ridden from near Gloucester to Newquay (Cornwall) on a similar machine, and the Devonshire hills are far more severe than any you will meet. (3.) The machine is easily capable of averaging 25 m.p.h or more, but we recommend you to average 20 m.p.h.

Exeter to Walthamstow.

Please tell me the best route to London, avoiding the larger towns if possible: also how to get through London to Hoe Street, Walthamstow? I think I had better time myself to reach the outskirts of London early in the evening, and then wait until about 1 a.m., and slip through the City when the streets are clear? Do you think this a good plan? I live eight miles below Exeter, and, supposing I left here at 7 a.m., could I, with good going and ordinary luck (averaging 15 to 20 m.p.h.), get to the outskirts of London the same day? I want to go up to London in a month's time, and if you can advise me on the above points I shall be very grateful. I am only a motorist of a few years' standing, and so do not know much of the roads outside Devon. My machine is a 1911 two-speed Humber.—C.W.M.

Your best route would be as follows: Exeter, Honiton, Chard, Crewkerne, Yeovil, Shaftesbury, Wilton, Salisbury, Andover, Whitchurch, Basingstoke, Hook, Hartley Row, Bagshot, Staines, and Hounslow. The best way to proceed would then be: At the entrance of Hounslow turn left just where the Bath Road joins the Exeter Road, and go through Heston Hounslow, Heston St. Leonards, skirt Osterley Park, cross the main Oxford Road under the railway bridge (dangerous crossing), turn first left and then right at Greenford, and go straight on to Harrow-on-the-Hill. Here turn right, and go straight on until you reach Edgware Road, cross straight over this, and go through Hendon St. Mary to Finchley Station. Here ask your way to Muswell Hill, where, close by Muswell Hill Station, you will find a road which will take you direct through Tottenham High Cross to Walthamstow. At Blackwash Road Station anyone will tell you the way to Hoe Street. The route we have given you avoids as much of the traffic as possible, but it takes you right round London. This route is best seen on Bacon's Map of Twenty Miles Round London (which can be obtained from these offices post free, 1s. 2d.). If you leave Exeter at 7 a.m. you should be able to reach London the same evening. It would be worth your while getting the map we mention and studying the route round; you might find this more convenient than waiting till 1 a.m. From Starcross to the outskirts of London is approximately 175 miles.



RACING IN PAIRS AT OAKAMOOR.

W. E. Cook, on an A.S.L., appears to be taking matters very easily. He was eventually put out by a mysterious stoppage, his engine restarting immediately.

Oil-tight Joints.

What is the best stuff to use for making oil-tight joints in a base chamber on a motor cycle when any sort of paper is too thick? Also, what is the best stuff to use to make oil joint between cylinder and cylinder head and between cylinder and crank case (old M.M.C. engine)?—R.W.

Oil-tight joints in both the places mentioned may be well made by means of Coverol, made by Conrad Schmidt and Co., and sold by the Service Co., Ltd.

Removing Contact Breaker.

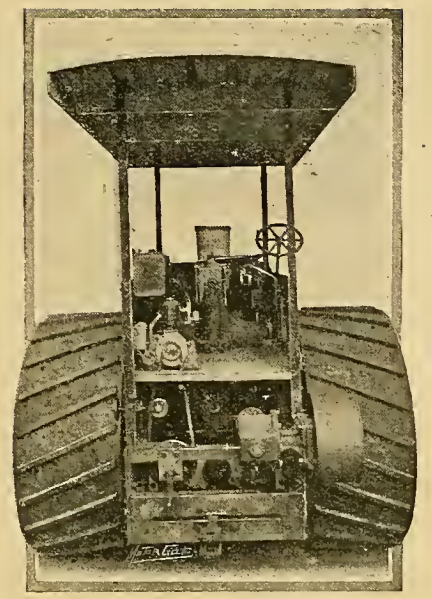
I was just going to write to you on the subject of "A.J.W.'s" question, which you answer in *The Motor Cycle* of February 15th. My rocking arm also has stuck owing to the damp. As I am nervous about tampering with my magneto, will you kindly supplement your reply to "A.J.W." by answering these questions: (1.) Cannot the rocking arm be removed without removing the whole contact breaker and nut in the centre? (2.) Does the contact breaker include the rocking arm, and will that be removed with the contact breaker? (3.) Is there any difficulty in replacing the contact breaker in the right position? (4.) Does the rocking arm turn on a fibre pin? If so, is there any danger of breaking it? (5.) My rocking arm appears to be kept in place merely by a spring. Is this so? The magneto is a Bosch.—A.C.R.

(1.) Yes. The rocking arm can be removed without removing the whole contact breaker by simply pushing the spring to one side and unscrewing the spring which controls it. (2.) It does. To take off the whole contact breaker, remove the centre nut, then taking two screwdrivers and placing them behind the contact breaker plate at opposite sides, gently lever this out. It will come away without difficulty. (3.) There is a small projection on the contact breaker plate extension which ensures the latter always going back in the right position, so that it cannot possibly be put back wrongly. (4.) There is no danger of breaking the pin on which the rocking arm moves if care be used, as it is steel not fibre; the latter material is used for the bush. (5.) Yes.

Sparking at Contact Breaker.

(1.) I have a 1909 Triumph, and, on removing the cap of the magneto, I found that it sparks at the points of the contact breaker. Is this serious, and does it in any way affect the running of the machine? If so, how can it be remedied? (2.) I also find that oil leaks between the cylinder and the crank case, so that the latter gets covered with this black, gritty slime, making it very difficult to clean. What is the best method of cleaning the crank case, valves, etc., when in this condition?. (3.) What is the most suitable washer to have between the cylinder and crank case? (4.) What is the best route from Andover to Leeds for above machine?—W.R.V.W.

(1.) When you remove the contact breaker cap from this particular type of magneto, you interrupt the condenser connections, consequently you see a fairly violent spark at the contact breaker. It does not affect the running of the machine, except that it burns up the platinum points. (2.) Wash the crank case down with a stiff brush soaked in petrol. (3.) Brown paper soaked in boiled linseed oil is the best washer. (4.) Your best route would be as follows: Andover, Newbury, Abingdon, Oxford, Bicester, Buckingham, Towcester, Northampton, Kettering, Oakham, then on to the Great North Road, and through Colsterworth, Grantham, Newark, Tuxford, Retford, Doncaster to Leeds.



3½ H.P. TO START 120 H.P.

The Daimler Agricultural Tractor, designed for drawing a 25 disc plough for Canada, is fitted with a six-cylinder engine of 150 mm. bore and equal stroke. To start this 120 h.p. engine, use has been made of a separate 3½ h.p. B.S.A. motor cycle engine. The engine is started in the usual way, and by means of a clutch the power is utilised to drive a shaft, which in turn starts the big engine by means of a friction wheel on the end of the small shaft pressing against the big flywheel.

Leeds to Folkestone.

Please inform me which is the best and most direct route from Leeds to Folkestone *via* Shepherd's Bush, London, giving principal towns, also mileage. —H.R.M.

Your best route would be as follows: Leeds, Doncaster, straight down the Great North Road through Retford, Newark, Grantham, Stamford, Stilton, Eaton Socon, Biggleswade, Baldock, Stevenage, Regent's Park, down Lancaster Gate to Shepherd's Bush. From here cross over Wandsworth Bridge, and when over the river turn right, and then immediately after the railway bridge, ascending a steep hill, go straight on and bear to your left till you see Wandsworth Common. Turn to your right and follow the Trinity Road right to Tooting; here ask your way to Mitcham, and follow the road through Mitcham, Croydon, West Wickham, Farnborough, Riverhead (left), Wrotham, Maidstone, Ashford, Hythe, Folkestone. The distance is approximately 270 miles. We should not advise you to go by Shepherd's Bush if you can help it. It would be better to avoid London, and go through Stevenage, Hertford, Ware, Harlow, Ongar, Brentwood, Tilbury, Gravesend, to Wrotham.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

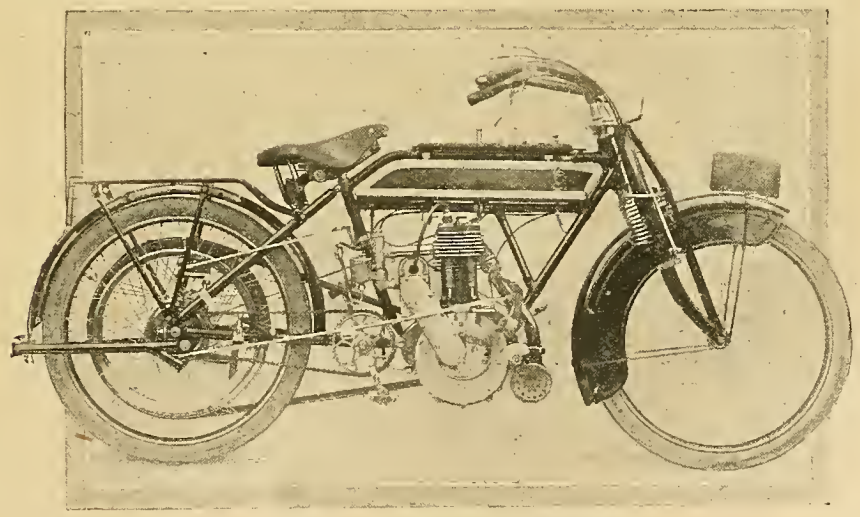
"P.A.L." (Chatham).—Mabon variable gear.

"G.S.W." (Battersea Park).—Bedelia cyclecar.

"W.A.E." (Weston-super-Mare).—Mabon, Zenith-Gradua, and N.S.U. gears, all with 1911 free engine Triumph, with and without sidecar.

"T.B." (Durham).—B. and B., Lukin, and Binks carburetters; also Bowden counter-shaft gear for 3½ h.p. machine.

"Y 899" (Sandford).—A.C. sociable.

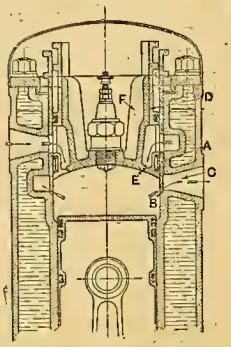


NEW MODEL WULFRUNA MOTOR CYCLE.

This machine is fitted with an Arno engine and Thoroton two-speed gear. Other fittings used include Druid forks, Lycett saddle, Hutchinson tyres, and Bosch magneto carried at rear of engine.

A Highly Efficient Valve System.

One of the chief objections to using mushroom valves of large diameter is due to the big resistance offered to the exhaust valve when opening, as it lifts against the pressure existing in the cylinder which may be 50 lbs. or more per square inch. In this construction the valves are of considerable port opening. The exhaust valve takes the form of a sleeve A which seats at B, and when raised allows the gas to pass through the outlet C. It will be seen that the exhaust valve is not held on its seat by the pressure in the cylinder, so requires practically no effort to raise it. The inlet valve takes the form of a sleeve D with packing rings interposed between it and the exhaust valve sleeve A. The inlet valve sleeve has a conical seating at E on the cylinder head F. The whole of the combustion chamber is machined.—A. W. Reeves, No. 41, 1912.



Sturmey-Archer Three-speed Hub.

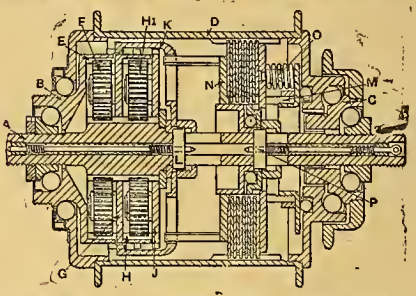
This is a construction of three-speed hub gear having a direct drive on top speed, and incorporating a plate clutch.

PATENTS

BY

ERIC W WALFORD. F.C.I.P.A.

Upon the usual fixed spindle A are mounted driving members B C, the former receiving motion from the engine, and the latter having a free wheel connection with the hub shell D, which is mounted upon ball bearings on the members B C. The driving member B is flanged over to form an internally toothed ring E, engaging planet pinions F, which revolve on studs on a carrier G. This carrier G, like the member B, is also flanged to form an internally toothed ring H, which engages planet pinions H^1 on a second carrier J. Both trains of planet pinions engage a sun pinion fixed on the spindle A. The outer peripheries of the driving member B and planet pinion carriers H and J are formed with clutch teeth engaging corresponding teeth on a clutch ring K free to slide on the spindle A, and engaged at its boss by an operating key and rod L. At the other end of the hub is arranged a plate clutch comprising a sleeve M and a disc N, the latter having a sliding connection with the clutch ring K, which provides a positive drive, but allows of the necessary movement of the clutch ring K for operation of the gears. With the sleeve M and disc N co-operate friction plates, alternately engaging the sleeve M and the hub shell, the plates being normally pressed into engagement by springs O, but being capable of disengagement by the operation of a draw-rod and key device P. In operation, assuming the plate clutch to be in engagement, when the clutch teeth on the driving member E are in engagement with the clutch ring K the drive is "direct" to the hub shell *via* the plate clutch. If now the clutch ring be moved to release the member A and engage the planet pinion carrier G, the drive is from



the member A through the planet pinions F to the carrier G, and so to the hub shell. When the clutch ring engages the carrier J, both sets of planet pinions F are in operation and a doubly reduced speed is transmitted. The provision of the pedalling sprocket C enables the hub to be rotated to start the engine.—Sturmey-Archer Gears, Ltd., and J. Cohen, No. 2,013, 1911.

Motor Cycle Thefts.

Owing to the number of thefts of motor cycles from various London depots, Messrs. R. G. Nye and Co., Hampstead Road, Tottenham Court Road, have been enterprising enough to insure clients' machines entrusted to their care against both fire and burglary.

Insurance.

Under the new A.C.U. insurance scheme full particulars of which can be obtained from the A.C.U. Insurance Department, 199, Piccadilly, W., damage to lamps is included without extra charge in the motor bicycle premium, and also sidecars without extra charge, provided the full value of the combination be insured.

Preventing Rust.

The Bancroftian Co., Bishopsgate Street, E.C., have introduced a new lacquer for preserving plated and other bright parts from rust. To apply it the part is first polished, then rubbed over with cotton wool soaked in methylated spirit, and afterwards the lacquer is applied with the same piece of wool. From samples we have seen, the preparation appears to be quite successful.

"The Autocars of 1912."

The above title is that of a new book which has just been published by Iliffe and Sons, Ltd., 20, Tudor Street, E.C., price 1s. 6d. net, or 1s. 9d. post free. In it is an alphabetically arranged table of cars on the British market; also drawings of their bonnets and radiators. Motor cyclists who are keen on picking out and recognising the various makes of cars they meet on the road will be interested to examine these drawings of distinctive bonnets and radiators with which the book is illustrated

SPARKLETS



Upkeep and Management.

Quite a good little booklet on the management of the Rover motor bicycle is that entitled "Instructions for the Upkeep and Management." It is full of lucid illustrations and well-written reading matter, and is quite one of the best books of the kind we have seen.

For the Good of the Cause.

The Hendee Manufacturing Co., 178, Great Portland Street, W., have had some special notices printed on cards which will be sent to any *bonâ fide* motor cycle agent on receipt of 3d. to cover the cost of production and postage. The notice reads.

"Do not run your machine on the stand longer than 30 secs. at one time.

Never run it at full speed on the stand at any time.

No air-cooled motor ever built will stand such treatment. It burns out rings and injures bearings.

More motors have been ruined on the stand than on the road."

The advice is excellent, and one of the cards should be prominently placed in every garage. The card bears no name or advertising matter in connection with the Hendee Co or the Indian machines, so that the distribution of the cards can be said to be a disinterested action

Folding Clothes Brush.

The sale of the neat and handy folding clothes brush which we illustrated in the issue of January 4th, page 20, has been taken up by Brown Bros., Ltd., Newman Street, Oxford Street, W., who are retailing it at a very moderate figure.

A New Tyre.

The Liga Rubber Works, Frankfurt a/M., whose London business is controlled by Mr. Clifford Wilson, have just introduced a new tyre, to be known as the "Ligatire." The tyre cover is black in colour and built up on Tripolitan fabric, woven in such a manner that even when the tyre is board hard its resiliency is said to be unimpaired.

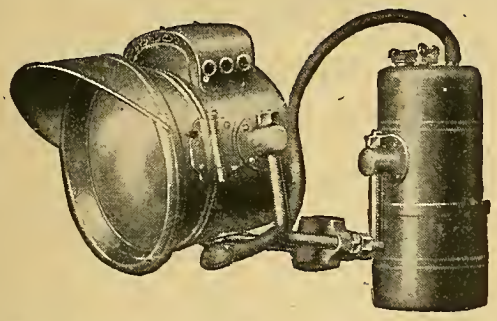
Tyre Sizes.

J. Pedley and Son, Ltd., Oxford Works, Great Charles Street, Birmingham, inform us that they are now able to supply a 26in. × 2½in. cover which will fit a 2¼in. rim; also a 26in. × 2¼in. cover to fit 2¼in. rims. Readers who are interested can obtain sections of the tyre covers mentioned from the above address.

Catalogues Received.

The Corah models for 1912 are the touring model 3½ or 4½ h.p. and the T.T. model with overhead valve engine; the last-named is also made with a side-valve engine if desired. Catalogues of these machines can be obtained from the Corah Motor Manufacturing Co., King's Norton, Birmingham.

We are in receipt of a leaflet from Messrs. Edmund Wadden and Co., The Quadrant, Weybridge, Surrey, descriptive of the Autotrix cyclecar, a racy looking little vehicle with low-built seats, sloping bonnet, and wheel steering.



Buy this Lamp —in preference.

BECAUSE IT IS THE WELL-KNOWN

Powell & Hanmer Motor Cycle Lamp

—the make with the biggest "QUALITY" reputation—the biggest sale—and the biggest benefits for users.

There's over a thirty years' experience behind the "P. & H." production—and that means perfect service with its consequent perfect safety awheel.

Note the marked value—then buy—

SPECIFICATION.

MODEL 125. The "P. & H." Powerful Projector Lamp fitted with a "Roni" Non-carbonising burner, 4½in. specially silvered Mangin Mirror, and best plate-glass bevelled Convex Lens. Special Adjustable Bracket, upon which the Lamp can be reversed if required. Special Generator, of highest quality and efficiency, complete with best grey rubber Tubing connection.

Height.	Weight.	Front.	Lens.	Best Finish
7in.	2¾ lbs.	5½in.	4½in.	Plated on Brass.

Price 27/= Complete

ready for attaching to Cycle in either position—on Handle-bar, Stem, or usual Lamp Bracket.

Obtainable of all Motor Agents, or direct

Powell & Hanmer, Limited, Chester Street, Birmingham.

"P&H" HIGHEST GRADE

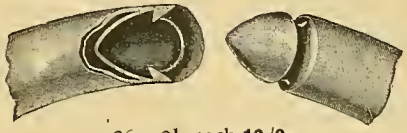
R.H.S.





26 x 2¼ in., per cover, **27/-**. 26 x 2¼ in., per cover, **37/6.**

S. E. TYRES are best and last longest.

Butt-end  Inner Tubes

26 x 2¼, each **12/6.**

SAFE FIT. EASIEST TO HANDLE.

SHAMROCK

GLORIA

5/8" 1/5	RUBBER BELTS hold World's Record speed of 91·37 miles per hour (C. R. Collier). French International Hill Climb—Mr. H. Bashall makes fastest time of the day using S.G. Belt. Avoid Substitutes.	1" 2/3
¾" 1/9		1⅛" 2/8 per foot.
⅞" 2/1		

HARDY'S

All Goods supplied from Stock.





26 x 2¼, per cover, **52/6.** 26 x 2½, per cover, **70/-.**

Write for complete catalogue.

THE HANOVER RUBBER CO.,

17, Goswell Rd., Aldersgate, London, E.C.





12/6 & 18/6.

NO MORE GOOD TYRES ON THE SCRAP HEAP.

Send your old tyres to us. Bursts and broken beads repaired by our Patent Process cannot fail.

Agents for
LEVIS, 2-stroke.
RUDGE-WHITWORTH.
TRUMP-J.A.P.
MOTOSACOCHE.
CASH OR CREDIT.
DELIVERY TO-DAY.

Write for Particulars.

TOM CANN, Ltd., LEICESTER.

Do you want your machine to run smoothly and with increased power?

THE

'U.H'

MAGNETO

will make your mount simply fly up hills, and will give you absolute immunity from ignition trouble.

Particulars post free on request.

S. WOLF & CO.,
115, Southwark Street, London, S.E.
Telegrams: "Widerstand, London."
'Phone: 5172 Central.

STERNOL

THE KING OF MOTOR OILS.

The exclusive use of "Sternol" ensures sweeter running, reduces your repair bills to the minimum, and enables your engine to develop greater power on hills.

The leading agents throughout the country recognise the superiority of "Sternol," and always stock it.

Why not give it a trial?—you will then have an opportunity of testing its manifold merits for yourself.

Full particulars post free on request.

STERNOL,
56, Royal London House, Finsbury Square, London, E.C.

MOSELEY

GROOVED



Extra strong beads, 3-ply heavy canvas

36/- per cover, 26 × 2¼ beaded.

FROM ALL AGENTS.

Catalogue free from the makers—

DAVID MOSELEY & SONS, LTD.,
Ardwick, MANCHESTER.



THREE RIBBED. STEEL STUDDED.

SPENCER MOULTON

MOTOR CYCLE TYRES

Made in three kinds—three-ribbed, steel studded, and standard heavy. The same excellence of quality obtains in these covers as in our well-known motor tyres.

Full particulars and prices on application to—

GEORGE SPENCER MOULTON & Co., Ltd.,

London: 77 & 79, Cannon St., E.C.
Glosgow: 65 & 67, Bothwell St
Leeds: 68, Albion Street.

KINGSTON MILLS, BRADFORD-ON-AVON, WILTS.

"MARTIN-JAP" MOTOR CYCLES

for SPEED and RELIABILITY.

Arrangements have now been completed whereby prompt delivery of these world-famous machines can be given. There is not sufficient space in this advertisement to detail the various records, etc., standing to the credit of these motor cycles—indeed, it is scarcely necessary, as the name of Harry Martin is world-famous. Enough if we state that over **250 Firsts** and over **200 World's Records** have been secured by the Martin-Jap.

AN IMPORTANT POINT.

Every machine is tested and personally supervised during construction by Mr. Harry Martin, **and no machine will leave the works until it has perfectly fulfilled the stringent test to which it will be subjected.** That the Martin-Jap is the most efficient machine made is no idle boast. This is proved by the consistent Record of Successes in all Open Competitions. In 1911 the Martin-Jap competed in **20 Races,** winning **17 Firsts, 2 Seconds.** Also **10 World's Records** were made, and are still standing, no other machine in the world being able to beat them despite repeated efforts.

PRICES from 38 GUINEAS,

H. MARTIN & CO. Works: **Leslie Grove, East Croydon, Surrey.**

SIDECAR MODELS.

Can give prompt deliveries of

"CLYNO." "BAT." "ENFIELD." "INDIAN."

Upwards of 100 second-hand Bargains.

Note the following and write for complete list.

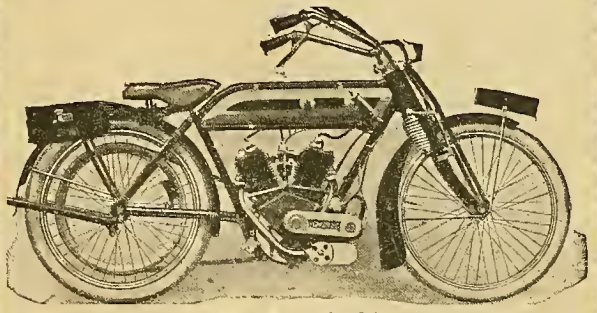
1911 3½ h.p. F.E. **TRIUMPH**	£43	0	0
1911 3½ h.p. T.T. **TRIUMPH**	£42	0	0
1909 3½ h.p. F.E. **TRIUMPH**	£35	0	0
1909 3½ h.p. **TRIUMPH**	£31	0	0
1911 3½ h.p. **PREMIER**	£36	0	0
1911 3½ h.p. Two-Speed **HUMBER**	£40	0	0
1910 3½ h.p. Two-Speed **HUMBER**	£35	0	0
1911 3½ h.p. **KERRY**	£35	0	0
1910 2¾ h.p. Twin **ENFIELD**	£22	10	0
1910 2¾ h.p. Twin **MOTO-REVE**	£22	10	0

All machines guaranteed.

ROBERT BEVAN, Castle Street, CARDIFF.

DEVOID OF TROUBLE

— MOTORS. —



6 and 8 h.p. Models.

The finest machine in the World for

Design, Workmanship, & Finish

NOW IS THE TIME TO BOOK YOUR ORDER FOR ONE OF THESE EXCELLENT MACHINES.

Write, 'Phone (2125 Central), or call—

H. Reed & Co., 306, Deansgate, Manchester.

Sole Agents for Manchester & District for the Canoelet Sidecars.

Applications for Agencies invited.

London Agents—The Service Co., Ltd., 292, High Holborn, London, W.C.
Liverpool Agents—Messrs. Henry Whitlock & Co., 40, Hope St., Liverpool.

"Compression spells Power."

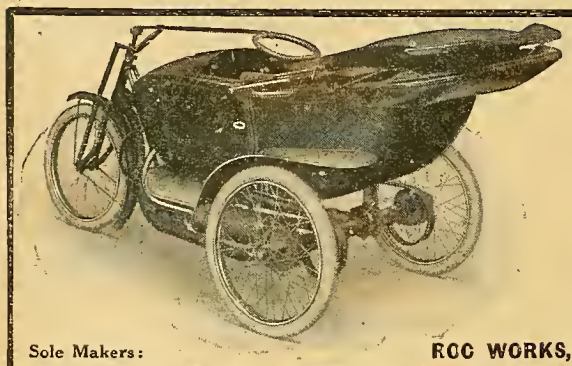
AIR COOLED "Filtrate"

REGISTERED

FOR MOTOR CYCLES

Sole Makers:

FILTRATE WORKS, LEEDS.



THE WALL TRI-CARRIAGE.

A sound, practical, and scientifically designed three-wheel Runabout.

Price with Two-seater Body:

100 Guineas.

The luxury of a car with motor cycling economy.

Differential Axle.
Shaft Transmission.
Roc change speed gear.
Easy geared-up hand starting.
Easy Steering.
Does not skid.
Turns in own space.
Safe, Speedy, Reliable.

Early Deliveries.

Sole Makers: ROC WORKS,

A. W. WALL, LTD., Hay Mills, BIRMINGHAM.

Write for catalogue.

New Edition Now Ready.

The FIRST and BEST book on the motor cycle.

MOTOR CYCLES & how to manage them.

Fifteenth Edition. *Entirely Revised by the Staff of "The Motor Cycle."*

PRICE **1/-** Net.

Commencing with advice on the choice and purchase of a machine, this book tells how the motor works, and how its mechanism may be understood and mastered. It also deals with every conceivable point in the care, management, and running of machines of all types. The New Edition gives details of all principal improvements in 1912 models.

By Post **1/3**

Obtainable of ILIFFE & SONS Ltd., 20, Tudor St., London, E.C., and all booksellers

---

HUILES DE LUXE

Summer and Winter are prepared from the finest materials that it is possible to obtain and they are the most efficient lubricants.

Summer Huile de Luxe was used by Frank Smith on his 5-6 h.p. CLYNO when he climbed Honister and other hills in the Lake District.

Winter Huile de Luxe was used by R. A. Bishop on his 6 h.p. ENFIELD and sidecar, the first to ascend Arms Hill, nr. Henley

B.M.C.R.C. MEETING

on the 27th March, 1912,

100 mls. all-comers' race.

Winter Huile de Luxe was used by Sam Wright on his 2¾ h.p. twin HUMBER, the winner of Class B.

Winter Huile de Luxe was used by E. B. Ware on his 3½ h.p. RUDGE, the winner of Class C.

Full particulars in 1912 Booklets.

PRICE'S PATENT CANDLE CO. Ltd., Battersea, LONDON, S.W.

NON-SKID.



THE

"BURNETT"

PATENT SUCTION-CUP

TYRE.

TESTIMONIAL.

Colliery Inn, Brandon Colliery, Co. Durham,
March 6th, 1912.

Dear Sirs,

I have great pleasure in saying that the BURNETT Suction Motor Cycle Tyres have turned out most satisfactory in use.

I am particularly pleased with their excellent wearing qualities, and further, I find them to be good Non-Skids.

I travelled for my holidays with Pillion passenger, and luggage making a total weight of 30 stones on back cover, without machine, doing 550 miles in four days, over some of the roughest road in Scotland, without the slightest trouble.

I am a satisfied user of Burnett Covers, and intend using no other.

Believe me to be, yours truly,
(Signed), CHAS. F. CHRISTON.

The Burnett Motor Tyre Co., Melksham, Wilts.

	Extra Heavy.	Tubes.
26 × 2	33/- ..	8/6
26 × 2¼	34/6 ..	9/6
26 × 2½	36/- ..	10/6

Carriage Paid. Less 10% Cash with Order.

THE BURNETT MOTOR TYRE CO., MELKSHAM, WILTS.

Tel.: 33, Melksham. Tel. Address: "VACUUM, MELKSHAM."

Be Independent

of collier strikes, railway strikes, and industrial upheavals generally. You can do this if you BUY A MOTOR CYCLE. We are wanting to sell some. Please note.

Whether you are a man with little money or much money we can still find you a machine. If you have PLENTY OF MONEY, we shall be pleased to have your order for any of the high-class machines on the market. We are agents for them all. If you are a man with a settled income, and do not feel interested in paying the whole amount down, you will find us prepared to accommodate you on the deferred payment system. If you are a Sunny Jim with a wage, and can pay from £3 down and from 5/- per week, you can have a motor cycle. We can do everything for everybody, excepting those interesting innocents who write to ask if they can have a motor cycle for 5/- down. We would draw their attention to the fact that we are not selling gramaphones, push cycles, or watches; 5/- down is no use to us. We must have at least £3 down and the remainder as we might arrange.

You will find us always perfectly straightforward. We do not tell you one "fairy tale" and mean another. Probably we lose a lot of business through our straightforward, blunt way of dealing. However, we cannot help that, knowing that we gain a lot we should not otherwise get, and the man who wants all is likely to get little. WE are out to get as much as we can, and believe in the principle of giving and taking.

Probably some of you will think our advertising is rot. Neither do we worry about that, so long as you read it, and we feel quite sure that everybody who buys "The Motor Cycle" does read it, even if it is only to see what that silly kid Hitchen has to say this week. The trade all read it to see what ideas they can pick up. We do not mind this in the least, and would take this opportunity of saying that we shall be pleased to have the traders' orders for any machines they want to buy. We are the largest contractors in the world, and are not troubled with trade jealousy, but respectfully solicit their orders for any motor cycles they are wanting. Being, as we are, large buyers, we can treat them well, and better than other people, and, what is more to the point, we can give prompt delivery of the machines, where, of course, our contracts do not probibit.

We are out on the jump, and have been "on" for some time. The fact that we are able to purchase from the makers £50,000 worth of motor cycles should prove conclusively that Hitchen's have confidence in themselves, and that they have created such a trade that they feel quite sure they will dispose of these machines, and, long before the season is over, be live Oliver Twist, "asking for more."

At the present moment we are buying from traders what we want, and with the same willingness we sell to them. If you are in the trade, and have Scotts, P. and M., Triumph, Matchless (No. 7 model), Jap-Bat (chain drive model), Douglas (any model), Clyno, or Morgan Runabouts, we shall be pleased to purchase from you. Cash down. No waiting. Money always ready. You need not pay any carriage. We will take them from the works. When you write us, state what you want net cash, and we will wire at once, accepting or declining.

By the by, it is almost time you wanted something in the way of tyres, belts, and accessories If so, you cannot do better than get on the jump with us. We are clearing out of the accessory trade, and are wanting your assistance in this direction. We can supply anything you may want AT A RIGHT PRICE; and if you have not had a list, it is time you had one; a halfpenny stamp will do the trick, and you will have one through by return post. Let us have your enquiries without delay. We are wanting to shift an enormous amount of stuff, so that we shall be in a position to deal with the heavy consignments of new machines which will be coming in each week. As the season advances our commitments increase, and we are very short of room to begin with.

We have an enormous amount of second-hand tackle which we should like you to come to see. This applies to both motor cycles and accessories, and we feel quite sure it will be worth the railway fare to see the stuff. The bargains you will get will more than compensate you for the fare paid. We are really determined on shifting it. Necessity is the mother of invention. We have no other place in which to put our new machines, therefore there is nothing else but to shift the old. If you are a cash buyer YOU CAN TAKE FROM 10% to 15% OFF OUR LIST PRICE for second-hand motor cycles. All we ask is that you make us a reasonable offer, and you will get a bike.

Believe us, we are not talking through our hat, but intend to shift the lot between now and the end of April. It is the time of the year when "the b'hoys" want motor cycles, and we are making this exceptional offer to clear them out. If you come with some money in your pocket, and you cannot buy a motor cycle, then you do not want one, as if you show the least sign of buying, we will guarantee to sell you one. We have no objection to doing trade with you in any way which will suit you best, and shall be glad to have a visit or a line from you.

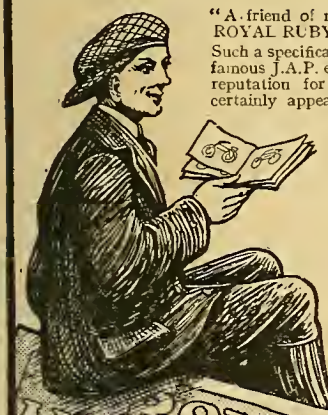
Before closing we will enumerate some of the machines we have in stock and have coming in: Phelon and Moore's, Scott, Jap-Bat (chain drive and belt drive), single and 2-speed gear; Matchless, all numbers of 2-speed gear models; Clyno, Douglas, Zenith, Bradbury, 2-speed gear, belt drive (chain drive by and by); Premier, single and 2-speed gear, lightweight 3-speed gear; Humber, 3½ h.p. 2-speed, lightweight 3-speed; Lincoln Elk, single and 2-speed; Motosacoche, 2-speed gear; Triumph, ordinary and free engine; A.C. tricar, and Morgan runabout. Many of these you can have on the nod, and any you can have for cash. Remember, the great thing in motor cycle dealing to-day is delivery. It is no use your hanging about for weeks for the sake of a shilling or two discount, and losing the season. We can do as well as anybody in the way of discount, and better than anybody in delivery. Remember these things. We have practically nothing booked up, and are ready for your orders any time. We do not appreciate the system of booking up, preferring to be able to say, WE HAVE THE STUFF, READY FOR SELLING.

Come and see the canaries. Note Address:

Hitchen's, Ltd., Morecambe.

'Phone: 112 Wires: "Motor, Morecambe."

"I'm glad I got it"



"A friend of mine told me to write for the ROYAL RUBY catalogue and I'm glad I got it. Such a specification as yours combined with the famous J.A.P. engine, and the ROYAL RUBY reputation for first-class workmanship, must certainly appeal to the most fastidious motor cyclist."

GET THE CATALOGUE TO-DAY.

YOU'LL WANT THE MACHINE TO-MORROW.

ROYAL RUBY CYCLE CO.,
Great Ancoats Street,
MANCHESTER.



FOR DEFERRED PAYMENTS
¼ down and balance in 12 monthly equal payments.

HARRODS

THE BEST HOUSE for MOTOR CYCLES

SIDECARS OR RUNABOUTS

Sole Concessionnaires of the celebrated
MORGAN RUNABOUTS.
Stockists of G.W.K. MOTORETTE, SABELLA, ROLLO, etc., etc.

Finest motor cycle showrooms in London.

NOTE ADDRESS:
HARRODS LTD.
(Richard Burbidge, Managing Director),
Brompton Road, LONDON, S.W.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII.
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION IX.
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

WAUCHOPE'S

STANDARD OF VALUE.

Proved higher than ever by greatly reduced prices of Second-hand Machines and Matchless Selection of Holiday Bargains in New Motor Cycles of every best make.

NEARLY 300 IN STOCK.

— List Free. —

5166.	3½	h.p. 1911 Free-engine **TRIUMPH**	£45	0
5159.	6	h.p. 1911 **ZENITH-GRADUA** ..	£55	0
5124.	3½	h.p. 1909 2-speed **P. & M.**	£35	0
5119.	3½	h.p. 2-speed **C.I.E.**	£20	0
5118.	2	h.p. 1911 **HUMBER**	£26	10
5117.	2¾	h.p. 1911 Free-engine **SINGER** ..	£38	0
5107.	2⅝	h.p. 1911 Standard **DOUGLAS** ..	£28	10
5082.	2¼	h.p. 1910 **ROYAL ENFIELD**	£20	0
5075.	4	h.p. 1908 Free-engine **ROC**	£18	10
5066.	3½	h.p. 1911 **BRADBURY,** Mabon cl.	£37	10
5064.	3½	h.p. 1911 2-speed **HUMBER**	£37	10
5058.	3½	h.p. 1911 **ZENITH-GRADUA**	£45	0
5055.	3½	h.p. 1911 **L.M.C.,** variable gear ..	£35	0
5053.	7	h.p. 1911 Free-engine **INDIAN** ..	£42	10
5001.	3½	h.p. 1911 Free-engine **BRADBURY**	£38	10
4990.	3½	h.p. 1910 Free-engine **TRIUMPH**	£39	0
2965.	2	h.p. 1909 **MOTO-REVE**	£17	10
3876.	5	h.p. 1908 **V.S.**	£20	0
4046.	1¾	h.p. **MOTOSACOCHE**	£11	10
4249.	3½	h.p. 1911 Standard **BAT**	30 Gns.	
4322.	3½	h.p. 1911 2-speed **N.S.U.**	£35	0
4420.	3½	h.p. 1911 Free-engine **PREMIER**	£38	10
4444.	1½	h.p. 1909 **WOLF**	£10	10
4474.	3½	h.p. 1910 **PREMIER**	£27	10
4506.	3½	h.p. 1911 Clutch **REX**	£33	10
4531.	3½	h.p. 1910 2-speed **SCOTT**	£32	10
4533.	2	h.p. 1911 3-speed **HUMBER**	30 Gns.	
4546.	3½	h.p. 1911 **KERRY-ABINGDON** ..	£32	10
4619.	3½	h.p. 1911 Standard **BRADBURY**	£33	10
4628.	3½	h.p. 1910 **TRIUMPH,** Mabon variable gear	£38	0
4631.	3½	h.p. 1909 **J.A.P.**	£22	0
4673.	5-6	h.p. 1911 4-cyl. **F.N.**	£33	0
4677.	3½	h.p. 1910 **BRADBURY**	£28	0
4692.	4½	h.p. 1909 4-cyl. **F.N.**	£20	0
4701.	2¾	h.p. 1909 Twin **N.S.U.**	£18	0
4727.	3½	h.p. 1911 **KERRY-ABINGDON** ..	30 Gns.	
4729.	2¼	h.p. 1910 **ROYAL ENFIELD**	£22	0
4732.	5	h.p. 1910 **REX DE LUXE** and Sidecar	£35	0
4735.	3½	h.p. 1910 **QUADRANT**	£25	0
4742.	3½	h.p. 1908 **TRIUMPH** and Sidecar	£30	0
4748.	2¾	h.p. 1911 **DOUGLAS**	£30	0
4752.	2½	h.p. **J.A.P.**	£7	10
4759.	3½	h.p. 1910 2-speed **BRADBURY** ..	£35	0
4760.	5	h.p. 1911 Free-engine **INDIAN** ..	£39	10
4776.	3½	h.p. 1911 Free-engine **TRIUMPH**	£43	10
4799.	3½	h.p. 1909 **TRIUMPH**	£28	10
4784.	3½	h.p. 1911 T.T. **ARIEL**	£28	10
4792.	5-6	h.p. 1911 4-cyl **F.N.**	£35	0
4831.	2	h.p. 1911 **SINGER**	£27	10
4828.	3½	h.p. 1911 **JAMES**	£32	10
4835.	2¾	h.p. 1910 **DOUGLAS**	£26	10
4838.	8	h.p. 1910 **BAT** and Sidecar	£32	10
4847.	3½	h.p. 1911 Tourist	£26	10
4864.	5	h.p. 1907 **REX DE LUXE**	£17	10
4865.	2½	h.p. 1911 **HOBART**	£25	0
4891.	2¾	h.p. 1911 **DOUGLAS**	£30	0
4927.	2¾	h.p. 1911 **DOUGLAS,** Model D ..	£37	10
4911.	3	h.p. **QUADRANT**	£7	10
3933.	6	h.p. 1910 2-speed **ROC** and Sidecar	£29	0

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For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

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Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

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SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

1912 Free Engine Triumphs, in stock.—Louis Smith, The Garage, Barnard Castle.

3½ h.p. Dene-Precision, perfect condition; £33.—4, Fenham Terrace, Newcastle-on-Tyne.

1911½ T.T. Triumph, 1910 T.T. roadster, 1910 free engine Triumph, 1910 standard Triumph; every one perfect; offers.—Duguid, Kirkby Lonsdale.

SECTION II.

York and Lancashire.

HODGSON for Clynos (in stock).

HODGSON for Premiers (in stock).

HODGSON for Sidecars (in stock).

HODGSON, 10, Horton Rd., Bradford. Tel.: 5361.

THE Great Douglas Agent, Douglas Gourlay, Fallowfield, Manchester.

TWO Twin Rexes, perfect, £13/10 and £12; sidecar, 30/-.—280, Birch Lane, Dukinfield.

1910 Triumph, new back tyre and tube; £30, perfect.—17, Gatefield Rd., Sheffield.

MOTO-REVE, 1910, 2¾h.p. twin, magneto, Druids, good order; £19.—2, Hartley Hill, Leeds.

BRADBURY, 1911, 2-speed, beautiful condition; £38, or near offer.—3, Charles St., Blackpool.

HUMBER Lightweight, 1911, 2h.p., splendid condition; sacrifice £22/10.—30, Church St., Leigh.

6 h.p. Bat-Jap, 6 months old, fine condition, will do 60 m.p.h.; £45.—Bigland, Ulverston, Lancashire.

3½ h.p. Free Engine Rex, absolutely new condition; must sell, cash offers.—Tuson, Westcliff, Preston.

REX, 1911, new August, best model, tourist, 3½h.p., under 1,000, perfect; £33.—Reed, 6, Blake St., York.

WOLFE, 2h.p., 1910, magneto, Druids; any trial; £18/10.—57, Parrin Lane, Monton, near Manchester.

DOUGLAS, 2¾h.p., standard model, very little used, as new; accept £32.—Wiltshire, 52, Barnsley St., Wigan.

QUADRANT, 2¾h.p., h.b.c., trial; exchange, £7/10.—A. Illingworth, 1, Ruskin Terrace, Lee Mount, Halifax.

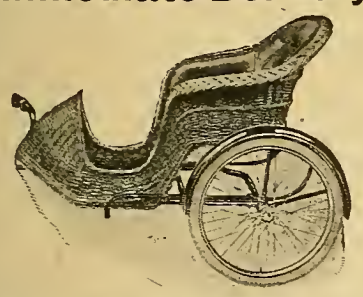
3½ h.p. Triumph, new condition, 1908, £25; Kerry, 1911, £29; 3h.p. Triumph, £10.—168, The Moor, Sheffield.

1911 Rex de Luxe, 5-6h.p., 2-speed and free engine, everything perfect, lamp, horn; any trial; £40.—Anderson, ironmonger, Gorsehill, Stretford, Manchester.

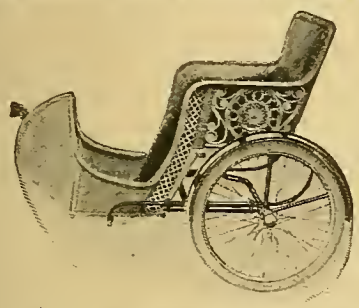
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1912 CANOE CORONETS.

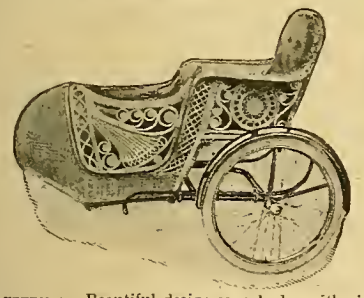
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PICKLES for Lincoln Elks.—3½h.p. £34, 2 speede £42, 1911 3½h.p. Lincoln Elk £26; owner buying 1912 model.

PICKLES for sidecars from 5 guineas, in stock; B.S.A., Chater-Lea, Royal Avena, J.A.P.; Michelins 17/6; machines sold on commission, 5%; no sale, no charge.—Pickles, Church St. Garage, Bradford.

OFFERS wanted.—Triumph (soiled), 2¾h.p. Enfield, 3½h.p. Brough, free engine, 5h.p. Rex.—86, Fargate, Sheffield.

1911 Standard Triumph, new Kempshall, and Dunlop belt, £40; 1911 Bradbury, £35.—Cross, agent, Rotherham.

REX, 3½h.p., splendid order, new belt and tyres; trial allowed; nearest offer £9.—22, Abraham St., Blackburn.

ZENITH, 1911½, 3½h.p., Jones, Autoclipse, horn, spare cover, tube, valve, warranted; £44.—Dr. Godley, Blackpool.

1912 6h.p. Matchless in stock, 54 gns.; early deliveries of Triumphs, Bradburys, and Douglases.—Cross, agent, Rotherham.

1912 Humbers and Rovers; immediate delivery from stock; also Millford sidecars.—Madgwick's, Knowsley St., Bolton.

WIGAN.—New Hudson, 3½h.p., 3-speed models, for immediate delivery, also 2¾h.p. 3-speed.—At Timberlake's, King St.

WIGAN.—Rover Agency. Clutch and 3-speed sidecar models in stock.—Timberlake's, King St.

WIGAN.—Timberlake's, King St., for Humbers, all models in stock.

WIGAN.—B.S.A. Agency. Clutch and 2-speed models for immediate delivery.—Timberlake's, King St.

WIGAN.—Enfields, 2¾h.p., in stock; early delivery of 6h.p. sidecars.—Timberlake's, King St.

LIVERPOOL Official Agents for Royal Enfield, Humber, N.S.U.; immediate delivery from stock.—W. Harrison and Co., 73, Bold St.

BRADBURY, 1912, 2-speed. F.E., not done 150 miles, perfect order and condition; £44.—D. Davies, 34, Aitken St., Accrington, Lancs.

1912 2¾h.p. Enfield, unpacked. 2-speed, free engine; 1909 2¾h.p. Moto-Reve, splendid condition, magneto, £12.—Fred Lee, Pocklington.

1907-8 Twin Rex, 5-6h.p., Mabon clutch, B. and B. carburetter, h.b.c., good running order; offers wanted.—87, Ayres Rd., Manchester.

TRIUMPH, 1910, perfect condition, enamel and plate perfect, numerous spares, very fast; bargain, £31.—Robinson, 33, Rhodes St., Halifax.

1910 Triumph, free engine, perfect condition throughout, splendid climber, Palmer back tyre, tools; £37.—Gray, tax collector, Bridlington.

2¾h.p. Minerva, 1911 Simms, B. and B., spring forks and saddle, light and low, footboards; £15.—Heyworth, photographer, St. Annes-on-Sea.

1911 Rex Tourist, free engine, Senspray carburetter, not done 300 miles, as new, tools, spares, etc.; £35.—Larrad, Knitter, Horbury, Wakefield.

PHELON and Moore, late 1909, almost entire new engine and gear, perfect condition, splendid sidecar machine.—13, Welbury Drive, Bradford.

BUY the Best.—4h.p. 2-speed Singer, £65; 2-speed B.S.A., £60; F.E. Rudge, £55; F.E. Singer, £55.—Grosvenor Motor Co., Bradford St. West, Bolton.

F.N., 2¼h.p., with tricycle attachment, 2-speed, free engine, multiple plate clutch, first-class order, mileage under 1,000; £25.—Dr. Naden, Warrington.

N.S.U., 3½h.p., magneto, B. and B., new tyres, lamp, Whittle bars, footboards, thoroughly overhauled, like new.—Write or call, Parkinson, Oldcotes, Rotherham.

PRACTICALLY New 1912 4h.p. J.A.P., Bosch, B. and B., Brooks, studded Dunlops, ridden 120 miles; £39/10; trial; sidecar, £4/5.—P. Proud, Birkdale.

DOUGLAS, 1911, in good order, including Veeder trip cyclometer, good lamp and horn; bought 1912 same make; £26/10, a bargain.—Dr. Aikman, 50, Market St., Wigan.

1911½ 3½h.p. Humber Motor Cycle, fixed engine, touring model with T.T. competition engine, about 700 miles.—H. Bert, Rockcliffe, Princes Rd., Lostock, Bolton.

2-STROKE Scott, Jowett 2-speed, free engine, kick starter, new tyres, splendid condition, climb anything, all accessories; £22.—Can be seen 6, Binnie St., Bradford.

1911½ Rex de Luxe Model, free engine, 2 speeds, perfect, not ridden 50 miles, owing to illness; sacrifice, £40. — 6, Wellands Terrace, Bradford Moor, Bradford.

3½h.p., P. and M. engine, B. and B., magneto, belt, free engine, recently overhauled, splendid condition, Clinchers; trial; accept £15.—Blackburn, Northgate, Dewsbury.

TRIUMPH, 1910, free engine, recently re-plated and re-enamelled, and clutch parts renewed by makers, new main and rod bearings, new pins, splendid mount; £39; bought new machine.—B., 34, West View Rd., Barrow.

1912 PREMIERS.

The most successful machine of the year. The 3½ h.p. Three-speed Model, ideal for sidecar work. We can deliver from stock, and offer best exchange terms.

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3½ h.p. Three-speed Models **£49 10**
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TRIUMPH, 1909, 2 speeds	£33 10
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REX, 3½ h.p., M.O.V., low built	£6 18
N.S.U., 3⅝ h.p., 1909, 2-speed gear	£23 10
REX DE LUXE, 5 h.p., twin, 2 speeds, handle starting, M.O.V., 1911 model	£43 10
REX DE LUXE, 5 h.p., twin, 2 speeds, 1910	£37 10
REX, 3½ h.p., spring forks, magneto, h.-b. control, 1909 model	£22 10
REX, 3½ h.p., 1908, spring forks, magneto, h.-b. control, beautiful condition	£16 10
N.S.U., 3½ h.p., 2 speeds, magneto	£19 10
MOTO-REVE, 2¾ h.p., 1911, Armstrong 3-speed	£25 10
QUADRANT, 3½ h.p., magneto, spring forks	£16 10
N.S.U., 3½ h.p., M.O.V., magneto	£15 10
REX DE LUXE, 2 speeds, magneto, handle starting, h.-b. control	£22 10
HOBART, 3 h.p., vertical engine, low	£8 10
OLYMPIC, 3½ h.p., vertical engine, 26in. wheels	£6 10
PREMIER, 3½ h.p., 1912, 3-speed gear	£58 0
PREMIER, 2½ h.p., 1912, 3-speed gear	£47 5
QUADRANT, 3 h.p., vertical engine	£5 10

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New Dunlops, 28 × 2 and 2¼, wired edges	10/6
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150 New Tubes, 26 × 2¼	5/11
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4¼ h.p. PRECISION Engines, new 1912 models. Your present engine taken in exchange. Delivery from stock.

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Delivery from stock, 1912 models. Machine can be started with wheel at rest on ground.

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Long Handle-bars, dropped ends	5/6 and 6/6
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New Mirror Lens Lamp with generator	12/6
New Coronet Pistons, 81 mm. bore	2/6

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Buy your new machine at "THE SPOT for Bargains" and we will tune it up and get it into thorough going order and deliver it ***ready to ride***. We do the spade work and don't expect our clients to after they get delivery of the machine. But that is only one advantage of buying from Maude's. The fact is, there are so many advantages that we have only space to dwell upon ONE each week. We take your old mount in part payment for a new 1912 model. Cash, Easy Payments, or Exchange.

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Bradburys,
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Etc., etc.

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136, GT. PORTLAND ST.,
LONDON, ——— W.

MOTOR BICYCLES FOR SALE.

1911 Premier, £34; 1911 Bradbury, £35; 1910 Triumph, £35; 1910 P. and M., £38; 1912 Triumphs, P. and M's, Bradburys, Ivy motor cycles.—T. Reed, Nettlesworth.

7h.p. Twin Peugeot, with best Montgomery sidecar, Albion plate clutch, back hub, Whittle belt, 6in. adjustable pulley, lamp, horn; £40; trial. — Hardy, Teviot Dale, Stockport.

HUMBER, 1911, 3½h.p., 2-speed, free engine, takes sidecar anywhere, lamp, horn, new valve, tools, new Watawata belt, Dunlops, in fine condition; any trial; £38.—227, Crookes, Sheffield.

ONE New 1911 Enfield, 2-speed, free engine, chain drive, slightly soiled, sell cheap; one Imperial Triumph, 3½h.p., with magneto, sound condition, sell cheap.—Parkinson and Co., Rawtenstall.

CLYNO 1912 Motor Cycle and Sidecar, ridden 250 miles, just received delivery, absolutely new; cost £85; financial reasons for selling; accept £80.—Apply, Laughton, Cycle Dealer, Leopold St., Sheffield.

PREMIER Motor Cycle for sale, Millennium 2-speed, free engine, new June, 1911; cash offers, or exchange for new machine of approved make, pay cash difference.—J. Langton, 26, High St., Chorley.

ORIENT Motor Cycle, 3½h.p. Norton engine, B.B. carburetter, h.b.c., Druid forks, Bosch magneto, just overhauled, perfect condition, tools, lamp, horn; nearest £17.—Cole, 77, Barlow Moor Rd., Didsbury, Manchester.

READY for Delivery.—2¾h.p. lightweight, in excellent order, magneto, free engine, B. and B. carburetter, h.b.c., heavy rubber studded tyres, almost new; trial by appointment; £12 cash.—T. Patrick, 34, Byelands St., Middlesbrough.

TRIUMPH, 1912, clutch, new Feb., £50; Triumph, 1910, in sound order, complete with F.R.S. lamp, £27; 1912 Quadrant, 3-speed, and F.E., as new, £47; T.T. Rudge, 1911, new Oct., £39; 1912 6h.p. Zenith, £62.—Barker and Stacey, Dronfield.

PHŒNIX Forecar, 2-speed, free, handle starting, magneto, new carburetter, tyre, and tube, recently painted and overhauled, £15; also Bradbury motor cycle (1911¾), 2-speed, free, not ridden 50 miles, £45, or near offer.—16, Chelsham Rd., Bury, Lancashire.

PREMIER 1912 Motor Cycles.—In stock for immediate delivery, 2¾h.p. lightweight, standard model, £36; 3½h.p. standard model, last of 1911 contract, new, reduced price £39, genuine bargain; 2¾h.p. lightweight, 3-speed, free engine, £46.—Official agents, Robinson and Price, 39, Whitechapel, Liverpool.

NORTHERN Depot, Ltd., everything motorish, Leece St., Liverpool.—In stock for Easter, all new 1912 models, finest assortment in Liverpool, clutch Triumph, clutch Kerry-Abingdon, 2-speed Kerry-Abingdon, Humber 2h.p. lightweight, 8h.p. 2-speed Rex-Jap, Clyno; another Clyno for April 27th; Northern special sidecars, 5gns., complete; de luxe torpedo body sidecars, 12gns., equal to the finest made; Millfords in stock; foot muffs, luggage carriers, and every requisite for the Easter tour; showrooms not quite out of builders' hands, but all above goods in stock.

GREAT Sale of motor cycles.—3½h.p. Rex, £7/10; 4h.p. Chater-Lea, magneto, spring forks, B. and B., £12; 3h.p. Triumph, £9; 1909 Douglas, £18/10; 1911 Kerry-Abingdon, £28; 5-6h.p. Rex, 1909, twin-cyl., free engine, and sidecar, £25, worth £40; 1908 Triumph, new condition, £25; P. and M., nearly new, 2-speed, free engine, £37/10; we have about 60 second-hand motor bikes in stock, consisting of 1907, 1908, 1909, 1910 Triumphs, prices from £15; several Bradburys, Siagers, Moto-Reves; all machines sold are warranted in good order; sidecars from 50/-.—The Motor Cycle Exchange, 160, Young St., Sheffield.

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

3½h.p. Rover free engine motor cycle, new, with sidecar.—J. Cooke, Sandbach.

BRADBURY, 1912, brand new, unridden; what offers?—Braaden, 151, Welsh Row, Nantwich.

RUDGE, T.T., bought last autumn, new tyres; any examination; £37/10. — Parry, Gayton, Heswall, Cheshire.

2½h.p. Magneto Ariel, excellent condition; £16/16; trial; photo.—Hill, photographer, Abbot's Bromley, Rugeley, Staffs.

TRIUMPH, standard, 1908, everything in splendid condition; £27, or near offer.—Speed, Watergate St., Whitchurch, Salop.

£7.—Rex, m.o. valves, low, long, new tyres, engine wants cleaning, and new coil.—Particulars, T.S.A., 20, Wellington Rd., Rhyl.

3½h.p. A.S.L.-J.A.P., new last April, excellent condition, accessories; £36, or offer, bargain.—Greenhalgh, Dawley, Shropshire.

B.S.A., late 1911, 3½h.p., standard model, with or without Montgomery sidecar, perfect condition; what offers?—Lowe, Old Mill, Congleton.

BAT 4h.p. Motor Cycle, only used few times, splendid hill-climber; sacrifice for £28 if sold at once.—81, Spring Bank, New Mills, Derbyshire.

TRIUMPHS, free engine models, B.S.A. 2-speed and free engine models in stock; no waiting.—Motor Depot, 49, High St., Black Heath, Staffs.

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247.	**CHATER-J.A.P.** 4 h.p., 1910 model, magneto	£26
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172.	**TRIUMPH** 3½ h.p., 1908 model, stand.	£25
200.	**V.S.** 5 h.p., 1909 model, Truffault forks	£25
168.	**KERRY** 3½ h.p., 1910 model, clutch	£30
177.	**N.S.U.** 5½ h.p., 1908 model, 2 speeds	£28
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148.	**N.S.U.** 3½ h.p., 1908, 2 speeds, take sidecar	£22
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278.	**N.S.U.** 3½ h.p., 2 speeds, spring forks	£24
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267.	**N.S.U.** 3 h.p., magneto, low built ..	£14
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289.	**REX** 3½ h.p., 1909, tourist, magneto	£22
291.	**TOM SILVER,** 1910, 3½ h.p., magneto	£24
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198.	**CENTAUR** 2 h.p., belt drive	£3
275.	**MINERVA** 2 h.p., M.O.V., low built..	£8
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	REX 5-6 h.p., 2 speeds, 1911 model	£36
	HUMBER 3½ h.p., 1910, 2-speeds	£30
	REX 5 h.p. Tourist, spring forks	£16
	ENFIELD 2¾ h.p., 1911, twin, chain drive	£28

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Models for everybody. Prices from **£6 6s** to **£12 12s.** Strong, comfortable, well sprung and balanced, handsome and well finished and appointed. Write for List.

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THE MOTOR CYCLE

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ADDRESS: 20, TUDOR STREET, LONDON, E.C.

Unofficial Records.

THE present is an era of record breaking, and the motor cycle pastime is quite as much to the front in this connection as any other form of sport; in fact, it is more so, and we have so many records on the carpet that they are becoming well nigh bewildering. We have no fault to find with properly authenticated record attempts, but we think it is time to suggest that in future all records, no matter in what direction, should receive the hall mark of the governing body of the pastime before they be accepted. We are often asked to assist riders by sealing their machines and to receive at our offices proof of their visits to various towns and villages on the lines of their route by the posting of signed cards. This we have willingly undertaken, because it is our duty to record all important events in the history of the sport and pastime, but in our opinion it would be very much better for all concerned if all test rides and record attempts, of no matter what description, were done under the ægis of the Union. The difficulty is that the A.C.U. cannot recognise any performance on the highway where the legal limit of speed is exceeded. However, there are many methods of demonstrating the capabilities of a machine and its rider without resorting to excessive speeds, and such performances might quite reasonably be observed by A.C.U. officials and proper fees be charged for the checking and certifying.

Last year a well-known rider did set out to establish a record under proper A.C.U. surveillance, but, unfortunately, met with an accident, over which he had no control, and was compelled to relinquish his attempt. This alone proves that the A.C.U. is quite willing to undertake the checking of long distance rides.

A good deal of what we look upon as unnecessary exploits in this direction would be suppressed if the Auto Cycle Union were to issue certificates of reliability, hill-climbing, etc., on the lines of the certified performances which the Royal Automobile Club undertakes in connection with motor cars and accessories. This method has always appeared to us to be such an excellent one in every way for hall-marking a performance that we recommend its consideration to the Auto Cycle Union Committee, not only as a means whereby the pastime may be benefited generally, but also as a remedy for depleted coffers. It would be, we think, useless to argue that the expense of such checking and certifying would hinder riders from undertaking the trials or record attempts, or that the A.C.U. could not make a profit out of the fees. The suggestion we make is one that should receive the attention of the A.C.U. and the Manufacturers' Union; the former in the interests of sport, the latter as a business proposition. If both bodies were to set their faces against unregistered performances they would die a natural death; the time is opportune to kill them.

Last year, at the commencement of the record breaking season, we made another suggestion, viz., that as the A.C.U. could not recognise certain records it might be advisable to form a special body which would hall mark these performances on the lines of the Roads Records Association which controls cycling feats which the N.C.U. cannot recognise. Our suggestion bore no fruit, but it would be better for the pastime if this were done than to allow the question of unofficial records to drift.



Gathering of members of the Taunton and District M.C.C.

Marseilles to Nice Road Race.

THE most important road race of the season in the South of France was held on the 7th inst. from Marseilles to Nice—a distance of 122 miles—and was won by Berlié on a twin Moto-Rêve of 63 × 80 mm. bore and stroke, at an average speed of practically 39 m.p.h. The race, which was held for the second time by the Moto Club de Marseilles, and elicited forty entrants, was distinctive by reason of the remarkably fine country to be traversed. Starting from the suburbs of the great seaport at 6 a.m. at intervals of one minute, the competitors ran through the smiling Provence country to Trets and Brignoles, touching the shores of the Mediterranean again at Fréjus. From this point they had to climb into the Esterel, comprising twenty miles of magnificent mountain country with only one house on the entire route. Starting from the sea level at Fréjus, they rose to an altitude of more than 1,000ft., then dropped down to the sea level again at Cannes. Practically half the distance through the Esterel was up beautifully surfaced roads cut out of the face of the mountain, and the other half was a dangerous winding descent. From Cannes to Nice the road ran close to the sea shore, and was perfectly level. Owing to the dangerous nature of the road, however, by reason of the presence of tramways and vehicular traffic, the competitors were given one hour in which to cover the twenty miles. The finish took place on the famous Promenade des Anglais at Nice. Results:

MOTOR CYCLES OF MORE THAN 500 C.C.

	h.	m.	s.
Agnero (twin Peugeot)	4	8	0
Perrin (single Peugeot)	4	29	40
MOTOR CYCLES OF LESS THAN 500 C.C.			
Berlié (twin Moto-Rêve)	3	8	0
De Carfort (single N.S.U.)... ...	3	49	0
Cavalier (single Magnat-Debon) ...	3	51	0
Closs (single N.S.U.)	4	1	0
MOTOR CYCLES OF LESS THAN 400 C.C.			
Nicolas (single Magnat-Debon) ...	3	38	0
Vaché (single Magnat-Debon) ...	3	40	0
Desister (twin N.S.U.)	3	43	0
MOTOR CYCLES OF LESS THAN 300 C.C.			
Cuzeau (single Terrot)	3	53	0
Duvernoy (single Peugeot)... ...	4	29	0

MOTOR CYCLE ROAD RACE IN THE RIVIERA.



Desister (N.S.U.) negotiating one of the numerous bends.





Aler (Magnat-Debon) on the Esterel Pass. A. Berlie (Moto-Reve), the winner, rounding one of the difficult S bends of the Esterel. The photographs were taken between Frejus and Cannes.

OCCASIONAL COMMENTS.

BY IXION.

The Novice's First Machine.

At this period a number of novices are busy wrestling with their first machines, and a few hints may prove useful in acquiring that centaur-like understanding of the jigger which is essential to enjoyable riding.

The first necessity is to acquire the art of mounting, and I recommend taking the machine to a dip in a lonely road, and after removing the belt, to practise mounting and dismounting and braking, until perfect confidence is attained—a process that need only occupy half an hour. In practising mounting with the engine firing, one hand should be kept on the valve lifter lever, and the other on the throttle lever. The engine can then be instantaneously stopped by a twitch of either forefinger, and mounting is as easy as with a push bicycle. Starting troubles are avoided by warming the engine up on the stand; a novice should never essay starting the engine unless it has first been warmed up for a few seconds, or at least freed by injections of petrol or paraffin.

Finally, it is a great tip for the novice to use a low gear. The tremors of learning are greatly enhanced by a 4 to 1 gear, with which many machines are delivered. The machine needs running along at a far greater speed to ensure an instant explosion when the valve drops, and it bounds away too quickly. I always instruct a timorous novice with a 5½ gear, and teach him to keep the throttle as nearly closed as possible until confidence is attained. Before the first traffic run, do not be ashamed to spend ten minutes with the machine on the stand, practising with the foot brake until the requisite toe movements become automatic. Theoretical knowledge scoots out of the brain at the first genuine emergency, and the muscular movements essential to rear braking should be made automatic, instinctive, and subconscious as soon as possible. Many novices rely on their front brakes in emergencies, and modern front brakes are usually fairly powerful; but sudden and violent front braking is the worst thing imaginable in a particular emergency rather frequent in the earlier rides, viz., approaching a corner at too high a speed, the rider being deceived by the smooth running of his mount.

Inferior Tyre Repair Outfits.

I am rather sorry to notice that some makers continue to supply old-fashioned tyre repair outfits, containing patches and solutions of the very partially adhesive type, which became unsaleable on the ordinary market three or four years ago. Everybody knows that to-day several specialised brands of solution and patch are streets ahead of the normal types produced a few years back.

The old-fashioned types were efficient in the hands of a tyre expert. With the newer patented outfits the rawest novice can hardly botch a repair. Yet some motor cycle manufacturers are so penny wise and pound foolish as to send out kits which no up-to-date rider would ever dream of buying, or even of using. I hope the erring manufacturers will be persuaded to include really good stuff in the near future. They might just as well give nothing away as these inferior outfits which are barely suitable for repairing push-bicycle tyres, and are not always suitable for those.

Starting Engine by pulling up Rear Wheel.

Those ardent spirits who have bought T.T. machines devoid of pedals should not rest content until they can rely on their engine starting easily and surely when the rear wheel is pulled up. This is not always easy—and sometimes even impossible—when the engine is tuned to the adjustments which win hill-climbs. But it is desirable for a machine not intended for competition. The adjustments include a narrowish spark gap, some choking of the bottom air, not too large a jet, knowledge of the most suitable setting of the carburetter levers, and an ignition not unduly advanced. These adjustments are compatible with the attaining of fifty miles an hour on the road, which is amply sufficient for fast road work.

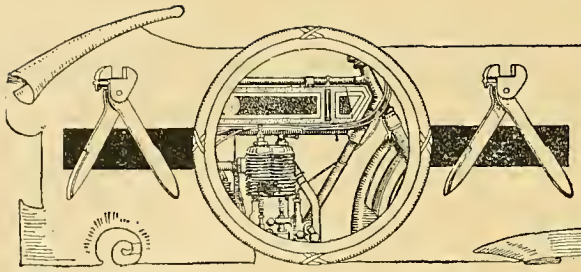
I am just busy performing these settings on my own brand new T.T., which as delivered was a shockingly bad starter. I have inserted a choke tube, and considerably retarded the ignition, which caused bad back-firing when the machine reached me.

If the rear wheel were pulled up, engine refused to fire at all on the stand if the ignition were retarded, as the spark was not hot enough with the armature out of maximum position. I have not yet got things quite to my liking, and fancy I shall have to raise the petrol level a shade, before a gentle pull-up of the wheel starts the engine-song with certainty.

I notice some makers who retain a rear brake *inside* the belt rim are arranging for the rear wheel to be withdrawn without unshipping the brake, by splaying their rear forks sufficiently for the wheel to be edged past the brake shoe. This is all to the good, and is quite as efficient as fitting the brake outside the periphery of the belt drum. I doubt if these outside brakes are quite as powerful as the inside patterns.



In the winding Devonshire lanes during the progress of the M.C.C. Jarrott Cup Competition. The rider is Geo. Brough (6 h.p. Brough) nearing Holne Chase.



A NOVEL SLIDE VALVE ENGINE.

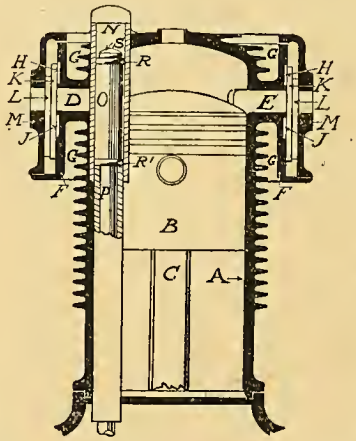
BY AN ENGINEER.

THE successful application of the slide valve principle to engines for motor cars has undoubtedly whetted the appetite of many motor cyclists, and, accordingly, not a few among them look forward to the advent of a slide valve-engined cycle with considerable interest. On this subject there can be no question, however, that it is mainly by the aid of water-jacketing that this sort of motor has been rendered practicable, and few types of the slide valve would be of use without provision for water-cooling the cylinder. But a general objection appears to prevail against water-cooled motor cycle engines.

The modern air-cooled motor cycle engine is, without doubt, a very efficient prime mover, achieving quite remarkable performances. That it turns at high speeds, propelling a machine for mile after mile under adverse conditions, yet with great regularity and precision, is striking proof of its efficacy. The excellence of workmanship and material also has a great deal to do with this service that the motor cyclist receives from his mount. On the other hand, it will be admitted by experienced persons that the valve mechanism—the mushroom valves of the motor—is not free from defects, inasmuch as the heat generated by the engine renders the valves liable to warping and fractures, and their springs to loss of their temper. If it were not for these deficiencies the motor cycle engine would be almost perfect: they constitute the rift within the lute which is ever prone to annoy the motor cyclist *en route*. For some time past much ingenuity has been expended upon improving the mushroom valve; nevertheless it does not appear at all easy to overcome the difficulties mentioned.

In view of such facts, together with recent developments in engine construction, one turns, naturally enough, to a consideration of the possibilities of the sliding valve system. Valves of this kind demand extremely thorough means for lubrication, which when achieved is a great advantage in itself, but usually a water jacket is an essential feature in order to prevent the oil from being dried or burnt up. Once we come to the application of ordinary slide valves, whether reciprocating or rotary, to an unjacketed, *i.e.*, air-cooled, engine we are likely to be disappointed, for they cannot well be oiled, and are, *ipso facto*, of little or no use. At any rate, they are almost certain to prove poor substitutes for the familiar mushroom pattern. And, although valves of the last mentioned category work in an unlubricated state in direct contact with the heated cylinder, I think—nay, I know—that most experimenters who have attempted to utilise sliding valves in a similar way have experienced failure. Hence I am particularly interested in the design now before me of a forthcoming new engine for motor cycles, because it would seem to approximate closely to the ideal

The figure reproduced is a sectional side elevation of the vertical single-cylinder, having a diameter of 82 mm. (3¼in.), with a piston stroke of 101 mm. (4in.), and it shows the special construction clearly. Within the unjacketed cylinder A are the usual piston B and connecting rod C, but it will be observed that, though the cylinder is provided with the customary radiating ribs or fins, there are two large slot ports D and E for admission and exhaust respectively. These ports form two junctions with the cylindrical flange F surrounding the cylinder head (at a distance of about half an inch therefrom), and the whole is an integral casting. With the exception, therefore, of these port junctions between the cylinder and flange, there is an annular air-cooled space G around the cylinder head. This ventilated space is for the purpose of carrying off the heat from the cylinder and insulating the hot cylinder from the chest in which the valves are arranged to work. This is a decidedly ingenious departure, and, no doubt, its utility, quite apart from the novelty, will readily be perceived.



Above and below the ports (D and E) is a pair of packing rings H and J, and embracing the flange F concentrically are a pair of thin, narrow valve rings K and L, provided with slot ports (not shown) corresponding to those at D and E. A second removable flange M, adapted to be bolted to the out-turned lower rim of the flange F, forms a circular cover comprising the valve chest. It has inlet and exhaust port holes as indicated, and a pair of integral slide-ways for the valve guides, one of which is seen in section at N. Within this slide-way N is the hollow circular valve guide O, and the slide rod P passes through it, holding the upper and lower edges of each valve ring by means of clips R and R1, which are secured together by the bolt S. The valve rings are reciprocated in proper sequence through their slide rods that are moved in the usual manner by a pair of half speed gear wheels, having attached to them two small cranks and connecting rods, in lieu of cams. In the position illustrated the piston B is at the completion of the compression stroke, when the inner pressure-holding valve K has descended to its lowest point, its ports being covered by the packing ring J.

A Novel Slide Valve Engine.—

The working piston B is lubricated by crank splash, but the valves are oiled mechanically by forced feed apparatus, which, for the present, I am not at liberty to describe. It may be said, however, that the lubricant is forced in regulated quantities to the top of the valve chest, while the lower edges of the valves dip into the constant level of an annular oil well. The oil is pumped from the crank chamber, and the surplus finds its way back thereto by an appropriate conduit. The reader will, perhaps, understand the importance of the annular air-cooled space G, for thereby practically nothing exists to cause overheating of the valves. Through this air way the draught affords ample insulation from cylinder heat, and I am of opinion that it assists rather than retards the cooling of the main cylinder. As for the valves themselves, it is clear that they are extremely light and well guided, and also that they are easy of approach for cleaning or renewal. I should say that valves of this sort so arranged ought actually to wear longer than the working piston, for the reason that they are balanced, have no side thrust, and are subjected to but little heating effect. One cannot expect more than this from any type of valvular mechanism, and one does not usually get so much.

A Convert: A Coal Strike Episode.

IT was the second week of the coal strike, and railways were practically useless as far as passenger traffic was concerned, when a Birmingham clergyman had to speak at a meeting at Malvern at 3 p.m. and return to Birmingham in time for another meeting at 8 p.m. Trains were so scarce that in order to reach Malvern by three o'clock it was necessary to leave Birmingham at a few minutes after nine.

The question was how to reach Birmingham before 8 p.m., when the only train certain to run would not arrive till close on midnight, although a train might possibly be leaving Malvern at 6 p.m., arriving in Birmingham some time after eight o'clock. Obviously the only alternatives to trains were to motor by road or travel by air. The first alternative was chosen, so accordingly a 3½ h.p. Zenith and sidecar were generously placed at my disposal by a friend, and it was arranged that I should meet the reverend gentleman at Malvern at 5 p.m.

Leaving Birmingham at 3 p.m., I made very good running with the empty sidecar, although hindered by a strong head wind, and, reaching Droitwich, I stopped to take oil and petrol aboard. This and a few minutes' conversation on the evergreen topic of carburation occupied some twenty minutes. Proceeding on my way, Worcester was reached without incident, and I crawled through the traffic, turned to the right at the Cross, and headed straight for the Malvern Hills.

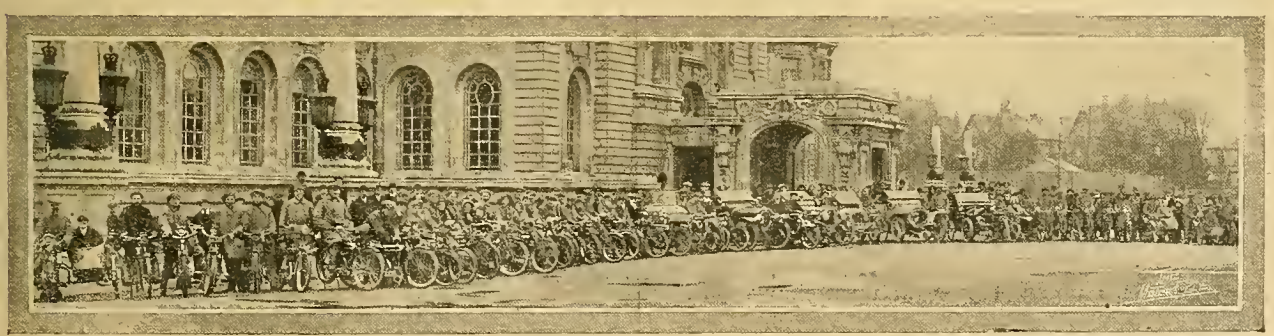
Easily overhauling two motor cars, I reached Malvern some minutes before five, but having to enquire and find my final destination, I finally reached it dead on time. The keen wind had sharpened my appetite, and half an hour was allowed for tea. At five minutes after the half hour the Zenith was headed back for home with the passenger on board. With the same strong wind now helping us, I appreciated the Zenith gear, as it was possible to speed easily along on a high gear without the engine labouring in the least.

On Worcester tram setts my passenger appreciated the luxurious springing of the sidecar; he had already expressed surprise at the speed and hill-climbing power of the turnout. Droitwich was passed, and Bromsgrove saw us make our first stop to light up. The sky had got very overcast, and we anticipated a return to the rough weather of the morning.

As we passed through Rubery a few flakes of snow fell, and before we reached Longbridge we were in the thick of a blinding snowstorm. Goggles were useless and were discarded. I could then see better, but had to be constantly mopping my eyes, as the soft snow plastered on my forehead and, melting, literally filled my eyes with water. Twice we nearly crashed into vehicles as we overtook them, although I had reduced speed to a mere twelve miles an hour.

Eventually we ran clear of it at Selly Oak, but time had flown considerably, and it was nearly eight o'clock. Through Birmingham, we dodged the traffic, and I eventually landed my passenger only two minutes late.

We had both managed to keep dry, thanks to waterproofs and oilskins, but the last thirteen miles had been extremely severe, and had occupied an hour and five minutes. Despite the discomfort of the last stage, my passenger was converted; he had to confess that the sidecar was quite as comfortable as a car, and, as for convenience, if he had waited for the possible train at six o'clock he would not have reached the second meeting till nearly an hour late. However, he now no longer looks down on motor bicycles as noisy, nasty nuisances. A.G.D.C.



A long line of members of the Cardiff M.C. assembled outside the City Hall, Cardiff, on the occasion of the club's opening run to the Speech House, Forest of Dean.

How to Cheapen Running Expenses.

By "IXION."

NO motor cyclist who keeps strict and accurate accounts ever found motor cycling an expensive hobby. Not one rider in a thousand can point to any large compulsory expenses, except the first cost of his machine, and the loss due to depreciation when he comes to sell it. The faint rumours of the costliness of the hobby arise in the following way. Unbusiness-like persons of a self-indulgent temperament buy a machine, and, though they keep no accounts, they discover at the end of the year that quite a number of tradesmen's accounts remain unsettled. As the motor cycle has been their sole new cause of expenditure, they pull a wry face, and remark to themselves and to their acquaintances: "Hang it all; hadn't an idea motor cycling made such a hole in your purse. Those silly papers say it's cheap. All I know is, I've got to sell my jigger, and sell it quick, or the butcher, the baker, and the candlestick maker will be sending along a bit of blue paper!" The tale of woe sounds extremely plausible, and Smith, Brown, and Robinson, whose dens were littered with motor cycle catalogues, take fright and postpone the happy day indefinitely.

A Half Truth is often More Dangerous than a Lie.

In such cases the motor cycle is concerned in the temporary insolvency, though it is a gross libel to pretend it is the real cause. Before the now harassed and impecunious Wiggins got his motor bicycle he was leading a fairly simple life. He spent a shilling or two weekly on theatre tickets, tobacco, billiards, and the like, without feeling the strain. After he got his bicycle he remained a victim to these amiable weaknesses, because the motor bicycle did not occupy all his spare time by any means. *Moral No. 1:* Many a man can afford to motor cycle as his sole hobby, though not everybody can be a regular theatre-goer, local billiard champion, *cavalier des dames*, etc., etc.

The Cost of a Holiday.

Wiggins's annual holiday in his pre-motor cycle era probably consisted of a week or a fortnight at Scarborough or Yarmouth with two or three of the boys or one of the girls. He puts up in a cheap boarding house, and lavished half-crowns tolerably freely at various evening resorts. This cheap pastime disappeared when he bought his motor bicycle. He now "tours" the country, and spends each night of his fourteen days' holiday at a different hotel—often the best hotel in the towns he visits, partly because these are usually motoring houses, partly because his riding companions are often wealthier than he is.

The result is that two nights at hotels, coupled with two lunches at other hotels *en route*, various dust-layers in the form of roadside tipple, and two teas at a confectioner's, cost him more than a whole week's bill at the Yarmouth boarding house in ancient days. Moreover, he still paints the town red each evening of his holiday—he trots round to give the girls a treat, and ends up in the local theatre or billiard saloon.

Apart from his strictly motor cycle expenses, he is spending much more than he used to do; and if he rides 200 or 300 miles a day as well, uses up one cover, one belt, one valve, two plugs, a belt-fastener, has to pay a police fine, loses a generator and toolbag, purchases fresh wearing apparel because he forgot to pack sufficient collars and socks on his carrier, it is evident that the total bill for his annual outing may be double, treble, and quadruple what it once was, though perhaps not a quarter of the increase has been spent on the machine and its needs. *Moral No. 2:* Many a man can afford a motor cycle who cannot afford a fortnight's tour with meals and residence at swagger hostelries; and many a rider can afford a fortnight's tour, provided he be content with a stroll and a pipe after arrival at his destination for the night.

Different Methods of following the Pastime.

Once again, the careless type of petrol financier is usually rather a lazy bird. He knows how to mend a tyre; but it is a dull job, and when he has done it once, he prefers to employ the nearest cycle shop as his deputy, while he strolls up the street to invest in some fags or picture postcards. He knows how to grind a valve, doncherknow, but when he's been sitting on the beastly jigger all day a feller gets rather sick of it, and—why, here's a garage still open! Any fool can scrape the dirt off a machine, but one only carries a single suit on tour, and it would be a pity to spoil it; so he tells the ostler to polish it up a bit before morning. In the morning, honest Joe of the stable puts on a coaxing expression, and says: "There ain't just a few nicks abaht these 'ere blessed motor sisickles: took me two mortial howers, s'welp me, to get it like a new pin!" Wiggins looks a thought rueful, but realises that he must rise to the occasion, and bang goes another half-crown.

Temptation to Buy Superfluous Accessories.

Again, at one of the places where Wiggins stops to take in petrol there is a tempting display of the latest accessories. Wiggins feels a trifle ashamed of his perfumed oilies as he surveys the neatly-cut fawn gaiters with shaped calves ("14s. 6d., sir—thank you!"), and as he eyes the tool tray enviously, the astute salesman unloads a patent ratchet spanner, and a positively inspired belt-drill and cutter (which before evening has worn a huge hole in the unfortunate Wiggins's pocket, and also banged all the cuticle off his slender hip). Such is the progress of the amiable and thoughtless Wiggins along the primrose path of the unpractical motor cyclist. *Moral No. 3:* If you wish to motor cycle with economy, do all your own repairs and adjustments, and remember that clothes and accessories are not of such vital importance as to keep your jigger going.

So my advice to the would-be motor cyclist who desires to exhaust the thrilling joys of our fine hobby on 3½d. a day, and still to save enough to furnish a bijou villa for Belinda before the 1913 T.T., is fairly simple.

Making Up One's Mind.

He must first decide whether motor cycling is to be a substitute for three or four modest hobbies,

A perfect saddle service is the first essential to a successful Tour—

The luggage you leave at home will never minister to your convenience—

Touring Talks

for, nothing will weary you more rapidly than the saddle of inferiority. On the other hand the

BROOKS

will make the longest ride—the roughest road—vibrationless!

It will ensure your perfect comfort under all conditions, and—

With it fitted you will reel off mile on mile, and, at the journey's end, feel fit to cover many more.

Below we illustrate the latest model—

It is the B170—the seat part of which consists of a steel base, carefully moulded on anatomical lines, comfortably cushioned and covered with substantial leather—

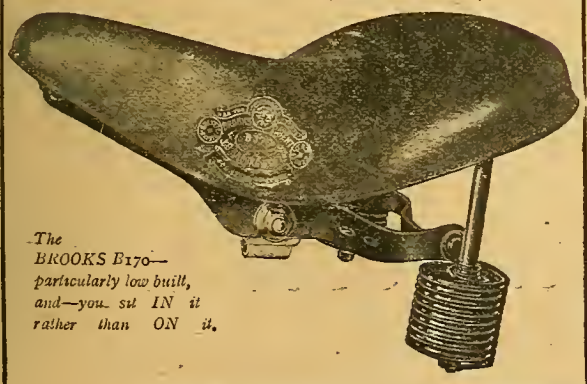
And test will prove its absolute superiority. Others are illustrated and described in detail in the Motor Cyclist's edition of the BROOKS BOOK, and—

That is free!

J. B. BROOKS & Co., Ltd.,
49, Criterion Works, Birmingham.

Note that a full range of the BROOKS Saddles may be seen at our

LONDON SHOWROOMS:
11, Grape Street, Shaftesbury Avenue, W.C.
(Oxford Street end.)



The BROOKS B170—particularly low built, and—you sit IN it rather than ON it.

Hence, leave nothing to chance—let your equipment be complete, and carefully consider the merits of the bags that

BROOKS

make.

Individually these are perfect receptacles for the articles they are designed to carry—

Collectively they form an ideal luggage-carrying equipment.

There are bags for every purpose and every one of them is so designed as to make waste of space impossible.

Here we illustrate B9650—made of the finest leatheroid, with removable inside case—fitted with special dust-excluding arrangement and attached to the carrier by means of steel clips.

And the many other models you will find in the BROOKS BOOK (Motor Cyclist's edition).

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B9650 Reg. No. 538,203.

Gold Medals

for

Rover riders

In the M.C.C. London to Land's End and back Trial for the Jarrott Cup, Mr. Harold Karslake successfully completed the 560 miles of hilly roads at the scheduled 20 m.p.h.

Touring Model - £55:5:0

Speed Model £49:0:0

The Rover Co., Ltd., Coventry.

How to Cheapen Running Expenses.—

which at present provide him with recreation, or whether he can afford to indulge in it as an extra, and retain all the amiable outlets for expenditure which now grip him from 8 p.m. to 11 p.m. six days a week. He must next consider whether he can afford to expend more than £5 a week on his annual holiday; if he cannot, he must surrender the idea of a round-the-coast tour, or else scheme the route out very shrewdly, and cadge beds from wealthy aunts. He must make an invariable rule of eschewing garages except on those sad occasions when the best made piston shivers into shapeless fragments. Professional puncture repairs are the mark of the gilded youth or the early bankrupt

The Real Enthusiast.

He must finally remember that it is more imposing to ride up Birdlip in oilies with a prehistoric gas lamp, a small tool bag containing two rusty cycle wrenches, and a phthisical hooter, than to push up Sutton with a machine which bristles with nickel-plated accessories, and boasts a picturesque knot of expensive overalls tied round the handle-bars.

In fact, the wisdom of the sages records that the expenses into which a motor bicycle forces us total an annual sum at which the tip-expecting gamekeeper on a Scotch grouse moor would wrinkle his freckled nose heavenward, but that the outlay into which a motor bicycle can tempt a thoughtless youth with a 1 in 17 forehead would equip a Dreadnought.

AN 8 h.p. GORDON CYCLECAR.

AFTER many months of hard testing, Mr. Gordon Armstrong, of the East Riding Garage and Engineering Works, Beverley, East Yorkshire, has perfected the Gordon cyclecar (which we first illustrated about a year ago) with a patent variable gear and differential. Great improvements have been effected on the latest model, which is far superior to the first one.

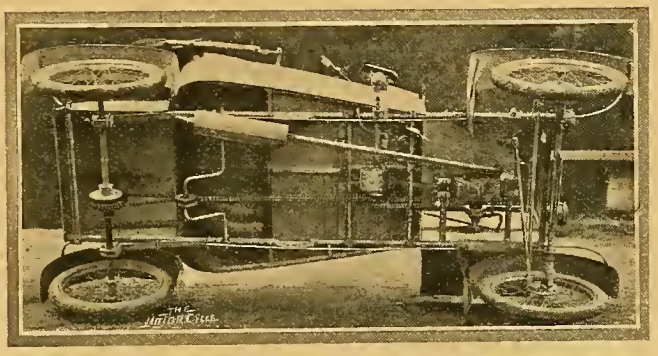
The engine, an 8 h.p. J.A.P., is air cooled by a very powerful fan, belt-driven from the outside of the clutch; the latter is of the multi-plate type.

Mr. Armstrong having found that belt drive is not suitable for such heavy work, has changed the transmission from a variable gear and belt drive to a two speed, or three speed, and reverse gear box with chain drive. The tension of the long chain from gear box to rear axle is sustained at the correct adjustment by means of a jockey pulley carried on a cranked arm, which is clearly discernible in the first illustration.

The chassis and body framework is built entirely of steel tubing. The seat is slung from the top tube of the body frame to the cross tube, and is upholstered like an ordinary car body.

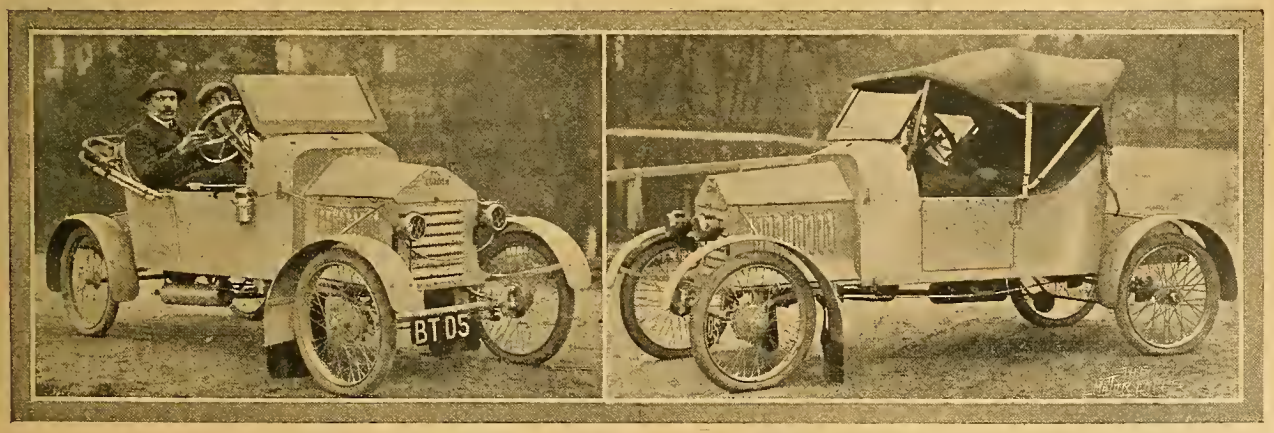
The panels are all aluminium screwed to the tubes; this system saves a great deal of weight, the complete car coming out at under 5 cwts. This we can quite believe, as Mr. Armstrong easily turned the car on its side to enable a photograph to be taken.

The engine is started from the side, and the second pull of the handle was sufficient to start it from cold without injecting petrol. During a short run, the car started very smoothly with the plate clutch, and was soon in top gear, climbing a fairly stiff hill without the least trouble at about 25 m.p.h.

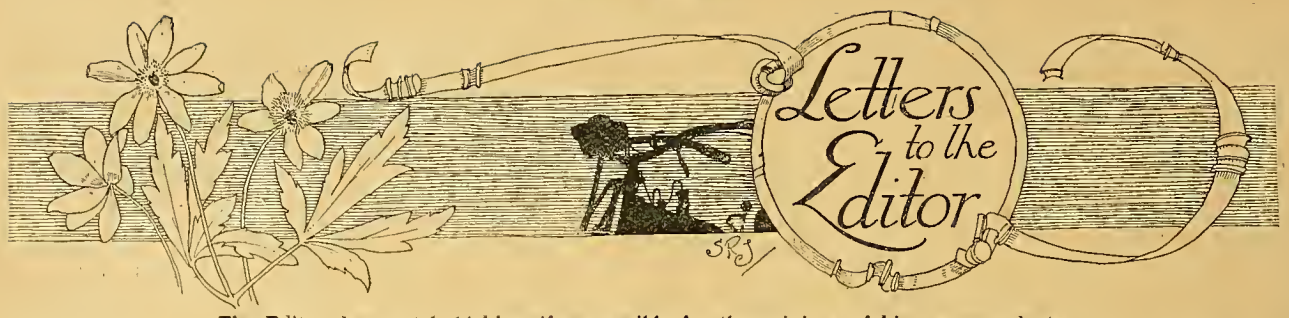


Under side view of the chassis of the Gordon cyclecar showing chain transmission throughout, silencer, engine position, etc.

The car is fast, quiet, and comfortable, proving that the springing, which is of the Lanchester type, is ideal for light work. The fans do their work most efficiently. The clean, simple design gives one the impression that there has been care and forethought in the production of this cyclecar.



Threequarter side views of the Gordon cyclecar shown with hood down and up.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street E.C., and should be accompanied by the writer's full name and address.

Three and Four-wheeled Cyclecars.

Sir,—Theory is not of much use in dealing with a practical question which must be decided by practical tests. Of course, anyone who has driven both a three-wheeler and a four-wheeler (and the best of each kind) is entitled to give his opinion—which will differ from the opinions of some other riders. But, for those who have not that practical experience, the following facts may be more useful than theories: (1.) A three-wheeler won very easily the only cyclecar race yet held, at a speed of about 59 m.p.h. The three-wheeler was, in fact, "first, and the rest nowhere." (2.) At this speed the three-wheeler was absolutely steady, whereas the only four-wheeler which approached it "snaked" badly and finally turned turtle. (3.) No four-wheeler has, as yet, got through an official long distance reliability trial, open to both three and four-wheelers, whereas a three-wheeler has been consistently successful in these trials. (4.) So far no three-wheeler with single front steering wheel has entered for any official trial. I may add that I was all in favour of four wheels until I was converted by experience. H. GEORGE MORGAN.

Proposed Hill-climb on Snaefell.

Sir,—Last year the Mersey Motor Club entertained the Dutch Club, and also accompanied them in the Isle of Man. Whilst there it was remarked what a pity it was that an event was not organised to entertain the visitors on the Saturday. In view of these facts, my committee instructed me to ascertain from the island authorities as to whether they would be willing to grant us permission so to cater for visitors, and this permission has now been granted. In the meantime, my committee applied to the A.C.U. for a permit for an open hill-climb, arranging that as soon as the permission was granted by the island authorities so soon would they notify the A.C.U. that the aforesaid permit was for Snaefell. My committee has no intention of interfering with the A.C.U. events or in any way robbing them of their just dues.

As I have not been able to summon my committee in order to ascertain its wishes, I cannot say more, except that personally I would be pleased to assist or act in co-operation with the A.C.U. if it would like to partner us in the concern, in a similar manner to the way in which it partnered my old club, the Newcastle and District M.C., at the first Sutton Bank hill-climb, of which I was hon. secretary. The event is being organised primarily for visitors, and the classes are so arranged not to cater unduly for T.T. riders; in fact, special prizes are being offered for novices.

In conclusion, this club has applied to the A.C.U. for re-affiliation. S. W. CARTY, Hon. Sec.

The A.C.U. Formula and Two-stroke Engines.

Sir,—Having followed keenly the correspondence regarding the A.C.U. formula as applied to two-stroke engines, I feel prompted to write in reply to your correspondent "A Believer in Four-stroke Efficiency," and for his enlightenment quote a few facts.

Firstly, that Scott riders quite understand and do not overlook the important fact that the A.C.U. formula is an "attempt" to compare the performances of machines on the point of efficiency. This is just our grumble, the "attempt," and what a miserable one it is.

Secondly, the handicap is not on petrol consumption, but on the type of engine. And I would here like to mention, for your correspondent's edification, that I know several Scotts doing eighty miles per gallon, which is not by any means extravagant, and necessary to handicap.

Lastly, the A.C.U. formula to your correspondent may not seem a great one, but probably he is looking on things with a jaundiced eye, and is not up against it like the Scott riders are.

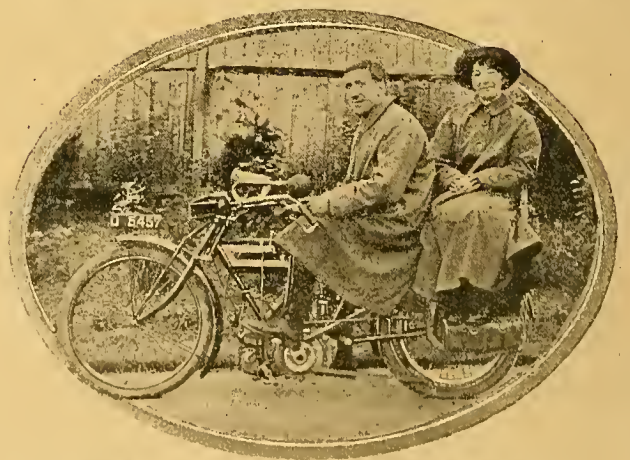
Now in answer to his last letter, where he compares the P. and M. and Scott sidecar performances, I should like to know if he possesses a P. and M. sidecar, as, if so, I would not mind taking him on for speed up any of his pet hills . . . .

Anyhow I think in fairness to a big number of the A.C.U. members, who are Scott riders, the handicap ought to be removed or modified to give us, at least, a sporting chance, and not put us up against 5-6 h.p. twins.

REKALB, Jun.

Pillion Seats.

Sir,—May I beg a little space in your excellent paper for a reply to the numerous critics of pillion riding? On my 1910-11 3½ h.p. fixed gear (5¼ to 1) Ivy-Precision, my wife and I (total weight, 22 stones) have ridden some 3,000 miles, including two tours—North Wales (800 miles) and Somerset and district (500 miles). Personally, I find the running steadier and no increased difficulty whatever in taking corners. I use the machine a great deal solo, and have taken friends numerous spins. The back wheel, stays, and, in fact, the whole machine, are apparently none the worse for the increased strain. The tyres (ordinary Dunlop studded) stand up to the work splendidly. My only trouble has been belts, but since fitting a Whittle that has disappeared.



Mr. and Mrs. Turner (Ivy-Precision), who favour the pillion seat.

My method of mounting is, after my wife has taken her seat, to start in the usual manner, and then vault on sideways, throwing the right leg over afterwards.

I can personally recommend this mode of passenger carrying as absolutely safe, provided machine is sound, passenger weighs no more than 10 stones, and one drives carefully and at a moderate pace. W. B. TURNER.

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2½" - 42/6 „

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Tube L136. 2¼" 8/3; 2½" 9/-.



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2" - 8/9 ea.	ALL	2" - 7/6 ea.
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⅜in. ..	1/5 per foot.	½in. ..	2/1 per foot.
¾in. ..	1/9 per foot.	1in. ..	2/4 per foot.

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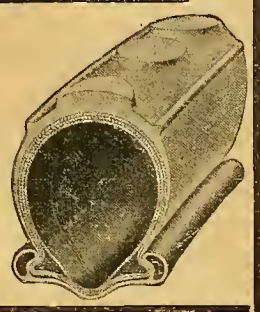
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Made in 24", 26", and 28".
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Suitable for 3½ to 5-6 b.p.



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Made in 24", 26", and 28".
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Lightweight B.

Made in 24", 26", and 28".
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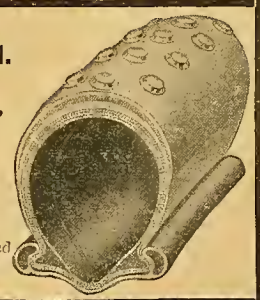
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Specially constructed studs, large base.



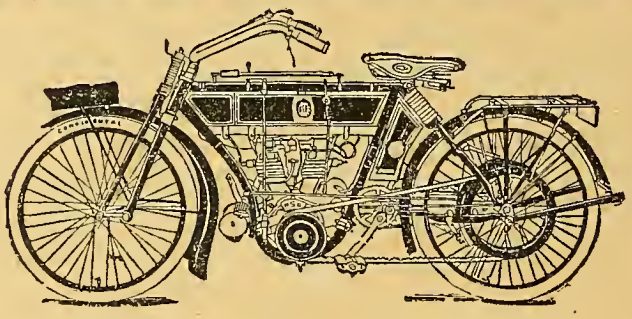
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1912 MODELS.

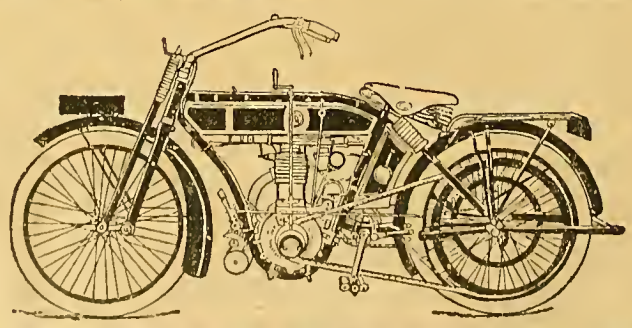
Single-cylinder	....	....	....	$2\frac{1}{2}$ h.p. and $3\frac{1}{2}$ h.p.
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The N.S.U. models are the moderns of the moderns, being fitted with all the latest improvements such as loop frame, rear spring, automatic carburetter, separate tanks of special design, handlebar control, two powerful brakes, Bosch ignition, low seating, under-geared pulley as standard. The famous N.S.U. two-speed gear and free engine fitted if required.

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SINGLE-CYL.



Dan Bradbury and his 4 h.p. 1912 Norton, a winner at Staxton Brow.

Private Owners and Trade Riders. Three Classes Suggested.

Sir,—For some time there has been some discussion with respect to the definition of a private owner as laid down by the Auto Cycle Union. We all know that many men who sign a declaration that they are not in any way assisted by the trade are actually so assisted in various ways, whilst there are many competition riders who would undoubtedly compete more were it not for the fact that under the very comprehensive rule regarding trade riders they are classed as such.

I would like to have the views of your readers through your columns on this matter, and would suggest for their consideration—and if there be sufficient interest taken in the matter—that the question be brought before the Council of the Auto Cycle Union, and that there be in future three classes.

(1.) Amateurs *bona fide* pure and simple, who do not receive assistance in kind or cash of any sort from the makers of motor cycles and accessories.

(2.) Riders who are not connected with the trade, but who may be riding for a trade firm; also competitors who are in some way connected with the trade, such, for instance, as being employed by firms having retail businesses or connected with the industry in the sale of accessories or fittings, but who do not ride for the manufacturing firms.

(3.) Riders who are openly employed by large firms for competition purposes.

I would suggest that the Auto Cycle Union Council should make every competitor sign a declaration form when applying for a licence, and it should be at the council's discretion whether a man be transferred from 1 to 2 or from 2 to 3, or *vice versa*. There should be no argument on the matter, for if the council were satisfied that a certain man who had signed the amateur form was going about too much in a way that was not reasonable to expect, he should be transferred to class 2. The hardship and trouble in these matters lie in the fact that clubs promoting open competitions generally charge double fees for trade entries. Manufacturing firms have no reason to grumble at this; they can afford to pay. Amateurs only pay half; this is all right, as they are only out for sport, but why should the middle-class be penalised? In the majority of cases they only ride for sport, but in some slight way are assisted by the manufacturers.

S. W. PHILLPOTT.

Another Exceptional Hill.

Sir,—I notice in your correspondence columns, under the heading of "Another Exceptional Hill," the climb from Langdale Valley to Little Langdale is recommended as a test for hill-climbing enthusiasts. There is no doubt about it being a test, and I doubt whether any motor cycle would climb it, however skilful the driver. I have seen an expensive motor car defeated before the real ascent had commenced. I have often wondered if it could be climbed.

There is another climb which it would be interesting to know if anyone had done, and that is between Wrynose Pass and Eskdale, Hard Knot Pass (to ascend either way up, from Eskdale or Wrynose Pass). Hard Knot Pass is between four and five miles from Little Langdale—towards Eskdale.

J.H.W.



STAXTON HILL-CLIMB. The curious position of the rider will be noted; he appears to be lying along the carrier and seat.

Brooklands Easter Meeting.

Sir,—On page 405 of last week's issue your remarks as to the handicapping in the two motor cycle races at Brooklands are somewhat at variance with the facts.

We would remind you that in the Short Motor Cycle Race Mr. G. E. Stanley was riding a 2½ h.p. Singer, with a bore and stroke of 69 × 80 mm. = 299 c.c.

With this machine he was given the same start as other well-known riders who were mounted on 3½ h.p. machines, 499 c.c. It reflects great credit on his riding in being able to obtain second place under these conditions.

In the second race, which he won easily, Mr. Stanley rode a 3½ h.p. 499 c.c. machine, and, of course, started from the same mark as other 3½ h.p. riders.

SINGER AND CO. (1909), LTD.
W. E. BULLOCK, Works Manager.

The Speed of Motor Cycles in Leamington. A Warning from the Chief Constable.

Sir,—I respectfully wish to bring to your notice the fact of motor cyclists riding at excessive and dangerous speeds through this borough. No doubt you are aware the roads in and about Leamington are wide, well laid, and offer every inducement for motorists' comfortable travelling.

In addition to this, the local police authorities have laid themselves out to induce motorists to visit this town, without fear of running into any specially laid traps (a practice which I consider totally unworthy of any police authority to recognise). Notwithstanding this, I am sorry to say that a great many motor cyclists who visit this town have no regard for the safety of other people, but go racing through some of our principal streets at speeds varying from 18 to 30 m.p.h. My Watch Committee have had the matter under consideration, and have been forced to the conclusion that the police must take more drastic action with a view of bringing some of the offenders before the justices. I do not know how far you can help me in this matter, but I should be glad if you could intimate through *The Motor Cycle* in a friendly way a caution to motor cyclists to exercise a little more care with regard to excessive speed when passing through this town, and to take this warning in the spirit in which it is given, and so obviate the necessity of any police proceedings.

T. T. EARNSHAW, Chief Constable.



The scene in the market place at Richmond (Yorks.) on the occasion of the annual meet of motor cyclists, which has always been well supported by North Country riders.

Cold Vulcanising.

Sir,—I was interested in your reply to a correspondent in a recent issue on "Cold Vulcanising."

I notice you recommend the "Ara" outfit, and can testify to its excellence for outer cover repairs, but, like your correspondent, I cannot get patches to stick on tubes, and can get no assistance from the makers, who simply tell me I am not following instructions. I follow them to the letter, but can still pull the patches off easily. A motor cycle tube does not seem suitable to the process, but I write this letter in the hope that some reader may have found a way of overcoming the difficulty. If the "Ara" process was as good for inner tubes as it is for burst covers, it would be a blessing. CLARENCE PONTING.

A copy of the above letter was submitted to Ara Ltd., who reply as follows:

Sir,—We beg to thank you for kindly forwarding to us a copy of your correspondent's letter, and we are pleased to give all the assistance we can to those readers who are using the "Ara" vulcanising process.

Your correspondent says he has a tube which he cannot repair by it, and, considering the thousands of "Ara" vulcanisers that have been sold, and the large number of testimonials we are receiving from motor owners who use the "Ara" vulcanising process for this work only, it is, to say the least, somewhat extraordinary.

We think, in view of what the letter says, one of the best possible means of testing the difficulty would be to send the inner tube on to us, and we will place the same in hand for repair free of charge.

It is a fact, however, with which you may be acquainted, that some rubber articles, inner tubes and outer covers, etc., cannot be repaired by any known process satisfactorily, but these cases are so rare that we shall be surprised to find in these days a firm manufacturing worthless rubbish of this kind, as, of course, the value to the consumer is quite as much represented by good repairing possibilities as other good points. ARA, LTD.

Consumption Comparisons.

Sir,—With reference to the correspondence on the above taking place in your columns, it has always appeared to me as a man engaged on fairly heavy engineering work, and as one with about ten years' actual experience in this line, that motor cycle designers, or the buying public, do not take efficiency into consideration when designing, or buying their machines.

It is a well-known fact that any engine, especially internal combustion ones, are extremely inefficient, working on light loads. After a riding experience with an old pattern 2¾ h.p. a.o.i.v. motor cycle, geared 4½ to 1, I am firmly convinced that carrying the extra weight and having a larger engine, running most of the time on a very light load, is not efficient by a very long way. With my "old crock," with the engine showing plain signs of wear and the compression doubtful, I can tow a person on a push bicycle at a speed exceeding the limit anywhere and up anything it is possible to ride a push bicycle up without very great exertion. Riding alone the difficulty is to find the engine something to do. Of course, I get stuck on very steep hills, but a two-speed gear would overcome that, therefore, why heavy machines with large engines running most of the time inefficiently? This, I think, is where the car wins, as most cars seem to have efficient change gear arrangements, which allow a smaller engine to be worked at a better load factor.

Referring to your correspondent who says the water-cooled engine takes up heat at the commencement of the stroke, part of which it gives up again as useful work at the end, or near the end, of the same stroke, is not clear to me. I am not "learned" in this, but, judging the effect of the heat at exhaust (sufficient in some cases to make the connections nearly red-hot), I rather think the taking up game would go on through the whole stroke. He must be thinking of steam engines; something of this sort takes place in those, I believe. Cannot motor cycle and car makers be induced to rate their engines in b.h.p., and give us the consumption per b.h.p. hour at full and part loads? M.A.P.

"BELT" RELIABILITY

If you have a doubt as to which is the Belt for "Reliability" the following Record will surely help to dispel it.

At the great M.C.C. LONDON-LAND'S END 550 miles Run on April 6th, 1912—one of the "classic" events of the season—

The JARROTT Cup was won by H. Karslake

riding a standard 3½ h.p. Rover Motor Cycle fitted

with a 'LYSO' BELT

winning premier place against 46 competitors.

As you are probably aware, this Race was run under the most adverse conditions—against half a gale of wind, dust, and parts in pouring rain and fog; various difficult hills with steep gradients, hairpin bends, right-angle turns, etc., and described by the Press as "the stiffest and most severe course."

At Holne Chase Hill, the most difficult part of the course, the scene of many spills, and on which 75% of the riders had to make two attempts to get up, Mr. Karslake made a clean ascent of the hill FIRST TIME—the Press description of his ascent being "a very good climb"—and at one point on the hill he had to ride around a competitor who was falling, on a gradient of 1 in 4!

The above facts but serve to again emphasise the "Reliability" of the "LYSO" Belt and mark its supreme efficiency as a dependable "power-transmitter."



For ordinary work, and extra-ordinary work—and particularly for machines with Sidecars—"LYSO" is the Belt you should use, always.

Obtainable of all Agents. Prices: Size ⅝in. 1/5; ¾in. 1/9; ⅞in. 2/1; 1in. 2/4; and 1¼in. 2/9 per foot.

LYCETT'S, "The Saddlery," Bromley Street, Birmingham.

R.H.S.

A SIDECAR TRIAL.

THE Coventry and Warwickshire Motor Club successfully carried out a novel trial for sidecar combinations only on Saturday last, for which sixteen entries were received. The start was from the outskirts of Coventry at 2.40 p.m., and competitors were despatched singly over the following route: Kenilworth, Leek Wootton, Warwick, Barford, Wellesbourne, Friz Hill, Kineton, to Edge Hill, which test gradient had to be ascended on the run. Competitors were then directed past the Round Tower, down Sunrising Hill, and, thanks to the assistance of the Rudge Cyclists' Corps, along narrow and tortuous lanes, *vid* Radway, to the foot of Edge Hill, this small circuit of about six miles having to be repeated five times. An involuntary stop put a competitor out of the running.

The event was divided into two classes: Class 1, for machines with engines up to 500 c.c.; and Class 2, for machines with engines over 500 c.c.

The mileage to Edge Hill was taken from the Contour Road Book, but it was afterwards found that the distance was not so long as stated. Consequently most of the competitors found themselves too early, and for five miles W. H. Wells, H. D. Teage, E. A. Gorton, and G. Smith crawled along on their low gears to the foot of Edge Hill. Despite this severe handicap the bigger machines easily reached the hill summit.

A special prize was offered for the highest ascent of Edge Hill on a 500 c.c. single-geared touring sidecar, and the possibilities of a sporting afternoon on Edge Hill brought several hundred spectators on cars and motor cycles to this well-known acclivity. It was hardly to be expected that a single-geared 3½ h.p. machine would reach the summit of the hill, although there were three who made the attempt, all on Triumphs. H. Holt stopped first, Frank Hulbert got much higher, but he was beaten by a private owner, Ambrose Elson, who got within about 200 yards of the top of the hill. Later in the day he made a clean ascent with a cool engine and gear of about 6½ to 1.

The necessity for passenger machine trials is proved by the fact that only five competitors made non-stop runs and survived the six ascents of Edge Hill, although the list would have been augmented by F. Pountney (Rudge-Multi), had he not unfortunately punctured in Warwick, and J. R. Haswell (two-speed Triumph), who went off the course. It is particularly unfortunate that these two should have suffered as they did, as they were by far the fastest in the 3½ h.p. class on Edge Hill, particularly Pountney, whose Rudge-Canoelet combination had a surprising turn of speed.

H. T. Lloyd, one of the Triumph Company's testers, had out for the first time a Trinmph with a new two-speed counter-shaft gear, which is of the epicyclic type. It is very neatly arranged and more compact than the last of this company's productions, which we illustrated about November last. The final drive by V belt is retained. Lloyd was put out of the running by a sooted plug.



Start of the Coventry and Warwickshire M.C. first sidecar trial last Saturday. In the foreground W. H. Wells (7 h.p. Indian sidecar) is seen leading off.

In Class 2 the bigger machines made light of Edge Hill, despite its length and 1 in 7 gradient. Geoffrey Smith (Enfield) and W. H. Wells (Indian) tied for first place, the former being adjudged the faster and the latter having the more silent machine. H. D. Teage (Clyno) climbed the hill very easily and silently on each of the six occasions, but was not so fast, which could also be said of C. T. Lloyd (6 h.p. Rex sidette). The complete results are given hereunder:

CLASS 1.

1. S. Wright (3½ h.p. 2-sp. Humber), non-stop.
   J. R. Haswell (3½ 2-sp. Triumph), ran off route, otherwise non-stop.
   F. Pountney (3½ Rudge Multi), puncture.
   H. T. Lloyd (3½ 2-sp. Triumph), stopped third round.
   Bert Yates (3½ 2-sp. Humber), stopped third round.

The undermentioned stopped at Edge Hill on the first round: Ambrose Elson (single-geared Triumph), H. Holt (single-geared Trinmph), W. J. Spittle (3-sp. Premier), F. Hulbert (single-geared Triumph), and A. Wright (Triumph, N.S.U. 2-sp.).

CLASS 2.

1. { Geoffrey Smith (6 h.p. 2-sp. Enfield), non-stop.
   { W. H. Wells (7 2-sp. Indian), non-stop.
   Henry D. Teage (5-6 2-sp. Clyno), non-stop.
   C. T. Lloyd (6 2-sp. Rex Sidette), non-stop.
   Edward A. Gorton (6 2-sp. Rex Sidette), stopped second round.

The judges were Messrs C. H. Elson, D. Elson, and H. M. Carter. Timekeeper, Mr. D. K. Hall.



C. T. Lloyd (6 h.p. Rex sidette) and H. D. Teage (5-6 h.p. Clyno sidecar) on the steepest portion of Edge Hill.

DUBLIN & DISTRICT M.C.C. RELIABILITY TRIAL.

With a whole gale of wind blowing and drenching showers falling, the club started its first reliability trial of the season on the 8th inst. from Donnybrook. The conditions were of the customary character, a scheduled pace of twenty miles per hour being fixed, with a number of open controls. Certain hills were also observed, and in addition there were a couple of secret controls. The course for the most part lay in the Co. Wicklow, and was a particularly trying one, including such hills as the Waterfall Hill on the south side of the Glencree Valley, Sally Gap, Drumgoff, and Auglavanagh. The distance was about 100 miles. Fortunately the day improved, and once out of Dublin the conditions were more favourable. The bad morning, however, materially reduced the field, and only twelve started. Result:

1, F. J. Walker (3½ Rudge); 2, P. J. Brady (3½ Rudge).

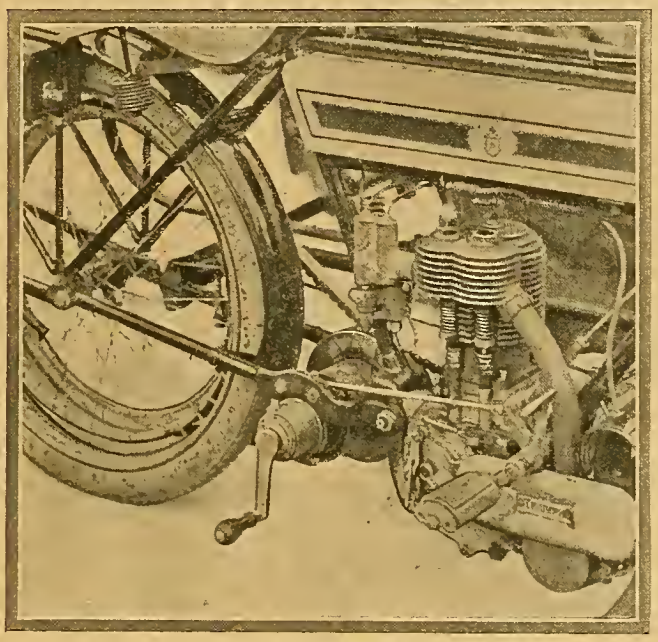
PROPOSED SCOTTISH MOTOR CYCLISTS' UNION.

FOR some years past there has been a movement in Scotland, having as its aim the foundation of a Scottish Union for motor cyclists. At present the pastime is controlled by the Scottish Cyclists' Union, a practically moribund body without funds and quite unable to assist the movement. The S.C.U. received its powers from the A.C.U., but the independents assert that the latter body had no standing in Scotland, and that in the Scottish Automobile Club is vested governing powers for all forms of motoring.

Last year informal conferences were held between the S.A.C. and representatives of several clubs, but not until this year was any great progress made. Early this year the chairmen of the Edinburgh and Glasgow clubs and of the Scottish A.C. formulated a scheme which the Scottish clubs are invited to discuss at a joint conference to be held at the Golden Lion Hotel, Stirling, on Saturday next, the 20th inst.

The Scottish A.C. are willing to give all the assistance in their power and to make a monetary grant towards initial expenses. They would also be prepared to grant through the proposed Union free legal defence, home and foreign touring facilities, copy of the handbook, hotel and hotel coupon arrangements, and use of their "guide" system, etc. For these benefits it is suggested that associated clubs should pay the Union a subscription of 2s. per member, or that individual members should pay 10s. 6d. per annum.

Such a scheme, with the resources of the Scottish A.C. behind it, should not, nor is it likely to, fail to meet with the approval of the clubs, which in the Union will have a body capable of looking after their interests and of effectively governing the pastime.



A NEW TRIUMPH GEAR.

The above two-speed countershaft gear, which is of the epicyclic type, was seen on the road for the first time in Saturday's Coventry and Warwickshire M.C. sidecar trial. Note the starting handle.

BIRMINGHAM CLUB'S ARDUOUS RIDE TO PERTH.

THE distance from Birmingham to Perth is 360 odd miles, which, in itself, constitutes a good ride, but when a gale of almost record severity is encountered for almost the whole distance dead in the riders' faces, then the trial becomes really severe.

Some competitors had difficulty in finding their way through Warrington, Wigan, and Preston, and it was also difficult to get petrol at that early hour in the morning.

Over Shap the roads were somewhat greasy, but there were no failures. From Carlisle the gale was too severe to be described; most of the competitors had many narrow escapes from being blown over. Crossing the bridge over Liddle Water, just after leaving Gretna Green, it was necessary to lean over at a considerable angle to maintain a balance against the wind!

From Beattock to Crawford the road winds through the mountains, and the flints blown up by the wind were particularly painful to one's face.

A peculiarity of the wind was that it came in gusts and quite upset the carburation, increasing the difficulty of driving tenfold. From Crawford the wind dropped slightly and competitors were able to make up lost time right into Perth.

Competitors were well looked after at the Royal George Hotel, Perth, and the Perth and District Club officials, who did the checking, also very kindly entertained the visitors and organised a walking party on the Sunday. The return journey was commenced at 3 a.m. on Monday. The wind was found to have changed round and was again in the competitors' faces; it commenced to rain at Stirling and continued to Kendal. The wind was stronger than ever between Crawford and Beattock and up Shap. At Kendal Duke and Brook were the two first arrivals, followed shortly by Newey and Sangster, all four of whom were just the three-quarters of an hour ahead of schedule time allowed. Ball, Pollock, and Pearson arrived just within the time limits. It appears that after leaving Perth troubles were many; Rowlandson had a seized small end on his connecting rod. Busby got lost near Stirling, as did Steeley and Egginton, who found themselves in Edinburgh. Peck had magneto trouble, and undertook a six mile walk into Carlisle. Seymour Smith was last seen in Lanark in trouble. H. D. Jones got lost, and came back *viâ* Edinburgh, but completed the journey by road to Birmingham, arriving about three-quarters of an hour late. Taylor and his machine were lifted bodily by the wind on Shap, and coming down to earth with a crash, the machine was damaged and had to be trained home. Blackwell had belt, magneto, and tyre trouble, his tyre being nearly cut in two at Warrington by a fallen slate. Yates was last seen at Kendal behind time. Mansell, whose Singer-Turner sidecar attracted much attention, ran out of petrol somewhere near Lanark.

From Kendal onward the roads were dry and the wind had dropped considerably. Duke (Zenith), Brook (water-cooled Precision), Newey and Sangster (Ariels), Ball (Triumph), and Arter (James) were the only competitors to arrive to schedule time.

Pollock and Pearson unfortunately had a smash when about 400 yards from the finish. It appears that Pearson's lamp was out and he ran into the back of Pollock's James; both riders came off, and Pearson sustained a cut head and broken collar bone. It is surmised that Pearson fell asleep on his machine.

Gold medals have been awarded to Messrs. Ball (Triumph), Brook (Precision), Duke (Zenith), Newey (Ariel), Pollock (James), and Sangster (Ariel) for completing the double journey.

Bronze medals have been awarded to the following: Blackwell, Busby, Egginton, H. D. Jones, Peck, Rowlandson, S. Smith, Steeley, Taylor, and B. Yates, for the single (outwards) journey.

The trial was very severe both for rider and machine. The chief trouble throughout was punctures. The only lady was Mrs. Yates in the sidecar of her husband's machine.

CURRENT CHAT

TIME TO LIGHT LAMPS.

April	18th	... ...	7.59 p.m.
,,	20th	... ...	8.2 ,,
,,	22nd	... ...	8.5 ,,
,,	24th	... ...	8.8 ,,

The Tourist Trophy Fund.

The fund to help defray the expenses of running the T.T. races now amounts to about £58.

Bristol Open Hill-climb.

For Saturday's open hill-climb of the new Bristol Motor Cycle Club, 120 entries have been received.

English-Dutch Trial.

Two further entries for the Dutch trial have come to hand, viz., C. Maurice Down (2¾ h.p. Enfield) in the private owners' lightweight section, and J. H. Slaughter (3½ h.p. L.M.C.) in the 500 c.c. trade class. Every class has filled, and some of the entries must be refused.

Easter Events.

It is worthy of record that last week's issue of *The Motor Cycle* was the only journal to include photographically illustrated reports of the following important holiday competitions:

(1.) M.C.C run to Land's End and back.
(2.) The Richmond meet of motor cyclists.
(3.) A.C.C.F. Circuit de Paris.
(4.) Brigsteer Brow hill-climb.
(5.) Brooklands Easter Monday racing.
(6.) Doncaster and District M.C.C. speed-judging competition.

THE JARROTT CUP WINNER.



Harold Karslake (3½ h.p. Rover) passing through Salisbury in the early hours *en route* for Land's End.

V. Olsson has now been removed from the Hounslow Hospital to a nursing home in London at 15, Welbeck Street, and is getting on well. He would like to thank the many M.C.C. riders and other friends who rendered assistance.

SPECIAL FEATURES.

How to Cheapen Running Expenses.
Oxford M.C.C. Open Hill-climb.
Liverpool A.C.C. Reliability Trial.
A Sidecar Trial.

Clashing of Dates.

The Birmingham M.C.C. applied for permission to hold an open passenger trial on May 18th as far back as December 30th last year, and on March 6th they obtained a promise of a permit from the A.C.U. It appears that the North-West London M.C.C. have also received a permit for a passenger trial from London to Coventry on the same day.

B.M.C.R.C. Meeting at Brooklands.

The second 1912 monthly meeting of the B.M.C.R.C. is down for Saturday next, and the entries are numerous. In the first 1912 time trial there are twenty-nine entries in the five classes. In the three-lap 500 c.c. scratch race there are nineteen entrants, five-lap cyclecar handicap eight, and in the one hour all-comers' race twenty-three.

A.C.U. Notes.

The time for practising for the T.T. races has been extended from 5 a.m. to 7 a.m. on the fourteen week days prior to the Junior T.T. on June 28th.

The re-run Spring one day trial will take place next Wednesday. The course, which is a secret one, will be about 150 miles in length, Oxford being the starting and finishing point.



COVENTRY & WARWICKSHIRE M.C. FIRST SIDECAR TRIAL. G. Smith (6 h.p. Enfield sidecar) churning the dust on Edge Hill, which gradient was ascended six times. G. Smith and W. H. Wells (7 h.p. Indian sidecar) tied for first place.



P. J. Brady (3½ h.p. Rudge) winner of the four miles handicap, and runner-up in the scratch race and the twenty miles handicap at Portmarnock last Saturday. (See Club News pages.)

More Records in the Air.

A. J. Moorhouse will shortly attempt the six hours and intermediate records at Brooklands on a 7 h.p. Indian.

Police Traps.

We have received information that a police trap is working between Cullompton (Devon) from the corner by the school to the end of the long straight stretch of road towards Wellington (Somerset).

Arms Hill Rendezvous.

After the Oxford M.C.C. hill-climb last Saturday several competitors and spectators journeyed the following day to Arms Hill, where attempts were made to get up. Riders of a Bradbury and a Scott were said to be successful in reaching the summit.

M.C.C. Team Trial.

A special permit has been granted to the Motor Cycling Club in connection with the team trial for *The Motor Cycle* fifty guinea challenge cup, on June 15th, which will render it unnecessary for competitors to hold an A.C.U. competition licence. A number of clubs have already notified their intention of competing.

Spanish Motor Cycle Race.

A Spaniard named Espinosa proved the winner of the motor cycle race between Bilbao and San Sebastian mentioned in the last issue. He was mounted on a Rudge Multi. Vernon Taylor, the only English competitor, says the riders rode into thick rain and fog when climbing the Pyrenees, and the race was a very hard one.

French Challenge to Motor Cyclists.

The reliability trial to be held by the Moto Cycle Club de France on May 12th is over a course which is said to have an excellent surface, and to be sufficiently hilly thoroughly to test the machines which will take part. Messrs. Pernette, Bac, and Guepperon have deposited £12 with the Club, and challenged any foreign team of three riders with engines between 350 and 500 c.c. Here is a chance for an English team to take up the glove. *The Motor Cycle* will forward letters addressed to the secretary of the M.C.C de France.

Single Figure Gradients.

As a result of our article on the above subject, we have been inundated with letters, some of which are of considerable interest, and will appear in these pages in due course. We should, however, like to point out that descriptions of bad hills (seldom given in contour books) are, though interesting, quite useless to us for publication unless particulars are given of the maximum gradient, length of hill, and total rise in feet.

Proposed Scottish Cyclists' Union.

A Scottish Motor Cyclists' Union is on the *tapis*. Representations have been made to the Scottish A.C., and every Scottish motor cycle club is advised to send a delegate or delegates to the Golden Lion Hotel, Stirling, on Saturday next, the 20th inst., when the preliminaries in connection with the formation of the proposed union will be discussed, and we hope the new organisation will meet with the success it deserves. Scottish motor cyclists have been rather backward in not forming an organisation of their own before now.

FUTURE EVENTS

April 20.—B.M.C.R.C. Race Meeting.
„ 20.—Bristol M.C.C. Open Hill-climb
„ 27.—Bristol B and M.C. Open Hill-climb
„ 27.—M.C.C. Open Silencer Trial.
May 4.—Coventry and Warwickshire M.C. Open Reliability Trial.
„ 4.—Mersey M.C. Open One-day Trial.
June 1.—Birmingham M.C.C. Open Hill-climb.

A special heading for competition announcements will be found at the end of the miscellaneous advertisement columns.

The M.C.C. London-Edinburgh and Back.

The route for the Whitsun run of the M.C.C. will be, after Newcastle-on-Tyne, the same as that used for the London-Edinburgh run of 1909, viz., *viâ* Alnwick, Berwick, Ayton, and Dunbar, but competitors will enter Edinburgh by a different road, so avoiding the unpleasant dusty ride from Levenhall. Several new trophies have been put up this year Mr. R. O. Clark offers a cup for sidecars, double journey; Mr. W. H. Wells another for sidecars, single journey; and Mr. S. H. Fry another for cyclecars, double journey. There will also be the usual single and return medals, the M.C.C. challenge cup, and a special cup for cars to be won outright, put up by Mr. C. Gordon Watson. Entry forms, rules, etc., will be posted to the members very shortly.

Secret Course Reliability Trial.

In connection with the Coventry and Warwickshire M.C. open reliability trial on May 4th, it has been decided to award a special prize for the best performance in Class A for lightweight motor cycles up to 350 c.c. in addition to the awards already enumerated Entries close on Monday next.

The Grand Prix of the A.C.C.F.

The Auto Cycle Club de France has decided to organise a 300 kilometres race on a specially guarded circuit of 20 to 25 kilometres in length. The actual course has not been chosen, but the date has been fixed for Sunday June 9th. The classes will be divided as follow:

Class 1.—250 c.c., weight 50 kilos, tyres 45 mm.

Class 2.—350 c.c. (singles), weight 55 kilos, tyres 45 mm.

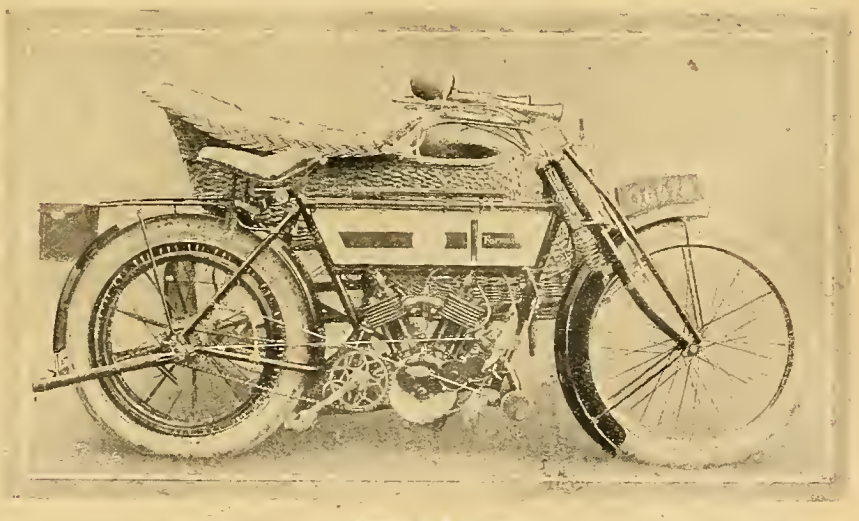
Class 3.—350 c.c. (twins), weight 55 kilos, tyres 45 mm

Class 4.—500 c.c (singles), weight 60 kilos, tyres 55 mm.

Class 4.—600 c.c. (twins), weight 60 kilos, tyres 55 mm.

Belgian Motor Cycle Trial.

The following route has been mapped by the Motor Club Liègois for the two days' trial, May 26th and 27th: First day—Liège, Aywaille, Lierneux, Laroche, Bastogne (lunch), Neuchateau, Habay-la-Neuve, Florenville, and Bouillon (dinner and sleep). Second day—Bouillon, Libin, Dinant, Philippeville (lunch), Yvoir, Ciney, Hamoir, Aywaille, and Liège. As will be seen, this route embraces the prettiest scenery and best roads of the Belgian Ardennes.



A NEW 5-6 H.P. TWIN.

The Forward machine illustrated is a larger replica of the 2¾ h.p. Forward which has already won it The bore and stroke are 72 x 82 mm. It has interchangeable m.o.v., two silencers, gear-driven magn three-speed hub gear.

M.C.C. Run to Land's End and Back.

Official Results.

WINNER OF THE JARROTT CUP.

	Error from schedule.
Harold Karslake (3½ Rover)	0m. 52s.

WINNER OF THE LIGHTWEIGHT PRIZE.

P. W. Moffat (2¾ Douglas)	1m. 2s.

WINNER OF THE SIDECAR PRIZE.

Frank Smith (Clyno and sc.)	2m. 27s.

GOLD MEDAL WINNERS.

P. Phillips (2¾ Douglas)	1m. 13s.
G. T. Gray (Rudge)	2m. 6s.
F. C. North (3½ Ariel)	2m. 16s.
H. Greaves (2¾ Enfield)	2m. 38s.
Hugh Gibson (3½ Bradbury and sc.) ...	2m. 41s.
R. Owen Wells (3½ Bradbury)	2m. 53s.
S. C. Tessier (8 Bat and sc.)	2m. 53s.
H. R. Whitmore (Rudge)	3m. 36s.
E. Gwynne (3½ Triumph)	3m. 49s.
A. J. Stevens (5 A.J.S. and sc.)	3m. 57s.
F. J. Watson (3½ Swift)	3m. 58s.
W. Pratt (3½ P. and M.)	4m. 8s.
Eli Clark (2¾ Douglas)	4m. 38s.
C. W. Meredith (Bradbury)	4m. 52s.
R. Charlesworth (3½ Zenith)	5m. 38s.
W. Cooper (Bradbury)	5m. 45s.
C. Bailey (Rudge)	6m. 4s.
S. C. Perryman (3½ Ariel)	8m. 47s.
A. J. Sproston (Rudge)	9m. 33s.
H. R. Slingo (5-6 Clyno and sc.)	9m. 58s.
P. H. Bentley (Triumph)	10m. 10s.
B. Alan Hill (7 Indian and sc.)	10m. 12s.
E. Pond (Rudge)	12m. 15s.
J. S. Holroyd (2½ Motosacoche)	14m. 7s.
S. Savage (Triumph)	14m. 35s.
F. W. V. Ehlvers (Triumph)	14m. 41s.

SILVER MEDAL WINNERS.

J. Milner (7 Indian)	7m. 49s.
J. R. Haswell (Triumph and sc.)	15m. 23s.
W. C. Hemy (Service-Precision)	15m. 33s.
H. Johnson (Triumph)	17m. 4s.
A. P. Maurice (3½ Premier)	18m. 23s.
W. Gibb (2¾ Douglas)	21m. 57s.
R. Croucher (3½ Kerry-Abingdon)	22m. 20s.
R. C. Davis (8 Chater-Lea and sc.) ...	23m. 8s.
J. Chater-Lea (8 Chater-Lea and sc.) ...	23m. 45s.
P. Grout (2¾ Douglas)	24m. 10s.
A. R. Abbott (3½ Bradbury)	28m. 2s.
R. Lord (6 Rex sidette)	37m. 29s.
E. B. Ware (8 Chater-Lea and sc.) ...	39m. 8s.
F. S. Proctor (7 Indian and sc.)	43m. 42s.
J. Stevens (2½ A.J.S.)	88m. 42s.

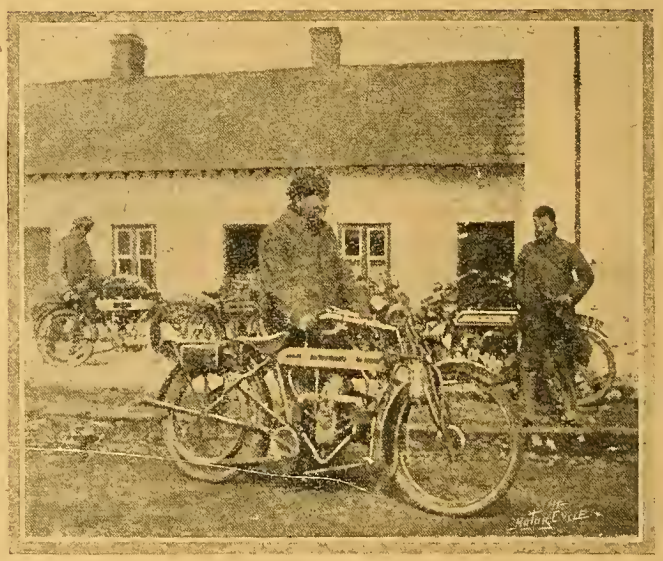
Disqualified for being more than fifteen minutes early.—N. O. Soresby (Rudge) and P. W. Tippett (3½ Humber).

J. Milner (Indian) only gets a silver medal, as he was over the time limit on the outward half.

The Penzance check on the outward trip was not taken into account, owing to the bull incident.

Sir R. K. Arbuthnot's 2m. 9s. error in 1910 was the previous best record.

P. Grout rode a 2¾ Douglas, as his Quadrant had not been delivered.



Open hill-climb at Knocksaughey, promoted by the Belfast and District M.C.C. J. Stewart (2¾ h.p. Douglas), who was second in the class for engines under 500 c.c., and best performance on a Lightweight. (See page 410.)

Results of the Circuit de Paris.

THE Auto Cycle Club of France is a young body, yet it organised the Circuit de Paris extremely well. The direction arrows were splendidly conspicuous, being four times the size of those used by the A.C.U. The name of the club was printed right way up on the top and upside down underneath, so that the arrows could be used to show either way. At any one of the two points where an arrow was missing the New Hudson sidecar occupants, who distributed leaflets in all directions, placed a little heap of these by the roadside to guide the other competitors. The A.C.C.F. seals were also different from ours. They were made of light metal, which was clamped over the wire by a special pair of pliers. They were not only one-tenth the weight of lead seals, but they were absolutely secure.

Besides the English machines it will be seen that the following well-known makes on the French side lost no marks: Class II.—N.S.U., New Hudson (entered by the Paris agents), and Motosacoche; Class III.—Peugeot, N.S.U. (⅗s. behind first), two Motosacoches, two Clément, and a Griffon. It may be thought that the trial was no test, merely a free and easy blind. Far from it. The awful *pavé* encountered at frequent intervals, the speed itself, and the long hills met with near Chateau-Thierry and Vernon made the trial by no means too easy. The way the majority of the machines stood up was very gratifying.

The positions of those who were not penalised were decided on the results of the timed hill-climb at Montauglaust. The figures after the first in each class indicate the number of seconds slower than the first.

CLASS II. (Full marks).

	Rider and machine.	c.c.	sec.
1.	Poulain (1 cyl. N.S.U.)	296 ...	0
2.	Rousseau (1 cyl. New Hudson) ...	292 ...	7
3.	Millaud (1 cyl. Motosacoche) ...	298 ...	46

CLASS III. (Full marks).

1.	Peau (2 cyl. Peugeot)	332 ...	0
2.	Paul (2 cyl. N.S.U.)	322 ...	⅗
3.	Lacroix (2 cyl. Peugeot)	332 ...	4⅘
4.	R. Bishop (2 cyl. Enfield)	343 ...	5⅘
5.	Deway (2 cyl. Clément)	343 ...	6
	G. L. Fletcher (2 cyl. Douglas) ...	340 ...	6
7.	B. Dacier (2 cyl. Clément)	345 ..	12⅕
8.	Brunet (Griffon)	— ...	20⅘
9.	Münch (Motosacoche)	— ...	30
10.	Bondini Motosacoche)	— ...	45⅘

CLASS IV. (Full marks).

1.	H. Lister Cooper (1 cyl. Triumph)	499 ..	0
2.	Pernette (1 cyl. Française)	482 ..	1⅕

AMATEUR CLASS (Full marks).

1.	W. G. McMinnies (1 cyl. Triumph)	499 ..	
2.	T. Tillman	— ..	
3.	G. Griffiths (1 cyl. Rudge) ...	499 ...	

AMATEUR CLASS (Penalised).

4.	E. M. P. Boileau (2 cyl. Douglas) ...	50 marks
5.	A. W. Heighton (Matchless)	57 ,,
6.	Tatin	76 ,,

The voiturettes Bedelia and Cohendet lost no marks.

OXFORD M.C.C. OPEN HILL-CLIMB.

AN EVENTFUL DAY'S SPORT.

THE venue of the Oxford Motor Cycling Club open hill-climb on Saturday last was thought by many to be the famous Kop Hill, particularly as competitors were requested to assemble at Princes Risborough. However, the Oxford M.C.C. officials had a surprise in store for the riders, in the shape of a test much superior to Kop in a hill locally known as Pink Hill. This is situate about threequarters of a mile from the hitherto famous Kop, both being on the Chiltern Range. Pink Hill is about three-quarters of a mile in length, and commences with a third of a mile of fairly easy gradient. At the end of this section there is an extremely sharp turn to the left on a gradient of 1 in 5 (surveyed for the Oxford M.C.C.); from this point to the summit the incline varies from 1 in 9 to 1 in 6. It was on a section of 1 in 9 that the stopping and restarting test was held; competitors on variably-geared machines had to stop between two lines thirty feet apart, and restart while seated in the saddle.

The weighing of the bicycles took place at the hill foot, under the superintendence of Mr. H. P. Beasley, and the sidecars and cyclecars were weighed at Risborough Station. At the scales only one machine was finally rejected, viz., G. Griffiths' 2 h.p. Alcyon, entered for the Junior T.T. class, as it had only one brake. One or two entrants in Class VII. up to 150 lbs. weight had to remove a few superfluous spares, etc., to bring their mounts within the prescribed limit. The record weight for a motor bicycle, which had been heavily laden with lead to come out well on the formula, was 290 lbs.—its real weight was about 100 lbs. less. Rupert May easily topped the list of riders' weights, but, notwithstanding his bulk and avoirdupois, he made two perfectly clean ascents, including the wicked corner.

Several Disqualifications.

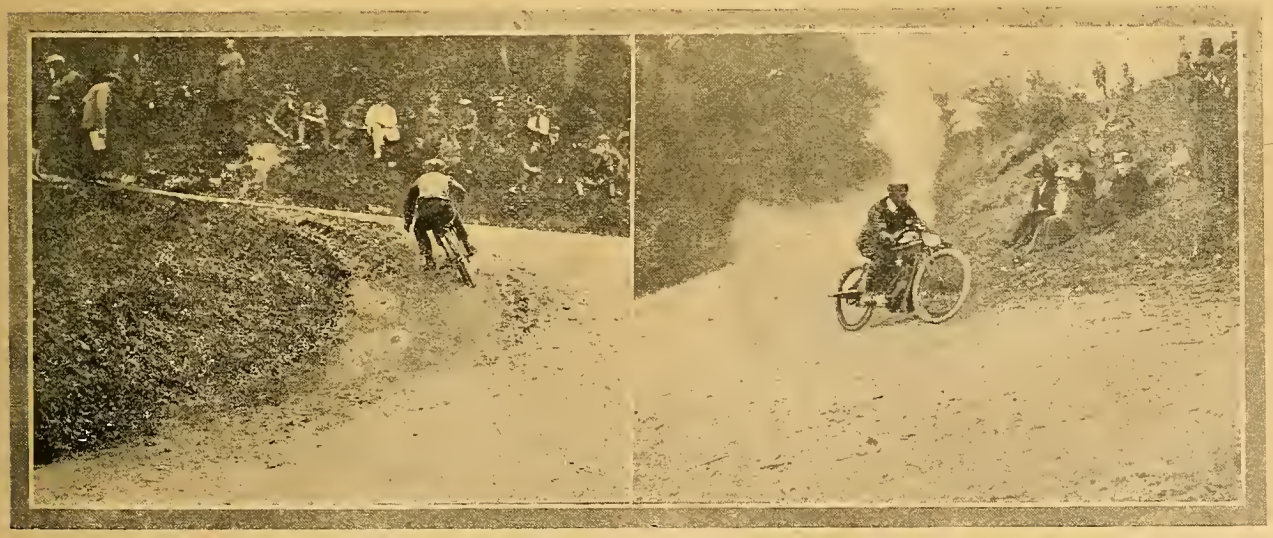
The club officials are to be congratulated on the good marshalling and the promptness with which the start was made. Sharp at 1 p.m. P. Weatherilt (Zenith) rode up the hill in the Junior T.T. class, and, with the aid of his Gradua gear, got safely round the corner, where, of course, most of the spectators had assembled, anticipating some excitement in the form of tumbles. There was little danger of serious falls, as the turning was so acute and on such a steep grade that every one cut out when approaching it, and the slightest error of judgment meant a tumble at comparatively slow speed. "Legging" was indulged in by some competitors, who would have failed had they not used this method of assisting their engines to pick up after the corner was passed. However, the officials ruled that putting out one foot to save a spill was permissible, but obvious "legging" was not, and they disqualified several who would otherwise have been well placed.



Scene at the starting line.

Of the Junior T.T. riders, Ayres (Singer) rode in place of G. E. Stanley. The latter told us he took exception to the selection of a hill with such a bad corner for a hill-climbing contest, and preferred to stand down. W. W. Douglas (Douglas) made a very fine ascent, changing down for the corner and up again as soon as he got round. There were two or three failures and a dead heat between Weatherilt and Newman (Ivy-Precision).

The sidecars were expected to provide some excitement, as the turning was a left-hand one and towards the sidecar. F. W. Barnes (6 Zenith) was first up, the wrench at the corner causing the driving tyre to leave the rim. Barnes went on unconcernedly on the rim, and in a later try made fastest time. The spectators raised a cheer when H. G. Dixon and his passenger in the New Hudson took the corner, the passenger assuming a position that can best be compared with the outrigger of a skiff. The sidecar wheel



Two aspects of the left-hand bend of Pink Hill, Princes Risborough. The riders are R. Holloway (left) and A. J. Moorhouse (right).



F. C. North (3½ h.p. three-speed Ariel) awaiting the signal to restart in the variable gear class.

of A. James's Clyno just lifted, but luckily the machine righted itself immediately.

The T.T. class for machines up to 500 c.c. proved as popular as ever; there were 25 entries, and 20 rode. The severity of the corner will be evident when we point out that two of the most skilful trade riders fell, and others only just grazed round.

Everyone appeared greatly interested in the cyclecars—two G.W.K.'s and a Morgan. The former looked very neat and workmanlike, and the one entered by J. T. Wood carried a by no means lightweight passenger. The speed capabilities of the Morgan are so well known that it will be no surprise to hear that it was the fastest in its class.

The principal awards in the single-geared tourist single-cylinder class were on formula, there being only one time prize, which was won by H. C. Newman in the fast time of 56⅘s. Newman and his Precision engined Ivy were thus responsible for two firsts on time. S. Crawley (Triumph) was a good second, being only two seconds slower: four fell at the corner, including one or two who had previously got round in other classes.

Three-speeders Score.

In the variably-geared class all but one succeeded in the stopping and restarting test, and this was, to our mind, most instructive. Each competitor was kept 30 seconds between the lines, which is indeed a good test, but rather long. Three classes followed this event; touring twins, touring machines up to 150 lbs., and any single or twin up to 1,000 c.c.

Of the touring twins three Enfields were first, second, and third on time, ridden by Greaves, Colver, and Viggers. Riddell (Blumfield) would have been second, but was disqualified for "legging." Alan Hill couldn't quite get round the corner on the big Indian, but he had a good try.

Miss Hind was the only lady competitor, and she very pluckily brought out her 6 h.p. Rex, to meet with failure at the corner, which was the Waterloo of several in the all comers' class. Even the redoubtable Barnes came down, Griffiths' Alcyon caught fire at the carburetter after he had fallen, G. F. Cooper picked up his Triumph with the engine running, and as the rear wheel touched the ground away went the machine, and again it fell. A. Moorhouse (7 h.p. Indian) made the fastest time of the day—53⅗s.—but he was disqualified, and this let up E. W. Cheshire (Triumph) into first place on time; incidentally, this was the fastest single-cylinder time of the day.

The formula used was Professor Callender's well-known one, adopted by the A.C.U., and Mr. A. Sharp, who, with Mr. Brooker, acted as judge, was responsible for the calculations. Messrs. W. A. Matthews (hon. sec.), F. C. Barton (trials hon. sec.), and a host of willing helpers worked hard and were rewarded by a successful and eventful meeting. The timekeepers were Messrs. F. T. Bidlake and F. Straight.

Results on Time.

The following are the official results on time. Those marked * were disqualified for assisting the machine with their feet at the corner:

Class I.—Junior T.T. up to 350 c.c.

		M.	S.
1.	W. W. Douglas (2¾ Douglas)	1	4⅖
2.	P. Weatherilt (2¾ Zenith)	1	4⅗
	H. C. Newman (2½ Ivy Precision) ...	1	4⅗
4.	H. Berwick (2¾ New Hudson)	1	9
5.	A. G. Fenn (2¾ Humber)	1	13
	*H. G. Dixon (2¾ New Hudson)	1	9⅗

Class IX.—Touring sidecars up to 1,000 c.c.

1.	F. W. Barnes (6 Zenith, Gradua gear) ...	1	8⅕
2.	H. G. Dixon (3½ New Hudson, Armstrong gear)	1	23⅖
3.	R. C. Davis (8 Chater-Lea, Chater gear)	1	35⅖

Class II.—T.T. machines up to 500 c.c.

1.	H. G. Dixon (3½ New Hudson)		59
2.	W. F. Newsome (3½ Triumph)	1	1⅕
3.	E. V. Pratt (3½ Ivy Precision)	1	1⅘
4.	P. Weatherilt (3½ Zenith)	1	6
	*R. Holloway (3½ Premier)		59
	*S. D. Timson (3½ Rudge)	1	5⅗

Class X.—Touring cyclecars up to 1,000 c.c.

1.	H. F. S. Morgan (8 Morgan)	1	37⅘
2.	J. T. Wood (8 G.W.K.)	1	45⅕
3.	C. M. Keiller (8 G.W.K.)	1	52⅗

Class III.—Single-geared touring single-cylinders.

1.	H. C. Newman (3½ Ivy Precision) ...		56⅘
2.	S. Crawley (3½ Triumph)		58⅘
3.	J. W. Tolladay (3½ Triumph)	1	0
4.	J. H. Pountney (3½ Rover)	1	3⅖
5.	S. R. Cooke (3½ Rudge)	1	5⅖
6.	J. Cocker (2½ Singer)	1	6⅖

Class V.—Variably-geared touring single-cylinders.

1.	F. C. North (3½ Ariel, Armstrong gear)	1	47
2.	H. Berwick (3½ New Hudson, Armstrong gear)	1	47⅗
3.	P. Weatherilt (3½ Zenith, Gradua gear)	1	48⅕
4.	F. W. Barnes (2¾ Zenith, Gradua gear)	1	56
5.	N. A. Ayres (4 Singer, Singer gear) ...	2	0⅕

Class IV.—Single-geared touring twin-cylinders.

1.	H. Greaves (2¾ Enfield)	1	7⅘
2.	H. V. Colver (2¾ Enfield)	1	16⅖
3.	R. Viggers (2¾ Enfield)		
	*H. Riddell (4-5 Blumfield)	1	8



W. A. Dait (Bradbury) scatters the spectators by running into the bank in the variable gear class.

Oxford M.C.C. Open Hill-climb.—

CLASS VII.—Standard touring machines up to 150 lbs.

		M.	S.
1.	H. C. Newman (2½ Ivy-Precision) ...	1	2 2/5
2.	J. Cocker (2½ Singer)	1	5 4/5
3.	H. Greaves (2¾ Enfield)	1	7
4.	H. V. Colver (2¾ Enfield)	1	12 3/5
5.	G. Bell (2¾ New Hudson)	1	17 4/5
6.	R. Viggers (2¾ Enfield)	1	18 3/5

CLASS VIII.—Any single or twin up to 1,000 c.c.

1.	E. W. Cheshire (3½ Triumph)		56 2/5
2.	H. S. Askew (5 Bat)		58 4/5
3.	R. Holloway (3½ Premier)	1	0 4/5
4.	S. R. Cooke (3½ Rudge)	1	1 4/5
5.	Hal Hill (5 Bat)	1	2 1/5
6.	P. Weatherilt (2¾ Zenith)	1	3 2/5
	*A. Moorhouse (7 Indian)		53 3/5
	*W. F. Newsome (3½ Triumph)		69 2/5

Formula Results.

CLASS IX.—Sidecars up to 1,000 c.c.

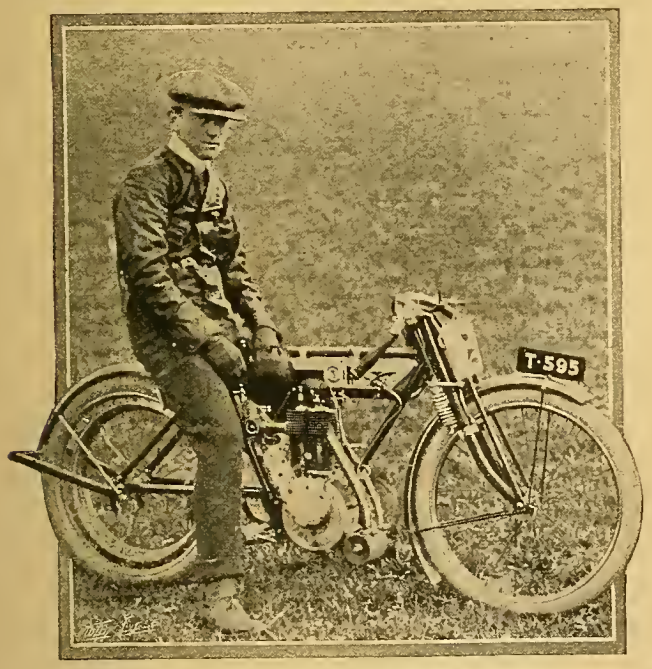
		Fig. of Merit.	Award.
1.	H. Graham Dixon (3½ New-Hudson)	69	Gold medal
2.	F. W. Barnes (8 Zenith)	106	
3.	A. James (5-6 Clyno)	108	

CLASS X.—Cyclecars.

1.	C. M. Keiller (8 G.W.K.)	98	Gold medal
2.	J. T. Wood (8 G.W.K.)	102	
3.	H. F. S. Morgan (8 Morgan) ...		

CLASS III.—Single-geared Touring Single-cylinders.

1.	J. Cocker (2½ Singer)	67	Gold medal
2.	Rupert May (3½ Triumph)	82	Silver medal
3.	H. C. Newman (3½ Ivy Precision) ...	84	Bronze medal



R. Holloway (3½ h.p. T.T. Premier), who tied with H. G. Dixon on time in Class II., but was disqualified.

CLASS IV.—Single-geared Touring Twin-cylinders.

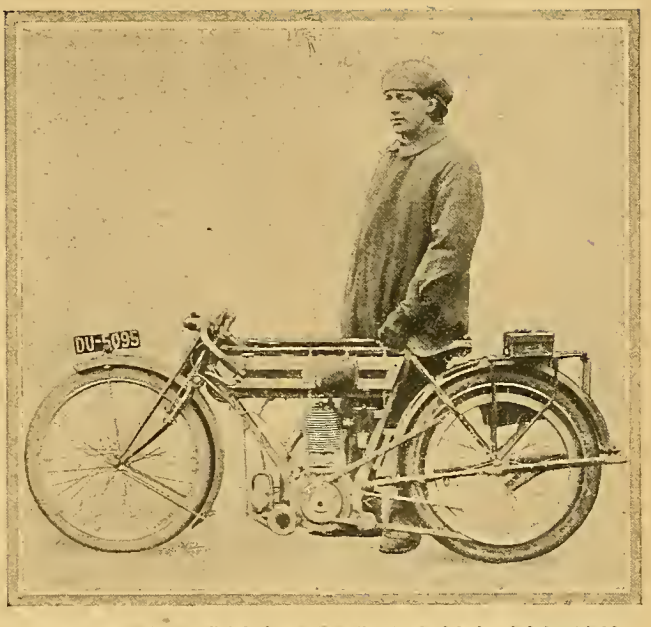
1.	H. Greaves (2¾ Enfield)	86	Gold medal
2.	H. V. Colver (2¾ Enfield)	90	
3.	R. Viggers (2¾ Enfield)	101	

CLASS V.—Variably-geared Touring Single-cylinders.

1.	F. W. Barnes (2¾ Zenith)	102	Gold medal
2.	J. Cocker (2½ Singer)	123	Silver medal
3.	F. C. North (3½ Ariel)	148	

CLASS VII.—Touring Machines up to 150 lbs. weight.

1.	J. Cocker (2½ Singer)	66	Gold medal
2.	R. Holloway (2½ Premier)	70	Silver medal
3.	H. G. Hill (2½ Calcott)	71	



A new racing frame, slightly longer than the standard design, is being tried by the Triumph Co., and those who have ridden it pronounce it a great improvement E. W. Cheshire, the rider in the illustration, used it at Pink Hill.

CLASS VIII.—Any Single or Twin up to 1,000.

1.	P. Weatherilt (2¾ Zenith)	59	Gold medal
2.	H. G. Dixon (2¾ New-Hudson) / H. Berwick (2¾ New-Hudson)	64	Silver medal / Bronze medal

A.C.U. ONE-DAY TRIAL.

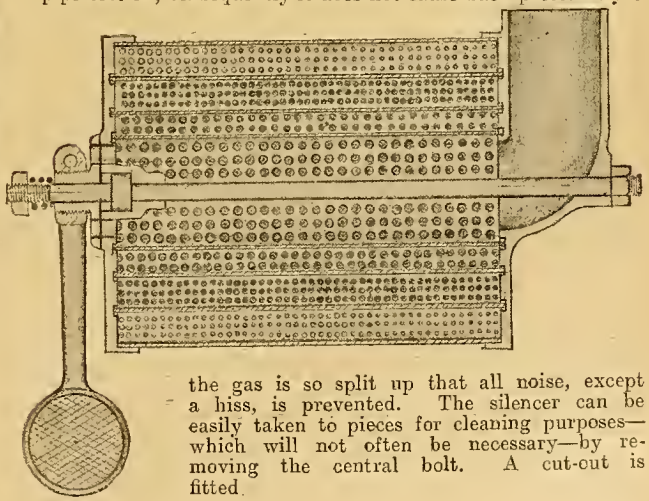
The following entries have been received for the Day Trial :

F. A. McNab (3½ Trump)
J. Slaughter (3½ L.M.C.)
R. R. Rothwell (4 Scott)
R. Mundy (Singer)
W. E. Rootes (3½ Singer)
F. Smith (Clyno sc.)
R. E. Guest (8 Matchless sc.)
J. H. Kerr (3½ N.S.U.)
H. A. Collier 8 Matchless sc.)
S. T. Tessier (8 Bat sc.)
J. Chater-Lea (8 Chater sc.)
P. W. Bischoff
F. Dover (3½ Premier)
F. W. Applebee (2¾ Centaur)
W. E. Cook (3½ A.S.L.)

Late entries will be accepted up to Friday (to-morrow).

NEW BINKS SILENCER.

We illustrate herewith the latest pattern silencer from the Phœnix Works, Eccles. It consists of concentric cylinders drilled with a large number of holes, the holes being smaller in the outer cylinders, but more numerous. The total area of these small holes is much greater than the area of the exhaust pipe section, consequently it does not cause back pressure, yet



the gas is so split up that all noise, except a hiss, is prevented. The silencer can be easily taken to pieces for cleaning purposes—which will not often be necessary—by removing the central bolt. A cut-out is fitted.

Liverpool Reliability Trial in North Wales.



At the start of the Liverpool A.C.C. open trial. Mrs. and Miss Baxter in the foreground.

THE Liverpool A.C.C. open non-stop reliability trial proved an important event, as some sixty competitors turned out. A start was made from Hamilton Square, Birkenhead, at 9 a.m. The riders went off smartly in pairs; several well-known men figured on the card, consequently a large crowd watched the proceedings with interest. Few made non-stop runs, though fifty-three survived the course. The gold medal winners were:

F. G. Edmond (3½ Humber)
*F. Rees (3½ Rudge)
J. C. Smyth (6 Matchless)
*F. Dover (3½ Premier)
C. T. Newsome (3½ Rover)
D. H. Noble (3½ Rover)
J. Haslam (6 Zenith)
N. H. Brown (7 Indian)
*G. A. Gregson (3½ Bradbury)
R. Mundy (3½ Singer)
F. Smith (5·6 Clyno)

The remaining competitors were:

*T. W. Harley (2¾ Douglas)
S. W. Phillpott (2¾ Humber)
W. Heaton (2½ A.J.S.)
*C. Hobbs (2¾ Humber)
*F. G. Pierson (2½ Levis)
F. C. Jones (2½ Singer)
*A. S. Lloyd (3½ Triumph)
C. L. Scott (3½ Rudge)
*W. de Jongh (3½ Rudge)
*L. Mogridge (3½ Mead-Precision)
*C. Murdoch (3½ Singer)
*F. W. Sixsmith (3¾ Scott)
*N. C. Schafer (3½ Humber)
E. F. Jenkins (3½ Macbeth)
*M. Glasgow (3½ Triumph)
H. C. Marston (3½ Rudge)
*P. P. Syrret (6 Matchless)
R. Lord (6 Rex)
*W. E. Coates (3½ Rudge)
*Harry Webb (3½ Premier)
A. J. Jenkins (3½ Macbeth)
*J. H. Fox (3½ Rudge)
*Miss N. Baxter (3½ Rex)
*G. Castognoli (3½ L.M.C.)
*T. Pollard (3½ Triumph)
W. Jones (3½ Rudge)
*V. Horsman (3½ Singer)
*Mrs. L. M. Baxter (3½ Rex)
*Jesse Baker (3¾ Scott)
*E. F. Baxter (6 Rex)
G. Wray (3½ Bradbury)
*H. E. Ashley (3½ L.M.C.)
*A. A. Jaffa (7 Indian)
*J. Lamb (3½ Bradbury)
R. Bielby (3½ Rover)
H. Gibson (3½ Bradbury)
*H. W. Coopland (5 A.J.S.)
*R. Holford Jones (3¾ Scott)
*E. Longden (8 Dot)
*C. Coddington (6 Enfield)

*Private owners.

Eric Longden had besides his passenger a fox terrier which went all through the trial. The course, part of which was covered in the last trial, was called severe, loose stones caused punctures and other troubles, and the riders were early in difficulties. R. Bielby, on a Rover, had a skid on the wet tram-lines leaving Eastham, and charged a hedge at Rossett, where the first hill of note was encountered. About fifty yards of this, near the top, was covered with loose stones from side to side, but there were only a couple of failures. From here to Cefn-y-Bedd and Llangollen nothing of interest was recorded.

On dropping down the valley, after a dust-up on the level for several miles, the riders were confronted with the worst hill of the day—Bwlch Hill, or the Horse Shoe. Cilcain proved easy to it; some exciting incidents were witnessed here. Hugh Gibson, on a chain driven two-speed Bradbury and sidecar, got halfway up when snap went the driving chain; the machine shot down the hill backwards and charged the bank. A badly bent sidecar axle was the extent of the damage; this was put fairly straight, and a return made to the bottom of the hill. Gibson then had another try which was successful. This was his only stop. Many riders gave up when they began jumping the awful watercourses or gullies which ran right across the road



Frank Smith (Clyno sidecar) climbing the Horseshoe Hill with ease. He is passing stranded competitors.



Some fortunate and unfortunate competitors on Rossett Hill.

at short intervals. Not more than six riders got to the top at the first attempt. Two-speed gears seemed to be of no avail. The riders didn't seem to care for the risk of a tumble down the side of the hill. Frank Smith, on the Clyno, did the best performance, and might have been sauntering along a level road without bustle or fearful swerves. G. Wray, on a Bradbury two-speed gear (his own design), glided over the hill in the same cool way as Frank Smith.

Cilcain Hill.

From this point Ruthin was the next destination, where a halt of one hour was called for lunch. Many riders were late, so they were despatched in any order when their hour's stay was up. Cilcain, the trick hill of the course, was next, and here a great crowd awaited the riders. Nearly all got up. J. Baker on a Scott went up without a swerve. N. C. Schafer on a two-speed 3½ h.p. Humber made a wonderful recovery; at the corner he hit the grass hump, wobbled badly, righted himself, opened his jammed throttle and sailed up. E. Coates (Rudge) went up without cutting out. Of the sidecars, Longden (Dot) stopped near the top, but his engine still kept going; H. W. Coopland (5 h.p. A.J.S.), very good; Frank Smith, (Clyno) very easy. Hugh Gibson (Bradbury) rushed to the bend all out, tore round the corner, pulling his right handle-bar with both hands, did a mighty skid, and was up and out of sight before people had got over thinking what a fearful smash there would be. Mrs. and Miss Baxter (3½ Rexes) went as far as they could without undue risks, and walked to the top with engines still running. F. C. Jones (2½ Singer), a very burly rider, had two tries and got up, paddling both feet on the ground in such a funny manner that everybody roared with laughter.

Newmarket Hill, a long, winding, narrow road with stretches of new stones, caused a few more failures, as, owing to the slow running of engines on account of the bad bends, many "konked" to a standstill through overheating. E. F. Baxter (6 Rex) spoiled his non-stop record by hitting the bank and rebounding on loose stones and falling off. W. Heaton (2½ A.J.S.) accidentally turned his petrol tap off, and consequently stopped.

The Final Stage.

From Newmarket Hill to the control at Northop (tea) was easy, and the last stage of thirty-two miles was very quickly over.

There were very few non-stops, and up to 7 p.m. many riders had not turned up. G. Wray (Bradbury), J. Baker (Scott), F. Smith (Clyno), Gregson (Bradbury) were some of the non-stoppists; the last named went through very well. The minimum speed was 15 m.p.h., no restriction otherwise. The weather was perfect, no wind, not much dust, and a very enjoyable time was spent by all the riders. The route was very well marked. Some fifty motor scouts were placed at the disposal of the club and lent great assistance in showing the riders the turns, especially in the narrow byways off the main roads.



Mrs. Baxter walks up Cilcain Hill with the engine running.

CLUB NEWS.

Blackburn and District M.C.C.

The members' hill-climb which was to have taken place recently was postponed owing to fog.

Hampstead C. and M.C.C.

The first run of the season will be held on Saturday next, the 20th inst., starting from headquarters, Jack Straw's Castle, at 4 p.m., for Dunstable, tea at the Saracen's Head. Motor cyclists are invited to attend.

Surrey M.C.C.

A members' hill-climb will be held on Wednesday, the 24th inst. Entries will be received up to Saturday, the 20th inst. Six classes will be arranged, each subject to a minimum of three entries.

Bristol B. and M.C.

The club will be holding an open hill-climb on the 27th inst. There will be nine events, including one for amateurs only. Entry forms can be obtained from Mr. H. Blocksidge, 14, Frederick Place, Clifton.

Walthamstow M.C.

A non-stop and speed-judging competition was held on the Cambridge Road on the 13th inst. Competitors had to ride at a set speed of 18 m.p.h., watches and speed indicators being barred. The results were as follows: 1st, G. West (5 h.p. A.C.), 21⅘s. slow; 2nd, A. G. Peppercorn (3½ h.p. Bradbury), 3m. 50⅘s. slow; 3rd, J. Kerr (3½ h.p. N.S.U.), 4m. 13s. fast.

Mersey M.C.

There will be a team trial on the 21st inst. *viâ* Mold, Ruthin, Bala (lunch), Corwen, Wrexham, and Chester. The committee trust that as many members as possible will turn up, as they wish to select from the competitors a team to represent the club on June 15th in the team trials to be held in the Midlands by the Motor Cycling Club for *The Motor Cycle* Challenge Cup.

Glasgow M.C.C.

The sudden death of Mr. W. M. Branston left the Glasgow Club without a secretary, but a new hon. sec. and treasurer has now been appointed in Mr. Geo. H. Cutbush, Blanefield, near Glasgow. The club's membership continues to increase at a very satisfactory rate, and a big entry is expected for the open spring hill-climb, which is to be held on May 4th on a new hill.

Cork and District M.C.C.

The Pohlmann Cup Competition, Killarney to Cork, *via* Kenmare and Glengarriff, took place on Easter Monday. The roads for the greater part of the journey were rough and twisty, and four mountain passes had to be climbed. A gale of wind made the competitors' task all the more difficult. The following tied for first place, without loss of marks: W. J. O'Mahony (7 h.p. Indian sc.), W. J. O'Callaghan (3½ h.p. Zenith sc.), B. H. Clibborn (3½ h.p. Triumph), P. A. Egan (3½ h.p. Bradbury), L. Dobbin (8 h.p. Matchless), and R. S. Russell (3½ h.p. Matchless). The tie is to be run off on a secret course without the aid of speedometers or watches.

South Birmingham M.C.C.

The first members' hill-climb will be held on the 20th inst. The membership now totals ninety-five.

Sutton Coldfield and Mid-Warwickshire A.C.

The opening run of the season took place on the 13th inst. The course took the competitors into the heart of Shakespeare's country, and the run concluded at the Abbey Hotel, Kenilworth. A speed-judging competition was arranged, and the results were as follows: 1, Seymour Smith (Humber car), gold medal; 2, A. Butterfield (Levis motor cycle), silver medal; 3, W. H. Sheldon (Regal Precision) and F. P. Mayell (T.T. Triumph) tied.

The open amateur hill-climb will be held on May 18th. Trade riders and those who have won first prizes in open hill-climbs will be excluded.

North Staffordshire M.C.C.

The route for the first reliability trial for the Ashton Cup lay through Newcastle, Stoke, Leek, Ashbourne, Uttoxeter, Stafford, Whitmore (where lunch was taken), Market Drayton, Audlem, Nantwich, Newcastle, back to Whitmore. The following finished: T. F. Rogers (8 h.p. Morgan) and W. E. Baines (3½ h.p. Triumph) tied for the first place, with 100 marks each; 3, J. A. Prendergast (3½ h.p. Rudge), 97½ marks; 4, G. Tagg (3½ h.p. Triumph), 95 marks; 5, T. W. Waring (3½ h.p. Triumph), 93½ marks; 6, H. W. Teeton (5 h.p. twin Kerry), 69 marks; 7, C. E. Fowke (5 h.p. A.J.S.), with passenger and sidecar, 61 marks.

Dublin and District M.C.C.

On Saturday last the Dublin and District Motor Cycle Club opened its speed season with a race meeting at the Velvet Strand, Portmarnock, a venue that, for the past nine years, has provided excellent testing ground for Irish motor cyclists. After a week of calm weather the going was in good order, and, with a practically still atmosphere, some fast times were put up during the afternoon. C. B. Franklin won both the scratch races, the distance in each instance being one mile. In the class for machines under 520 c.c. his time was 1m. 10⅘s on his 3½ h.p. single-cylinder Indian, and, riding the same machine in the unlimited class, he did 1m. 8⅘s. P. J. Brady, who was second to Franklin in the limited scratch race, won the four miles handicap from the scratch mark on his 3½ h.p. Rudge, and in the twenty miles he put up a fine fight against W. Curtis (Indian), both starting from the same mark and being divided by 8s. at the finish. Details:

Mile Scratch (under 520 c.c.)—1, C. B. Franklin (3½ h.p. Indian); 2, P. J. Brady (3½ h.p. Rudge); 3, W. Curtis (3½ h.p. Indian). Won easily in 1m. 10⅘s.

Mile Scratch (unlimited).—1, Franklin; 2, Curtis; 3, Brady. Winner's time, 1m. 8⅘s.

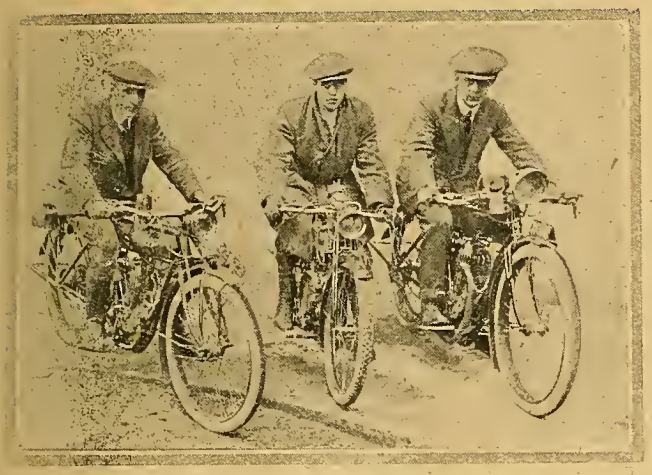
Four Miles Handicap.—1, P. J. Brady (3½ h.p. Rudge), 12s. start; 2, W. Beattie (3½ h.p. Rudge), 14s.; 3, W. Curtis (Indian), 12s.; 4, T. Greene (3½ h.p. Rudge), 15s. Time, 5m. 15⅘s.

Twenty Miles Handicap.—1, W. Curtis (Indian), 1m. 40s. start; 2, P. J. Brady (3½ h.p. Rudge), 1m. 40s.; 3, W. Beattie (3½ h.p. Rudge), 1m. 50s.; 4, J. Healy (3½ h.p. Rudge), 2m.; 5, C. B. Franklin (3½ h.p. Indian), scratch. Time, 21m. 25s.



Bradford-on-Avon and District M.C.C. members assembled outside their headquarters for the opening run.

A TRIO OF EDINBURGH MOTOR CYCLISTS AT BRIGSTEER BROW.



J. R. Alexander (5 h.p. Indian), J. Steele (2¾ h.p. two-speed T.T. Douglas), and A. H. Alexander (7 h.p. Indian). They all travelled by road to the hill-climb.

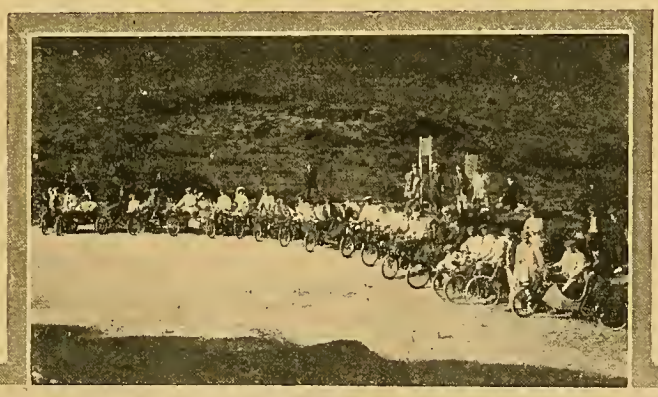
Cornwall M.C.C.

This club held its reliability run, Penzance-Exeter-Penzance, on the 30th ult. The outward journey was *via* Truro, Bodmin, Launceston, Tavistock, Two Bridges, and Moreton Hampstead. Out of twenty-six starters, twenty arrived well on time at the Bude Hotel, Exeter. The homeward route was Chudleigh, Ashburton, Holne Chase, Poundsgate, Two Bridges, Tavistock, Callington, Liskeard, Lostwithiel, Truro, and Penzance. Only ten completed the course before midnight, three arriving at 12.30. Results:

1 (silver cup). T. Rayner (8 Zenith-Gradua).
2 (gold medal). W. Tresidder (3½ Triumph).
3 (silver medal). F. G. Wheller (3½ Bradbury 2-sp.)
4 (bronze medal). R. W. Williamson (3½ T.T. Norton).
5 (bronze medal). H. Williamson (3½ P. and M.)
6 (bronze medal). M. Vacy Ash (3½ Triumph).

Great sympathy was expressed with Mr. Raine, the donor of the cup, who was riding a 3½ h.p. Scott, at his having met with an accident on the tramlines between Camborne and Redruth on the outward journey.

GATHERING OF SIDECARISTS AT THE FIRST HILL-CLIMB FOR SIDECARS HELD BY THE CAPE PENINSULA M.C.C.





Sidney Jones about to take a corner in racing fashion on his 3½ h.p. Triumph. He proved to be the winner.

G. Turner "all out" to the Nek. He secured second place on his 6 h.p. Enfield.

Merionethshire M.C.C.

At a meeting held at Bala on the 4th inst. it was decided to form a club with the above title.

Western District M.C. (London).

On the 21st inst. the postponed reliability trial for the N.S.U. gold medal takes place. The distance to be covered is 104 miles, lunch and control being at Oxford. The outward journey of forty-eight miles and the return trip of fifty-six miles are to be made without a stop. The winner will be he who makes non-stop runs and is nearest to the schedule time on arrival back. The start and finish of the trial is from Ealing Common at 10 a.m. and 5 p.m. respectively.

Lincolnshire A.C. (Motor Cycle Section).

Results of the members' hill-climb held Easter Monday afternoon at Station Hill, Leadenham, the course being a quarter of a mile in length and the surface in good condition.

			Position on formula.
CLASS I.—Up to 600 c.c.			
1.	J. H. Brookes (3½ Rudge) ...	20⅕s. ...	133
2.	J. E. Harston (4 Campion-Jap)	22⅖s. ...	145
3.	W. Deane (4 Zenith)	24s. ...	149
4.	W. J. S. Bament (3½ Rudge)	21⅘s. ...	150
5.	R. H. North (3½ Rudge) ...	24⅕s. ...	150
6.	A. B. Goold (3½ Rudge) ...	22⅕s. ...	152
CLASS II.—Over 600 c.c.			
1.	L. W. Forington (6 Bat-Jap)	18⅘s. ...	172
2.	A. W. Grocock (6 Zenith) ...	21s. ...	197

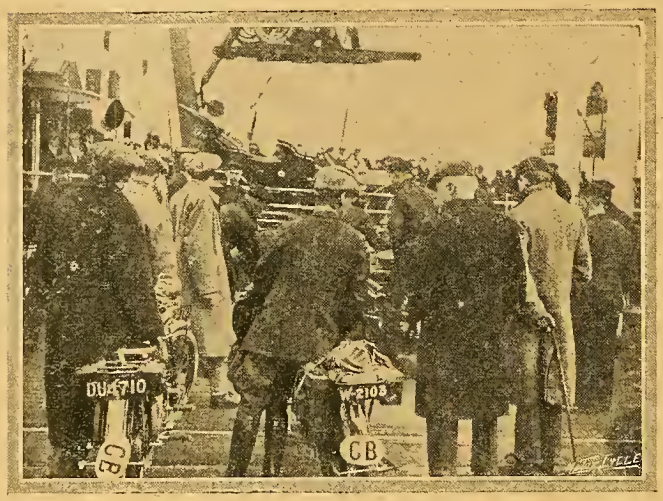
The Wright Challenge Vase for the best performance of the day was awarded to J. H. Brookes.

North-west London M.C.C.

A permit has been obtained from the A.C.U. for an open twelve hours' reliability trial—London, Coventry and back—by the above mentioned club, to take place on Saturday, May 18th, for passenger machines only. In connection with this competition there will also be an inter-club competition for teams of four passenger machines, the component members of which shall also be entrants for the open individual competition. The trial is being organised for the purpose of forming a contrast between the merits of the different cyclecars, and also a further comparison between these machines and sidecar machines, and, as such, should be very interesting. The start will be at 7 a.m. from Hampstead.

A Competitor's View of the Circuit de Paris.

LET me begin from the beginning, and express my thanks to the R.A.C. and A.C.U. for every effort they made towards helping us on our journey. As regards train accommodation, a saloon was provided for the outward journey, and two reserved compartments were provided on the way home.



British competitors in the A.C.C.F. Circuit de Paris about to embark for Boulogne from Folkestone.

The fact that nine of the competitors were left to their own devices was purely an accident, as the ever hospitable and kindly members of the A.C.C.F. were at the Gare du Nord to meet them, but these nine men who came by the second of the two trains from Boulogne never thought of looking for their friends at the barrier, but went direct to the Customs House, and so missed the very men who were on the spot to look after their interests.

They were finally discovered at a small hotel near the St. Lazare Station, and two of the party then removed their bags to one of the official hotels, the name of which the A.C.C.F. should have wired to the A.C.U. This omission on the part of the French club was the only real hitch in the proceedings.

Was it worth it all? I say most emphatically, yes! We had the time of our lives. One cannot but admire the enterprise, enthusiasm, and really hard work displayed by the members of the A.C.C.F. Monsieurs Debailly, Buissard, Lecomte, Plazolles, Longuemare, and Dacier all worked with a will, and their work is purely honorary.

French Roads in Town and Country.

They chose a course over magnificent roads. French roads near towns and around the metropolis are notoriously bad, but so good was the surface in the open country and so charming the districts traversed that the uncomfortable part of the journey was soon forgotten. In fact, after a little practice, *pavé* riding soon became a habit. The only difficulty was for the Englishmen to realise that the *trottoir cyclable* was for use when encountered.

It was quite wonderful how the same officials turned up at the controls in different parts of the country, and how each was worked in an orderly and efficient manner. The absence of a rigidly observed speed limit and the resultant go-as-you-please method of running, quite unobtainable in this country, lent the trial a charm which can only be realised by those who took part in it, while the same may be said of the kindly attitude of the inhabitants, who showed themselves to be true sportsmen. Groups gathered at all the *caniveaux* in the villages, and cheered and clapped when an unfortunate rider got bumped out of his saddle, and egged him on to travel faster.

Everyone thought it was a race, and an old gentleman who saw me stop and take a photograph of a competitor coming through the picturesque gateway at Moret told me I would never win if I stopped to take pictures.

As regards my experiences as a competitor. I rode a 2¾ h.p. Douglas with two-speed gear and no free engine clutch, which, though it was the lightest machine in the English team, carried the most luggage. My bag contained spare suit, collars, shirts, pyjamas, etc., and weighed a considerable amount. The little machine rode over the awful *pavé* out of Paris in a perfectly splendid manner, but after the Fontainebleau control, where we began to strike really good roads for the first time, I experienced symptoms which made me suppose the jet was choked. Closing the air and racing the engine for a few seconds appeared to cure the obstruction, and I had no further trouble till after the speed trial at Montanglaust.

I am, however, progressing a little too fast. I was travelling well and longing for Coulommiers, when, seeing a pretty village on a hill across the intervening valley, and thinking what a pretty picture it would make, I heard a crash and saw Cook's machine in the road and Cook picking himself up, while just before Fletcher, Bishop, and I had helped Lake, whose two-speed gear was making an appalling noise.

We consulted with a peasant, and leaving Cook's machine with burst tyre and broken head by the roadside we bargained with a cab proprietor at Montpertuis to take the wreck to Coulommiers.



General view in the park at Versailles, where the trial ended.

A Competitor's View of the Circuit de Paris.—

At this place my machine was being filled up when the boy with the can spilt the petrol all over it. At the first sign of an engine explosion, as the machine was wheeled along, flames burst out. Bondini (the Italian rider of the 2½ h.p. Motosacoche), Pernette. Fletcher, and one or two others, rapidly came to the rescue and beat the flames out with their caps. Thanks to their prompt action the situation was saved and no damage resulted, but it was a near thing.

After the hill-climb and speed test my gallant little machine began to misfire and fall off in power, and an examination of the carburetter revealed a punctured float, due probably to the awful vibration set up by the *pavé*. Nothing else seemed amiss. The machine ran well in fits and starts, and by a little manipulation of the levers I got to Soissons ten minutes late.

The rest of the run was made to Compiègne in excellent form. There was, perhaps, a little grumbling at their being no hotel accommodation at Compiègne, but the pretty taxi drive through the forests the next morning was much appreciated.

The Second Day's Run.

The second day of the trial was very different from the first. The first day was like summer, and the second was bitterly cold, and the head wind very trying. After leaving Beauvais I decided to put things right. At the same time my gear lever wanted adjusting, so I saw to this myself and handed the mechanic in charge the float to repair. This intelligent person had when next I saw him soldered up the float with the petrol in it, so I told him to punch a tiny hole with a needle and boil the petrol out in a saucepan. As soon as I had finished the small adjustment I found he had punched a $\frac{1}{16}$in. hole with a nail, so I had to do the job myself eventually and pay a franc for the privilege. Even then the trouble was not over, so I at last took the whole carburetter down, and beyond finding a good deal of grit in the float chamber everything seemed all right.

However, all seemed to go well, and as I had lost much time there now followed a Junior T.T. of my own to Vernon. The little Douglas sped on at an incredible speed, with the wind whistling past my ears, for many a mile, and my spirits rose accordingly. I was gaining valuable time when the trouble happened again. Always after stopping the machine recovered, and eventually I found that the whole of the bad running was due to the vent hole in the filler cap being choked with dust. This vent hole is a groove in the threads on to which the cap screws, and when it is stopped up there is no outward indication of the fact.

Once the obstruction was cleared I made up time with a vengeance. Leaving Vernon last of all, I soon caught up my own class, and was not much behind my bigger brothers. At Maintenon there was a *controle* but no *controlleur*, so we waited about till it was time to re-start and then departed, and more Junior T.T.-ing followed to Versailles. With the wind behind we sped along in fine style, and made short work of the intervening distance.

At Versailles I had a look at La Française, a machine with an Anzani engine, slightly inclined forward, and *désaxé* cylinder, an overhead exhaust, and two automatic inlets in the cylinder head. It was quite a fast machine.

After the wait at Versailles for all the men to turn up, the competitors formed into a procession to ride into Paris. Tillman, as was mentioned last week, had received injuries through a fall caused by a dog, and could not start unassisted, so a Frenchman and I pushed him off. I arrived by one road at the Porte Maillot, while most of the others who followed another route had an unpleasant experience which I missed.

Accident to an Unfortunate Cyclist.

A cyclist, like many others of the scorching tribe, both French and English, was riding with his head down and never saw a tram approaching him. Griffiths and others yelled at him, but it was too late; he was struck on the head and a competitor rode over him.

Of course, we all entered Paris with a good deal less petrol than when we left, and so there would have been no duty to pay, but we were all too tired to *parlez-vous* with the Octroi officials, so one or two of us squeezed through beside a tram and sped up the Avenue de la Grande Armée, tore down the Champs Elysées, swooped round the half empty Place de la Concorde—inadvertently on the wrong side of the Column, causing a policeman to gesticulate madly and play tunes on his whistle, to which we did not stop to listen—and flying up the Rue Royale, we turned off by the Madeleine, and so reached our hotel.

It was a great ride. Dover and Kilpatrick eventually met at the Gare du Nord on Monday, having drifted in, one from Soissons and the other from Compiègne. They then went to Longchamps together, and there Kilpatrick was relieved of all his spare cash.

E.M.P.B.

SUGGESTED HILL-CLIMB IN THE ISLE OF MAN.

Permit Refused.

An application has been considered by the A.C.U. from the Mersey Motor Club for a permit to hold an open hill-climb in the Isle of Man on June 29th, the day after the Junior Tourist Trophy Race. After full consideration had been given to the matter, it was decided that the permit be not granted, as it was felt that it was undesirable for any other competitions to be held in the island at the same period as the T.T. races.



MARSEILLES TO NICE ROAD RACE. A control in the Esterel, amid magnificent scenery, between Frejus and Cannes.

Questions & Replies



A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Steel-studded Band.

The tyre of my 6 h.p. Zenith has worn very smooth. Can you recommend the Lomax steel studded band? Does it grip the road well and prevent punctures and skidding?—N.

The steel studded band mentioned is quite good. It grips the road well. The band will certainly not skid on a wet road and it will prevent punctures.

Brittle Gear Teeth.

I have just purchased a new two-speed chain drive motor cycle of well-known make. Upon the first trial recently a tooth in the gear box became broken and wedged. This I thought might have been my fault, although I have driven cars and owned motor cycles since 1904. I sent the gear box back to the makers, and they repaired and returned it free. Now, upon the second trial the same thing occurs, through no fault of mine that I can see. I had ridden the machine out about five miles on top gear, stopped in free engine position to light the lamp, but upon trying to start again could not do so, the gears being fixed, and upon being dismantled two or three teeth were found broken and wedged. Is it reasonable to ask the makers to exchange the machine for one of their free engine belt-driven, with epicyclic two-speed gear?—F.E.B.

Yes; under the circumstances, we should advise you to take the matter up again with the makers and ask them to meet you. Really the fault seems to be due to over-hardening of the teeth. Such a fault should never occur in the case of a well-made gear box. What you had better do is to put the case before the makers just as you have done to us.

3½ h.p. Two-speed and Sidecar.

Will you please give me your advice respecting the latest 3½ h.p. B.S.A. motor cycle with two-speed gear? Is this gear thoroughly reliable, equal to taking a sidecar up any reasonable hill? Is the wearing quality of this machine of the best? I want it for good all-round wear, not for racing.—A.W.H.

We have a high opinion of the machine mentioned, and feel sure it would suit your purpose. The gear should be reliable and would take a sidecar up most main road hills, only you must not expect a 3½ h.p. to do wonders on single figure gradients without a very low bottom gear ratio.

Manchester to Southampton.

I am contemplating a holiday run from Manchester to Southampton and back. Would you please advise what you consider a suitable route, avoiding traffic as far as possible? I had though of route as follows: Manchester Stockport, Crewe, Shrewsbury, Hereford, Gloucester, Swindon, and Southampton. Would you consider this a good route? What would be distance by the route you advise?—J.M.

We should recommend the following route: Manchester, Salford, Altrincham, Northwich, Middlewich, Nantwich, Market Drayton, Newport, along Watling Street, through Brownhills, through Castle Bromwich, Stonebridge, Kenilworth, Warwick, Banbury, Oxford, Abingdon, East Ilsley, Newbury, Whitchurch, Winchester, Eastleigh, Southampton. This is a better route, avoiding more towns and traffic, than that suggested in your letter. The distance is approximately 240 miles.

Two-stroke Machine.

Has the Scott two-stroke as much flexibility and power of speedy acceleration as a four-cylinder F.N.? What might I expect to get a 1910 Scott for (in good order) from a firm like Godfrey and Applebee?—S.C.M.

The machine in question is fairly flexible, has plenty of power, accelerates excellently, and is a really magnificent machine. If you are investing in one we should recommend the 1911 model which is a great improvement upon the 1910. The 1910 model could be purchased for a fairly reasonable price. We should strongly advise you to purchase one at about £35 of a later type.

A Lightweight for Convenience.

I should be glad to have your opinion of the 1911 2½ h.p. Motosacoche and 1911 2 h.p. Humber. Is there much actual difference in the speed and reliability of these machines? I want a motor for short distances, though occasionally for 70 mile runs, but owing to a long passage, yard, and big stone step, and to this being the centre of the town, I cannot use a heavyweight. At the same time, as I am twelve stones, I must not have anything under-powered.—E.F.P.

We should say there would be very little to choose between the two machines mentioned in your letter, though the 2½ h.p. is naturally the more powerful. Both are good and up to your weight. Either would suit you for short distances. Of course, you must not expect exceptional speeds from either of these machines, but as you live in a comparatively flat country the power will suffice.



SCENES AT PENZANCE, THE HALF-WAY POINT OF THE LONDON-LAND'S END AND BACK RUN.

The timekeeper, Mr. F. T. Bidlake, starting J. Chater Lea. Competitors lining up for the start of the homeward journey. J. Stevens (5 h.p. A.J.S. sidecar).

HUTCHINSON TYRES

M.C.C. LAND'S END RELIABILITY TRIAL.

15 MEDALS

OBTAINED BY RIDERS OF

THESE FAMOUS TYRES.

ALSO THE

SPECIAL AWARD

FOR

BEST LIGHTWEIGHT PERFORMANCE,

Won by Mr. P. W. Moffatt.

THUS HUTCHINSON TYRES

Secure over 33⅓% of the Total Medals Awarded.

IMPORTANT. The Hutchinson Tyres used in all competitions on track and road are identical in every respect to those supplied to the public.

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COUPON. This Coupon entitles you to our Novelty Booklet "W H Y," and latest Catalog.

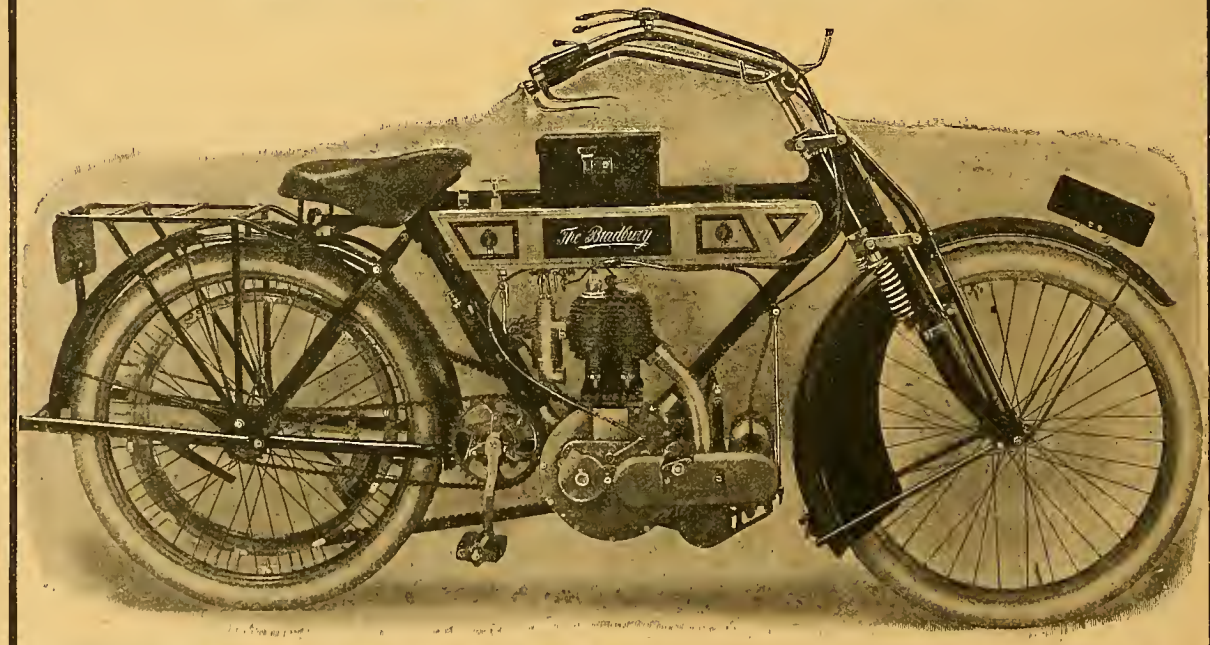


The Bradbury

again proves its Reliability.

London to Land's End and Back. FIVE BRADBURY Riders successful.

(Messrs. W. Cooper, C. W. Meredith, A. R. Abbott, R. C. Owen Wells —on a Chain-driven Machine—and Hugh Gibson, who finished to time, winning Four Gold and One Silver Medals.)



The only Single cylinder Machine with Sidecar that came successfully through the trial was the **3½ h.p. Two-speed Gear Bradbury**, ridden by Mr. Hugh Gibson. *Motor Cycling* says of this performance that "it was one of the finest in the trial, and how he got through on time is a marvel, considering the severity of the course."

The above trial was a real and severe test of a machine's reliability, and the success of the Bradbury Motor Cycles is convincing proof of their excellent qualities.

HARROGATE M.C.C. HILL CLIMB. Class 3. First and fastest time: Mr. W. E. GRANGE.

Send for catalogue and address of nearest agent to—

BRADBURY & Co. Ltd., OLDHAM

London to Holyhead.

Please tell me the best route from London to Holyhead and the distance.—F.C.K.

Your best route would be as follows: London, Regent's Park, Barnet, St. Albans, Dunstable, Fenny Stratford, Stony Stratford, Weedon, and Daventry. At the end of the town there is a signpost to Holyhead, put up by the Royal Automobile Club. All you have to do for the rest of the journey is to follow these signposts. The distance is approximately 260 miles.

Exeter to Finsbury Park, N.

In a week or two I am driving my 1907 single gear twin Rex and sidecar from Plymouth to London and should like to know the best way from Exeter onwards, and the best way to get to Finsbury Park, N. I have done very little town driving, and none in London.—J.F.

Your best route would be as follows: Exeter, Honiton, Chard, Crewkerne, Yeovil, Shaftesbury, Salisbury, Andover, Whitchurch, Basingstoke, Bagshot, Staines, Hounslow; at the junction of the Bath Road turn left and go through Hanwell, Greenford, where turn left and then right for Harrow. Near Harrow Station turn right and go straight through till you reach the Edgware Road, cross over here, go through Hendon and along Golders Green to Hampstead Heath. Here ask your way to Highgate, a road from which will bring you to Upper Holloway, which is close to Finsbury Park. Anyone there will tell you where you want to go. The route avoids most of the bad traffic. The distance would be approximately 178 miles.

Touring Abroad.

(1.) Will you kindly oblige me with the route (good scenery) from Ostend, Belgium, to Neuchatel, Switzerland, returning through France to Paris Rouen, and Dieppe? (2.) What is the condition of the roads? (3.) Is petrol easily obtained and at what price? (4.) What are the speed limits?—T.B.

What we should recommend you to do is to become a touring member of the A.C.U. (89, Pall Mall, S.W.), where they have all the machinery for working out tours and giving information. (1.) In the first place, we should advise you not to entertain Ostend or Belgium if you are going to Nenchatel. Except in the Ardennes, the roads in Belgium are very bad. Evidently the best way would be to go by the following route: Dieppe, Neuchatel, Beauvais, Compiègne, Soissons, Reims, Châlons-sur-Marne, Vitry, le Francois, Neuchateau, Bains, Luxeuil, Montbeliard, St. Hippolyte, Gounois, La Chaux de Fonds, Neuchatel. (2.) We know this road as far as Bains and, for the most part, the surface is good The scenery is pretty, especially in the Vosges, and it would be infinitely preferable to going through Belgium, where the roads are execrable. (3.) Petrol is obtainable practically everywhere at about 1s. 8d. or 2s. per gallon. The average price is about forty-two centimes per litre. (4.) The speed limit is nominally nineteen miles an hour; actually there is no limit at all

Two-stroke for India.

(1.) Is a two-stroke engine to be recommended for a novice on the ground of simplicity? (2.) Would a hot climate be likely to put any difficulties in the way of running a two-stroke engine? (3.) What is the lowest h.p. possible for a cycle (with two-speed gear and single-cylinder) and a sidecar with a light passenger (eight stones) and in a fairly flat country? (4.) Is a shaft-drive likely to be superior in every way to a belt-drive in a hot, damp climate (Bengal)?—R.J.H.

(1.) There is not much to go wrong in a two-stroke engine, (2) but if you are going to use it in a hot climate a water-cooled engine would be advisable. (3.) The lowest h.p. for sidecar work is 3½. (4.) We do not know of a two-stroke machine with shaft-drive; chain-drive is fitted.

READERS' REPLIES.

St. Leonards-on-Sea to Leicester.

I notice in your issue of April 4th a query by "F.P." for best and shortest route from St. Leonards-on-Sea to Leicester. As I recently did this journey both ways, perhaps I might be permitted, with all due diffidence, to offer an alternative, and, I think, superior, route to the one you give. I went as follows: St. Leonards, Robertsbridge, Tonbridge, Sevenoaks, Westerham, Godstone, Caterham Valley, Upper Caterham, Coulsdon, Woodmansterne, Banstead, Ewell, Surbiton, Kingston, Hampton, follow tramlines and turn off to the left at Uxbridge Road, through Feltham to Uxbridge, Amersham, Aylesbury, Buckingham, Towcester, Daventry, Lutterworth, to Leicester. About 175 miles. I did this very comfortably on my 1910 two-speed Humber in eight hours last month, including two stops for petrol and three-quarters of an hour for lunch. The traffic and tramlines are no worse than one encounters going through Reading. The distance is by Cowey speedometer.—HAROLD F. A. KINDER.

Magneto Rocking Arm Sticking.

Several of your readers complain of the magneto rocking arm sticking. To get a straight hole through the fibre bush, the following, I have found, answers well Procure a round piece of metal a comfortable fit in the bush, put a fine saw or file cut in the top and then ream through with thumb and fingers.—R. H. ADAMS.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"H.C." (Plumstead).—3½ h.p. Rex single speed, with and without sidecar.

"H.F.P." (Guildford).—2¾ h.p. Levis two stroke, and 2 h.p. Humber for business purposes.

"Pedro" (New Malden).—3½ h.p. Lincoln Elk, with and without two or three speed gear.

"F.C.B."—Bowden and other countershaft gears.

"P.W.D." (Richmond).—3½ h.p. Rudge Multi with sidecar.

"A.K." (Aylsham).—3½ h.p. 1912 Bradbury chain drive.

"W.L." (Kensington).—The Binks two-jet and Lukin carburetters, slow running and control in traffic.

"P.C.B." (Selsey).—A.C. Sociable, average petrol consumption.

"C.C." (Folkestone).—T.M.C. and sidecar, reliability and petrol consumption.

"J.H." (Durham).—T.M.C. 1912 with sidecar, power, transmission, gears, and starting with clutch.

"J.B." (Cathcart).—2¾ M.R., Armstrong three-speed gear.

"J.B." (Glasgow).—F.N. four-cylinder two-speed gear for sidecar work, hill-climbing, petrol consumption, and cool running.



M.C.C. TRIAL FROM LONDON TO LAND'S END AND BACK.
Some of the early arrivals at the "End." The riders are R. Lord (6 h.p. Rex sidette), S. J Bellchambers (3½ h.p. Rover), G. T. Gray (3½ h.p. Rudge), and B. Alan Hill (7 h.p. Indian sidecar).

Six Days' Sidecar Ride.

Arnold Butler, who recently accomplished a successful six days' sidecar ride, used a Stanley belt on his A.S.L. machine. He assures us that the belt went through without trouble, and was only shortened once.

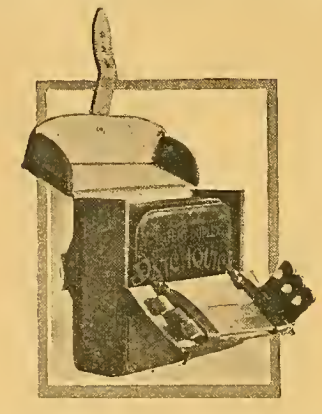
Trade Announcements.

We are asked to point out that Mr. Fritz Sabel, director of Sabella Cars, Ltd., is the original designer of the Sabella cyclecar.

Mr. Stacey, a well-known member of the Sheffield and Hallamshire M.C.C., has joined Mr. J. Barker, of Dronfield. The firm will be known in future as Barker and Stacey.

A Neat Tyre Repair Outfit.

The accompanying illustration shows how extremely neatly the leather wallet supplied by Messrs. Woodgates Bros., Tiverton, Devon, encloses their well-known Patchquick repair outfit and the



set of three tyre levers. This wallet is designed to fasten on the carrier of the machine, and is one of the most useful and novel accessories which have been brought to our notice of late.



Vulcanising.

Harvey Frost and Co., 27, Charing Cross Road, W.C., are just about to place on the market a small portable H.F. vulcaniser especially made for motor cycle tyres. It will be in a very compact form, and will repair covers and tubes either on or off the wheels. It will be sold at a very low figure.

Catalogue Received.

The eighth edition of the catalogue of Juno motor cycles and accessories is to hand. This is a very complete list, embracing as it does descriptions and illustrations of the Juno machines, various makes of tyres, speed indicators, and other accessories. The list, which is issued by the Metropolitan Machinists' Co., Ltd., 248, Bishopsgate, E.C., also contains particulars and prices for building wheels fitted with most of the free engine and variable gears on the market.

A Good Belt.

A few weeks ago, Brown Bros., Ltd., Newman Street, Oxford Street, W., sent us a 1in. rubber and canvas belt for trial. This we fitted to one of our sidecar machines, and after running it about 300 miles we find it is quite satisfactory. In the initial stages it required shortening a few times, but as it was used in the very worst of weather this is not surprising. The extra strain of hauling a sidecar always shows up the merits of any belt, and, considering that the Brown belt has done 300 miles in extremely bad weather, and looks little the worse for its experience, it must be classed among the best of this type of power transmitter.

Burglars Again.

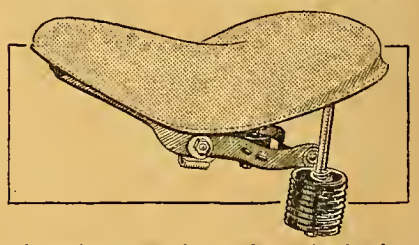
G. T. Riches and Co., 19, Store Street, W.C., inform us that their premises were entered by burglars during the Easter holidays. Among other things the letter box was rifled, so that if any of our readers do not receive replies to any communications they have made to Messrs. Riches they are requested to be good enough to repeat them.

Sidecar Lighting.

It is advisable, nay essential, for sidecarists to carry lamps placed in such a position that they show the full width of the vehicle. Recognising this, H. Miller and Co., Miller Street, Birmingham, have introduced a reasonably priced acetylene lamp complete with a bracket specially designed for attachment to a sidecar. The lamp shows a white light in front and a red rear light, and is hung on springs. It is made to suit either the left or right side, and is priced at a very moderate figure.

Brooks's Anatomical Saddle.

The distinguishing characteristic of the B 170 Brooks saddle is the seat part, which consists of a carefully moulded steel base amply and very comfortably cushioned,



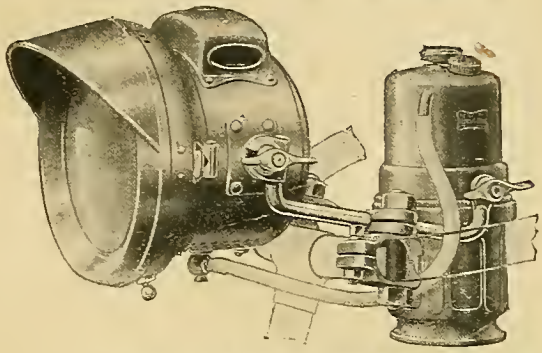
and having over all a substantial leather covering. Being shaped on anatomical lines, this seat enables the rider to sit in it rather than on it, and its consequent comfort is particularly noticeable on long journeys. The springing is practically identical with the same makers' compound springs, which eliminate vibration, and dispense with objectionable rebound.



Members of the Brookdale Club (motor section) photographed outside the headquarters, Brookdale Hall, Catford, on the occasion of the opening run to Brighton.

ONE REASON
FOR THE GREAT SUPERIORITY OF
LUCAS
"KING OF THE ROAD"
LAMPS

OVER ALL OTHERS IS THAT THEY ARE DESIGNED AND MADE BY MEN WHO KNOW THEIR BUSINESS THOROUGHLY—NOT BY THOSE WHO MERELY MUDDLE THROUGH AND THINK THEY KNOW. *SKILL COUNTS.*



The Lucas "King of the Road" Projector Set No. 462.

Fitted with Mangin Lens Mirror and Instantaneous Carbide-Container Fixing.

NEW PATTERN FOR 1912.

Lyndale,
Woodend Lane, Erdington,
Birmingham.
April 4th, 1912.

Messrs. Joseph Lucas, Ltd.
Dear Sirs,

Will you kindly send catalogue of your latest Lamps, etc. I have used your lamps on Matchless and Sidecar this last year, and am pleased to say they *have never given any trouble.* As for light giving I consider them *far superior* to any other make. I have tried several of the highly priced and advertised lights, but have been very pleased to see the last of them.

Yours truly,
(Signed) T. BRIDGWATER.

Send for descriptive Catalog of Lucas Motor-Cyclealities, post free from Dept. F.

JOSEPH LUCAS LTD., BIRMINGHAM.

DEPOTS: London, Manchester, Dublin, Newcastle-on-Tyne.

WE MAKE LIGHT OF OUR LABOUR.



Everything for the Motor Cyclist, and everything for the Motor Cycle.

Dunhill's
ALL WEATHER SUIT.

There is nothing more gratifying than the sense of independence aroused by clothing which can be relied on to protect you against all conditions of weather. A suit that will, on a wet day, take you dry through the heaviest shower, or, on a dry, dusty day, effectually exclude all dust. Such a suit is one made of our popular Dunwear Cloth, which, though combining the qualities of both Showerproof and Dustproof garments, unlike Paramatta or Holland, it can be properly tailored, and has the distinctive feature, which neither of these can claim, of a remarkably smart appearance. Being rubberless, the perfect ventilation essential to comfort on a hot day is ensured. This suit is especially ideal at present, the weather at this time of the year being more varied than at any other period, and to fully enjoy his rides the motor cyclist must have one.

Price of Jacket	£1 1 0
,, ,, Trouser Overalls	0 17 6
,, ,, Ordinary ,, ...	0 15 6

—— *CALL AND SEE THEM AT* ——

359-361, EUSTON RD., LONDON, N.W.

72, St. Vincent Street, GLASGOW. 88, Cross Street, MANCHESTER.
City Branch: 42-43, LOMBARD STREET. E.C.

THE LUKIN

SINGLE CONTROL CARBURETTER.

Absolutely Automatic

Very Flexible.



Extremely Simple.

Perfect Vaporiser.

Write for particulars to:

LUKIN LTD., The Ride, Newcomen Street, LONDON, E.C.

SPECIAL AGENTS:
THE SERVICE CO., LTD., 292-293, High Holborn, London, W.C.
H. TAYLOR & CO., 21a, Store St., Tottenham Court Rd., London, W.C.

LONDON TO PARIS in 3h. 12.

OLEO

DID IT!

After this refuse all others. Have a genuine OLEO for your money.

Ask for an OLEO 6D type (Motor Cycle) everywhere.



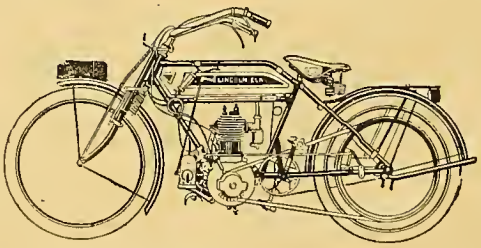
LEO RIPAULT & CO.,
64a, Poland Street, W.

"LINCOLN ELK" New Models, 1912.

Manufactured Completely by
J. KIRBY,
Broadgate, LINCOLN.

Telephone: 2Y5.
Telegrams: "ELK," LINCOLN.

Wholesale Agents for Scotland:
The North British Machine Co., Ltd.,
56 & 58, Great Clyde Street, Glasgow.



3½ h.p., £34 - 0 - 0.
3 h.p., £30 -10 - 0.
2¼ h.p., £28 -10 - 0.

All Models fitted with Palmer Tyres, Bosch Magneto, and Footrests. "Druid" Spring Forks.

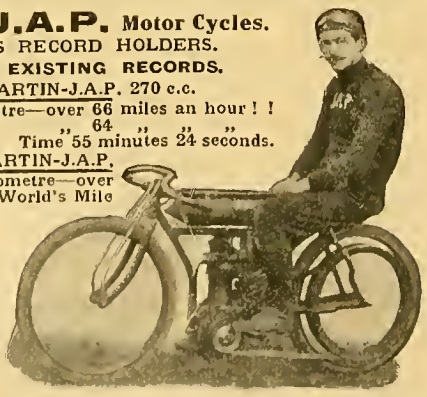
Sole London Agent:
REY,
Heath Street Motor Works,
5 Heath Street,
Hampstead, London, N.W.

MARTIN-J.A.P. Motor Cycles.
THE WORLD'S RECORD HOLDERS.
BROOKLANDS EXISTING RECORDS.

CLASS A. 1¾ h.p. MARTIN-J.A.P. 270 c.c.
World's Kilometre—over 66 miles an hour!!
" Mile " 64 " " "
" 50 Miles Time 55 minutes 24 seconds.

CLASS B. 2¾ h.p. MARTIN-J.A.P. 345 c.c. World's Kilometre—over 68 miles an hour!! World's Mile over 65 miles an hr.

CLASS C. 3½ h.p. MARTIN-J.A.P., 498 c.c. World's Kilometre—over 73 miles an hour!! World's Mile over 72 m.p.h.



H. MARTIN & CO.,
Works: Leslie Grove, East Croydon, Surrey.



"FITZALL" WRENCHES.
NUT AND PIPE.
DROP FORGED.
TRADE FITZALL MARK
SELECTED STEEL.



LAST WORD IN WRENCHES.
INSTANT GRIP. NO SLIPPING.

No Motorist or Mechanic should be without one.

Obtainable from all leading accessory dealers, or full particulars and prices and name of nearest dealer from—

J. C. PLIMPTON & Co., Ltd., PLIMPTON'S BUILDINGS, LIVERPOOL,
SOLE WHOLESALE AGENTS.

FREE GIFTS TO ALL.

We are wishful for a list of all the Motor Cycle Agents and Dealers in England. In order to get this, we are prepared to make you a present, according to the number of names and addresses that you can send us. These presents will vary from Harrison's Back-rests to Exhaust Whistles and Handle-bar Mirrors. Everybody will get something, as long as you send us the names and addresses of a dozen Motor Cycle Dealers. We don't want those that advertise in the papers, as we know all those. We want particulars of the little man in a small way, and of the big man if he does not advertise. If you send the name and address of every one of these in your town, you will be entitled to something in the way of an Exhaust Whistle, or Mirror, if you can make the list up to a dozen. Besides the present, you will get one of our Sale Lists.

We are declining the Accessories Trade, as you are perhaps aware, and we have an enormous amount of goods that we want to clear out cheap. They comprise such things as the following, for instance:

Just over 200 pairs of Morecambe Ribbed and Studded Covers, which you can have at 16/11½, 19/11½, and 23/11½. We have also 1,000 Tubes, 4/11½ and 8/11½; butt ended, 11/11½. All are good class stuff, and new. Besides the covers and tubes, we have a stock of Belts, and, as long as they last, we are clearing them out at 4d. per foot off list price. We have also dozens of Lamps, all makes, including Lucas and F.R.S.; XL'All Saddles, Seat-pillars, and Spring Forks; F.R.S. and Harrison's Back-rests; Exhaust Whistles; Mirrors; Speedometers; New and Second-hand Saddles, all makes; ditto Bags; Mabon Clutches, about two dozen, to fit various machines; one or two N.S.U. two speeds; also Albion two-speed and f.e.; Paraffin Tricar Lamps and Car Lamps; odd lines of Clothing, from 11/11½ per suit; Waterproof Leather Jackets, 19/6; Garner Whistles; odd Engines, Frames, and Wheels; Trembler and Non-trembler Coils; Accumulators and Dry Cells; Druid, Bradbury, and Air Spriogs, Ltd., Spring Forks; and many other odds and ends for the bhoys building up Motor Cycles; 100 1911 B. & B. Carburetters, 22/6 each to clear them out; 1912 ditto, 26/- each; about a dozen Accumulator Motor Cycles: these you can have at £4 19s. 6d. each, cash down; good machines, but not guaranteed to do Honiston Pass; send along £5, and we will pick you out a machine. If you want one a little better, send £1 more. If you can sport £10, send it along, and we will send you a magneto machine.

For cash down you can take 20% off any second-hand machines in our list. If you have not had one, you should have one. We must have many hundreds of pounds' worth of tackle about the place people are wanting every day in the week. Let us know what you want before buying elsewhere. We keep a staff of clerks handy to answer letters, and we are always pleased to reply to all our clients' enquiries. We can do a great many things for you, barring supplying such things as a 1912 F.E. Triumph for about £12, and an accumulator machine or a 5-6 h.p. Clyno and Sidecar for £25. We very often get letters from our friends wanting such luxuries, and we have to keep telling them that we have nothing to give away. We gave all we have to give away last week. We get a matter of a dozen of these Sunny Jims writing every morning, and we can only imagine that they write either from ignorance or under the impression that we are running a philanthropic institution, or perhaps to hear what that kid Hitchen will say for himself when he gets his hair off.

We are also wishful to shift the enormous stock of Second-hand Motor Cycles that have been gathered together in the garage during the past few months, and which have been taken in exchange deals for new machines, and we have over 150 here. Owing to the huge stock of new ones that we have coming in during the season, we shall have to shift them or will have to take another garage, as there won't be room for all the stuff. Write and tell us what you want: make us an offer. We have made up our minds to shift this second-hand tackle, coal war or no coal war, and whether the railway or other strikes come off or not.

We still believe we have here the largest stock in the world, and if you have not been to see us you should have been. It will be an eye-opener for you. We don't waste valuable time in putting all this stuff in a list in the papers, as it would cost £50 per week to do so. By not spending this amount we are able to sell you things cheaply.

Another reason why we are able to sell things so cheaply is that we do not pay huge sums in rent. The rent of our establishment does not cost as much per annum as some firms pay per week. The place is a shabby old place. It is nothing to look at, but it is large, and the STOCK IS THERE; and that is what you want to see—not an elaborate building of handsome proportions.

Amongst the stock at the moment there are: P and M.'s, Jap-Bats, Matchless, Clynos, Bradburys, Zeniths, Humbers, Premiers, Motosacoches, Lincoln-Elks, A.C.'s, Rudges, New Hudsons, Triumphs, etc.; and we expect Douglas and Morgans any time. We have all models: Single and two-speeds, twins, and all the rest of it. The trade will find us on the jump for their orders. Don't waste time. Wire or 'phone your orders. Best trade terms and early delivery guaranteed.

Note.—The above list of machines is correct. We get the machines delivered before others, as we pay promptly, take all dis., and the makers can rely on Hitchen's being ready with the rhino when they are ready with the machine. At the moment of writing we hold five P. & M.'s, four Scotts, and other equally rare luxuries for your purchase. Don't believe the tale that they cannot be got—it's all cod. We have 'em here for you.

HITCHEN'S, LTD., MORECAMBE.

Tel.: 112. Wires: "Motor, Morecambe."

THE TRUMP-JAP

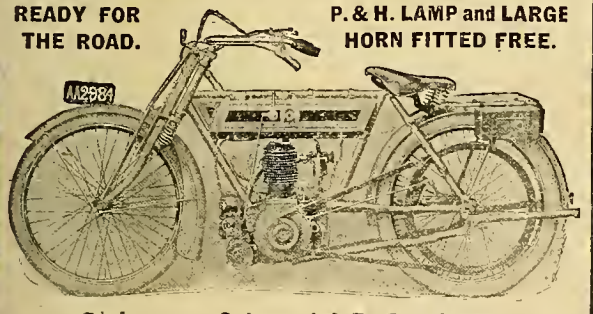
The most perfect development of motor cycle-construction.

RELIABILITY, SPEED, COMFORT.

THE Machine for the Expert.

THE Machine for the Novice.

READY FOR THE ROAD. **P. & H. LAMP and LARGE HORN FITTED FREE.**



3½ h.p. or 6 h.p. J.A.P. Engines.

FREE ENGINES. TWO AND THREE SPEED GEARS.

Write for our Catalogue and long list of Successes.
They are interesting.

TRUMP MOTORS, Ld., 36, John Bright St., Birmingham.

Agents—London: Godfrey & Applebee, Ltd., 308, Gt. Portland Street.; Manchester: St. James' Cycling Stores, Oxford St.; Belfast: Alex. Bullick 30, King Street; Edinboro': Alexander & Co., 108-110, Lothian Road; Glasgow: Alexander & Co., 272, Gt. Western Rd.; Darlington: W. E. Dove & Co., Bondgate; Bedford: Birmingham Cycle Co., 105, Midland Rd.; Leicester: Tom Cann, Ltd., Applegate Street.

FOR DEFERRED PAYMENTS
¼ down and balance in 12 monthly equal payments.

HARRODS

THE BEST HOUSE for MOTOR CYCLES

SIDECARS OR RUNABOUTS

Sole Concessionnaires of the celebrated
MORGAN RUNABOUTS.
Stockists of G.W.K. MOTORETTE, SABELLA, ROLLO, etc., etc.

Finest motor cycle showrooms in London.

NOTE ADDRESS:

HARRODS LTD.

(Richard Burbidge, Managing Director),
Brompton Road, LONDON, S.W.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII.
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

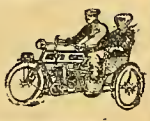
SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION IX.
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

DELIGHTED HOLIDAY MAKERS
EVERYWHERE RECOMMEND
THE HOUSE ALWAYS UP-TO-DATE WITH DELIVERY.

WAUGHOPE'S

ASK FOR TO-DAY'S LIST, IT INCLUDES THESE BIG BARGAINS.

Famous for largest stocks. Ready to deliver biggest contracts for delivery at exact definite future dates. Lowest prices for cash. Best allowances for exchanges

5192.	3½ h.p. 1911 2-speed **HUMBER** ..	£37	10
5193.	5-6 h.p. 4-cyl. **F.N.** and Sidecar ..	£20	0
5195.	2 h.p. 1908 **MOTO-REVE**	£17	10
5214.	7 h.p. 1909 2-speed **V.S.**	£33	10
5216.	2¾ h.p. 1911 Standard **DOUGLAS** ..	£28	0
5222.	2 h.p. 1910 **MOTO-REVE**	£17	10
5225.	3½ h.p. 1911 2-speed **HUMBER** ..	£37	10
5227.	2 h.p. 1911 Lady's **SINGER**	£25	0
5230.	3½ h.p. 1909 **TRIUMPH**	£28	0
5237.	2¾ h.p. 1911 Standard **DOUGLAS** ..	£28	0
5239.	3½ h.p. 1909 **TRIUMPH**	£29	0
5241.	3½ h.p. 1911 Speed King **REX**	£30	0
5242.	3½ h.p. 1910 **LINCOLN-ELK**	£22	0
5243.	2¾ h.p. 1911 Standard **DOUGLAS** ..	£30	0
5246.	3½ h.p. **ANTOINE**	£15	0
5253.	3½ h.p. 1908 Twin **PEUGEOT**	£18	0
5261.	3½ h.p. 1911 Cone Clutch **REX** ..	£35	0
5262.	3½ h.p. 1911 2-speed **HUMBER** ..	£37	10
5265.	6 h.p. 1911 **ZENITH-GRADUA** ..	£55	0
5271.	4½ h.p. 4-cyl. **F.N.**	£18	10
6275.	8 h.p. 1911 Standard **MATCHLESS**	£45	0
6276.	3½ h.p. **FAFNIR** and Sidecar	£20	0
5277.	2¼ h.p. 1910 2-speed **F.N.**	£25	0
5285.	2 h.p. 1910 **MOTO-REVE**	£20	0
5289.	3½ h.p. 1910 2-speed **HUMBER** ..	£30	0
5293.	2¾ h.p. 1911 **ENFIELD**	£28	0
5204.	3½ h.p. 1911 2-speed **BRADBURY**	£40	0
5124.	3½ h.p. 1909 2-speed **P. & M.**	£35	0
5119.	3½ h.p. 2-speed **C.I.E.**	£20	0
5118.	2 h.p. 1911 **HUMBER**	£26	10
5117.	2½ h.p. 1911 Free-engine **SINGER** ..	£38	0
5107.	2¾ h.p. 1911 Standard **DOUGLAS** ..	£23	10
5082.	2¼ h.p. 1910 **ROYAL ENFIELD**	£20	0
5066.	3½ h.p. 1911 **BRADBURY,** Mabon cl.	£37	10
5064.	3½ h.p. 1911 2-speed **HUMBER**	£37	10
5058.	3½ h.p. 1911 **ZENITH-GRADUA**	£45	0
5055.	3½ h.p. 1911 **L.M.C.,** variable gear ..	£35	0
2965.	2 h.p. 1909 **MOTO-REVE**	£17	10
4046.	1¾ h.p. **MOTOSACOCHE**	£11	10
4249.	3½ h.p. 1911 Standard **BAT**	30	Gns.
4322.	3½ h.p. 1911 2-speed **N.S.U.**	£35	0
4420.	3½ h.p. 1911 Free-engine **PREMIER**	£38	10
4444.	1¾ h.p. 1909 **WOLF**	£10	10
4474.	3½ h.p. 1910 **PREMIER**	£27	10
4506.	3½ h.p. 1911 Clutch **REX**	£33	10
4531.	3½ h.p. 1910 2-speed **SCOTT**	£32	10
4546.	3½ h.p. 1911 **KERRY-ABINGDON** ..	£32	10
4628.	3½ h.p. 1910 **TRIUMPH,** Mabon variable gear	£38	0
4631.	3½ h.p. 1909 **J.A.P.**	£22	0
4677.	3½ h.p. 1910 **BRADBURY**	£28	0
4692.	4½ h.p. 1909 4-cyl. **F.N.**	£20	0
4701.	2½ h.p. 1909 Twin **N.S.U.**	£18	0
4727.	3½ h.p. 1911 **KERRY-ABINGDON** ..	30	Gns.
4729.	2¼ h.p. 1910 **ROYAL ENFIELD**	£22	0
4735.	3½ h.p. 1910 **QUADRANT**	£25	0
4752.	2½ h.p. **J.A.P.**	£7	10
4759.	3½ h.p. 1910 2-speed **BRADBURY** ..	£35	0
4760.	5 h.p. 1911 Free-engine **INDIAN** ..	£39	10
4776.	3½ h.p. 1911 Free-engine **TRIUMPH**	£43	10
4799.	3½ h.p. 1909 **TRIUMPH**	£28	10
4784.	2½ h.p. 1911 **T.T. ARIEL**	£28	10

9, SHOE LANE, FLEET STREET, LONDON, E.C.

Wires: Opificer, London. 'Phone: Holborn 5777.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

☞DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

1912 Free Engine Triumphs, in stock.—Louis Smith, The Garage, Barnard Castle.

1½h.p. Wolf, magneto, tyres new, perfect order; £12. —Park, 1, High St., Berwick.

MOTOSACOCHE, 1910, 1¾h.p., magneto, very little used; £18.—McDonald, 3, Warwick Rd., Carlisle.

TO Immediate Purchaser £11.—De Dion, low frame, 2¾h.p. (grand condition), good tyres.—Peel, Watchet.

F.N., 2¼h.p., 2-speed, free engine, shaft drive, magneto, perfect; £26.—Askew, Curwen St., Workington.

3½h.p. Minerva, Brown and Barlow, splendid condition, spares; £16, or nearest offer.—Reed, Chester Moor.

1912 Triumph, free engine, in stock, £55; 1912 2¼ h.p. Calcott, 3-speed, £42.—Nixon, Brampton, Cumberland.

1911 Free Engine Rudge, T.T. bars, condition excellent, tyres good, spares, lamp, etc.; no offers; £42/10.—Dixon, 58, Victoria Rd., Darlington.

MOTOR Cycle, 1912, free engine Bradbury, offers; 1911 4h.p. 2-speed Quadrant, £40; 1911 7h.p. free engine Rex, £36.—Walker, Fishburn, Ferryhill.

BAT, 3½h.p., racer, holder of 5 miles record (Workington Track), in fine order; £22, or near offer.—Wilkinson, Edmondson's Garage, Keswick, Cumberland.

1912 Phelon and Moores, free engine Triumphs, Douglases, Bradburys, B.S.A.'s, Enfields, in stock. —Phone: 1X2. Stout's Garage, Egremont, Cumberland.

ARIEL, 3½h.p., 1911, variable gear, F.E., decompressor, spring seat, spares, belt, and tube, valves, lamp, etc., perfect; cost £55, accept £32; trial; bargain.—H. Anderson, Croxdale, Durham.

ARNO, the ideal machine.—3½h.p. T.T. model, £45; Tourist model, £45; 2¾h.p. medium, 39 guineas; 3½h.p. 2-speed and free engine, £55; sidecars to fit any machine in stock.—Myers, Neville's Cross, Durham.

TRIUMPHS, Humbers, B.S.A., Royal Enfield motor cycles, lightweights, 2 speeds, free engines; write, wire, or 'phone for immediate deliveries.—Turvey and Co., The Motor House, Sunderland. Tels.: No 626.

SECTION II.

York and Lancashire.

HODGSON for Clynos (in stock).

HODGSON for Premiers (in stock).

HODGSON for Sidecars (in stock).

HODGSON, 10, Horton Rd., Bradford. Tel.: 5361

1911 Motor Cycle, less engine, brand new; £10. 9, Buckley Brook St., Rochdale.

The Halifax Motor Exchange

Largest Rex Dealers, 16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams, "Perfection."

£3 to £5 DOWN and 5/- weekly secures prompt despatch of

3½ h.p. **FAFNIR,** low frame, h.b. control	£13 10
Twin **REX,** spring forks	£16 10
3 h.p. **QUADRANT**	£10 10
2¾ h.p. **KERRY,** spring forks	£10 10
3 h.p. **HUMBER,** chain drive	£8 10
3½ h.p. **WOLF,** spray, smart, h.b. control	£12 10
3½ h.p. **BRADBURY**	£15 0
2¾ h.p. **DE DION**	£10 10
3½ h.p. **BROWN,** h.b. control, very powerful	£14 10
3½ h.p. **REX,** h.b. control	£8 10

£7 deposit and 10/- weekly secures—

2¾ h.p. Mag. **MINERVA,** chain drive	£16 10
3½ h.p. Magneto **SINGER**	£15 10
Four-cylinder **F.N.,** magneto	£19 19
3½ h.p. Magneto **REX**	£19 19
Twin **MOTO-REVE**	£19 19
F.N. Magneto Lightweight	£19 19
3½ h.p. Magneto **EXCELSIOR**	£16 10
2½ h.p. **REX** Magneto Lightweight	£16 10

1911 REX BARGAINS. Makers' price. Ours.

3½ h.p. Rex Tourist	43 guineas	**34 guineas**
3½ h.p. Free-engine	48 guineas	**37 guineas**
3½ h.p. 2-speed de luxe	57 guineas	**46 guineas**
5 h.p. 2-speed de luxe	60 guineas	**49 guineas**

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Improved Quick Detachable Joints, cranked extra strong back axle and spindle, tip up body, and caged ball races to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

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1912 3½ h.p. Standard **BRADBURY,** NEW	£48 0
1912 2¾ h.p. Two-speed **REX** Junior, NEW	£45 0
1912 Twin **REX** Sidette. In stock. NEW	£75 0
1912 4 h.p. W.C. **REX** Sidette, NEW	£74 0
1911 Two speed **REX** Junior	£45 0
1911 3½ h.p. Tourist **REX,** done 750 miles	£32 10
SCOTT 2-speed, Aug., 1910	£37 10
1911 3½ h.p. 2-speed **HUMBER**	£38 10
1911 3½ h.p. 2-speed **BRADBURY,** as new	£42 10
1911 3½ h.p. **REX,** clutch model	£37 10
1911 5 h.p. Two-speed **REX DE LUXE**	£47 10
1910 7 h.p. Twin **REX,** HOT STUFF	£37 10
1910 5 h.p. Twin **REX,** NEW	£34 10
1910 3½ h.p. **REX,** very tast, special machine	£27 10
1910 **ROYAL ENFIELD,** smart	£22 10
5½ h.p. Two-speed Twin **ROC,** magneto, Druids	£32 10
Brand New 3½ h.p. **REX**	£27 10
3½ h.p. Two-speed **N.S.U.,** smart	£21 0
1908 3½ h.p. Magneto **REX,** spring forks	£22 10
3½ h.p. **REX,** very fine condition	£15 10
Four-cylinder **F.N.,** magneto, spring forks	£18 18
F.N. Magneto Lightweight	£16 10
3½ h.p. **WOLF,** Stevens engine, h.b. control	£12 10
3 h.p. **QUADRANT,** low frame	£10 10
2¾ h.p. **KERRY,** spring forks	£10 10
3½ h.p. Magneto **EXCELSIOR**	£16 10

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Brook's B100 Saddle	9/6
New Large Lycett's Saddle	9/6
Wicker Sidecar Body	10/6
Cane Sidecar Body, New	17/6
New Sidecar Aprons with studs	7/6
Plated Rex Pattern Handle-bars	6/6
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New Harrison's Backrest, usual price 12/6, ours	9/6

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1910 Scott and Sidecar, wind screen, and hood, back wheel re-built (stronger), 2½ tyre, 1911 radiator, 2 back sprockets, sidecar, and solo; £40, complete.—Wray, Southport.

3½ h.p. Free Engine London-Minerva, Bosch, B. and B., spring forks, re-enamelled and plated, £22; Millford sidecar, £4; both perfect.—479, Bury New Rd., Kersal, Manchester.

1911 Premier, £34; 1911 Bradbury, £35; 1910 Triumph, £35; 1910 P. and M., £38; 1912 Triumphs, P. and M.'s, Bradburys, Ivy motor cycles.—T. Reed, Nettlesworth.

DOUGLAS, 1911, single speed, excellent condition, ridden 2,000 miles, Avon tyres, Watawata, Jones speedometer, lamp, and spares; £30.—Lyall, 30, Kingston Rd., Didsbury, Manchester.

ONE New 1911 Enfield, 2-speed, free engine, chain drive, slight-soiled, sell cheap; one Imperial Triumph, 3½h.p., with magneto, sound condition, sell cheap.—Parkinson and Co., Rawtenstall.

1912 Rudge, free engine, h.b.c. to magneto, Senspray carburetter, Kempshall back, lamp, and horn, only done 30 miles; cost £58/18, what offers?—3, Elm Grove, Prestwich, Manchester.

PREMIER Motor Cycle for sale, Millennium 2-speed, free engine, new June, 1911; cash offers, or exchange for new machine of approved make, pay cash difference.—J. Langton, 26, High St., Chorley.

RUDGE, new last September, free engine, not run a thousand miles, complete with lamp, horn, tools, and brand new Mills-Fulford sidecar; price 54 guineas.—Lieut. Warren, c/o Waite Barrett, Weardley, Harewood, Leeds.

3½ h.p. Free Engine Singer, delivered from works August, 1911, Kempshall back, Dunlop front, unpunctured, whole condition as new; £40; owner buying 4h.p. Singer.—Ernest Clow, 52, Storey Sq., Barrow-in-Furness.

1909 5-6h.p. 4-cyl. F.N., latest automatic carburetter, central intake, magneto, new Michelin Trident on back wheel, perfect condition, with oilskin suit, and new waterproof suit; £25.—4, Vicarage St., Hollinwood, Oldham.

1911 Douglas, 2-speed, free engine, not ridden 1,000 miles, cost with Powell and Hanmer lamp, horn, extra chain to gears, Veeder trip cyclometer, all spares, £50, sell £36; like new, tyres splendid.—Box No. 205, *The Motor Cycle* Offices, Coventry.

5 h.p. Rex de Luxe, 1910, June, coach-built sidette, very little used, magneto, 2 speeds and free, Whittle, 2 lamps, Jones speedometer, specially strong back wheel with Kempshall, new spare Dunlop and tube; illness reason for sale; £55, or near.—Radcliffe, Stubley, Littleborough.

GREAT Sale of motor cycles.—3½h.p. Rex, £7/10; 4h.p. Chater-Lea, magneto, spring forks, B. and B., £12; 3h.p. Triumph, £9; 1909 Douglas, £18/10; 1911 Kerry-Abingdon, £28; 5-6h.p. Rex, 1909, twin-cyl., free engine, and sidecar, £25, worth £40; 1908 Triumph, new condition, £25; P. and M., nearly new, 2-speed, free engine, £37/10; we have about 60 second-hand motor bikes in stock, consisting of 1907, 1908, 1909, 1910 Triumphs, prices from £15; several Bradburys, Singers, Moto-Reves; all machines sold are warranted in good order; sidecars from 50/-.—The Motor Cycle Exchange, 160, Young St., Sheffield.

NORTHERN Depot, Ltd., everything motorish, 21 and 23, Leece St., Liverpool, beg to announce that they have purchased the entire stock of motor clothing from the Dunlop Rubber Co., Ltd., of Leece St., Liverpool, and in future will carry a very heavy assortment of these celebrated garments. Full ranges of Brooks motor adjuncts stocked, all Al'All saddles stocked, all F.R.S., Lucas, and Miller's lamps stocked, all H. A. Hunt's specialities stocked, 13 types Lodge plugs stocked, Price's, Wakefield, Vacuum, G. B. Dicke, Havoline and Packard oils stocked, all Bluemel's accessories stocked; in short, all specialities of the leading firms on show. No waiting while one odd article is obtained. Special display of hundreds of the finest Sheffield tools (Footprint) specially designed for motorists. Special stockists for the Avon India Rubber Co.'s tyres, all patterns on view. The largest stock of motor parts of repute in this part of the country. Machines in stock, all new 1912 models: Clutch Triumph, clutch Kerry-Abingdon, also 2-speed 8h.p. Rex-Jap de luxe, Clynn, 1911 clutch Rudge and Millford £50. This week's special bargain: Brand new 1912 2h.p. Humber lightweight, £34. Sole agents Kerry-Abingdon, Rex-Jap, Auto-Carriers, and Zebra 2-seaters, also the gentleman's motor cycle suit, the Deluge, properly tailored and cut, price 47/6 suit, complete with best leather belt, cheaper quality 35/- suit, post free, guaranteed absolutely proof, yet contain no rubber. Special lines in 5 and 12gn. sidecars. Call and inspect. Machines sold on commission. Everything at London store prices.—Telephone: Royal 5029. Telegrams: Depend.

SECTION III.

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1912 Bradbury, quite new, tools; £46; offers; T.T. model wanted.—Banks, Etwall, Derby.

ROVER, 1912, 3½h.p., free engine, brand new.—Carroll, Brereton Green, Sandbach, Cheshire.

B.S.A., 1911, standard, new belt and tyre, equal to new; £35.—Moyle, Manor Lodge, Halesowen.

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RUDGE T.T. Model	£48 15
RUDGE F.E. Model	£55 0
ZENITH 6 h.p. Model	67 Gns
ZENITH 3½ h.p. Model	53 Gns
DOUGLAS L Lady's Model	£52 0
DOUGLAS J T.T. Model	£47 0
DOUGLAS G Standard Model	£41 0
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BRADBURY F.E. Model	£54 10
BRADBURY T.T. Model	£48 0
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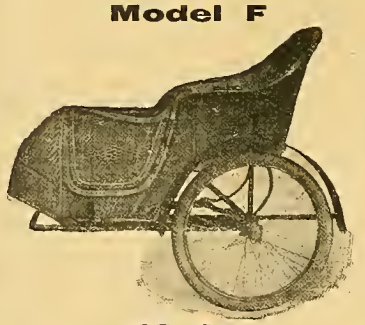
Undoubtedly this class of cane is far superior and more classy than ordinary cane or wicker work, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

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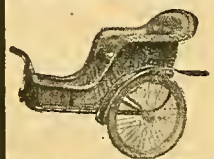
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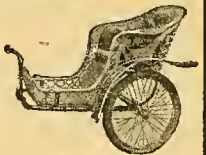


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Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID.

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We have a quantity of frames by well-known maker,
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Enamelled and plated in first-class style.

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Albion Clutch, fits Triumph	65/-
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Brooks B100 Saddle	9/6
Cocoa Fibre Sidecar Footmats	3/-

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1912 Triumph, clutch model, from stock.—Collier, 52, Somerset St., Abertillery.

1911 Standard Triumph, very carefully used, in splendid condition; £36.—Collier, 52, Somerset St., Abertillery.

1906 3½h.p. Triumph, fitted with new Simms magneto. B. and B. carburetter, Whittle belt, Clincher tyres, in splendid condition throughout; bargain, £21.—Collier, Abertillery.

1906 Quadrant, 3½h.p., spring forks, B. and B., Whittle, and adjustable pulley; £10.—Collier, 52, Somerset St., Abertillery.

ENFIELD, 1911, shop soiled, 2¾h.p., 2-speed, free engine; 45 guineas.—Oakley, Station Rd., Hednesford.

TRIUMPH, 1907, 1910 cylinder, etc., excellent condition; any trial, 2 up; £25.—Pinson, Codsall, Staffs.

1912 Clutch Triumph, in stock, £55; 1910 standard Triumph, £33. — Nelson, Gloddaeth St., Llandudno.

ARNO, 1910, 2¾h.p., Eisemann magneto, Druid forks, Dunlops; £20 cash.—Geoffrey Humble, Walton, Chesterfield.

1911 Singer 2h.p. Moto-Velo, magneto, Druids, lamp, horn, splendid condition; £24.—J. O. Jones, Oak St., Llangollen.

1911 B.S.A., as new, original Kempshall tyres, all accessories; any trial; £35, bargain.—Deane, Matlock Bath, Derbyshire.

3½h.p. Quadrant, 1910-11, free engine, guaranteed; any trial; what offers.—Harper, Daintry St., Oakhill, Stoke-on-Trent.

MOTOSACOCHE, magneto, Whittle, h.b.c., perfect condition; buying larger machine; £18/10.—Muir, Lyme Grove, Altrincham.

ARIEL, July, 1911, variable gear, free engine, perfect condition; £43 cash; seen by appointment.—Roberts, Ty Britb, Mold.

TRIUMPH, clutch model, just arrived, £55; New Hudson-Jap, 3-speed, 57 guineas; Singer, clutch model, as new, £45.—Miller, Craven Arms.

1911 3½h.p. Bat, not done 400 miles, complete with accessories, like new, and perfect throughout; £35.—T. W. Bentley, 159, Waterloo Rd., Burelem.

3½h.p. Excelsior, re-enamelled and plated, splendid condition, powerful, some parts new; £12/10, or lower power and cash.—Barratt, Fairfield, Buxton.

1910 Triumph, standard, new front tyre, back excellent, Lucas lamp, usual tools and spares; genuine bargain, £30. — T. Parsonage, jun., Sweetbriar Hall, Nantwich.

DOUGLAS, 1911, September, just overhauled, perfect condition, new rubber studded, spares, including inner tube, lamp, horn; £31.—Leake, Admaston, Shropshire.

ZENITH Gradua, 3½h.p., 1911, in perfect order, condition like new, Kempshall non-skid back, Hutchinson T.T. front, Service 1in. belt, extra mudguarding; £44.—Hurd, Kidsgrove, Staffs.

PHELON and Moore, 3½h.p., 1911 model motor cycle for disposal, lamp, horn, mud screen, and heaps spares, absolute new condition, ridden solo only; price £50.—Nutt, auctioneer, Clay Cross.

TRIUMPH, 1910, N.S.U. 2-speed gear, Dunlop and Kempshall, new Service belt, air springs, back rest, pump, horn, tools, spares; expert examination; 37 guineas.—Vickers, Newport, Salop.

SCOTT, 1910, first-rate condition throughout, overhauled last month, excellent Palmers, tools, horn, spring footboards; expert examination; cost £60, accept 37 guineas.—J. Vickers, Newport, Salop.

ZENITH Gradua, 3½h.p., only one left; the motor that is barred from most of the severe tests on account of its overwhelming superiority. — Paskells and Keys Motor Depot, 250, Stafford St., Walsall.

ZENITH Gradua, 6h.p. twin, 1911, new, delivered November, the only cycle for heavy sidecar work.—Paskells and Keys Motor Depot, 250, Stafford St., Walsall.

ZENITH-GRADUA, 1910, 3½h.p. J.A.P. engine, just thoroughly overhauled by makers, new tyre back, front hardly worn, excellent condition; £35.—W. G. Osborne, 25, Queen St., Wellington, Salop.

HUGH GIBSON'S End-to-end Sidecar Record-breaking Bradbury, fitted 1912 N.S.U. 2-speed gear, 2 spare covers, spare tube, etc., etc.; accept £38; no offers.—Box 218, *The Motor Cycle* Offices, Coventry.

MOTOSACOCHE, 1909, 1¼h.p., magneto, new May, 1910, Whittle, compression good, Olincher very good, Palmer back good, 160 miles gallon, climb any average hill unaided; £17/10, offers.—Knight, 130, Waterloo Rd., Wolverhampton.

MARSTON'S, Chester, have in stock 1912 multi Rudge; 1912 F.E. Rudge; 1912 F.E. Bradbury; 1912 F.E. Triumph; 1912 3½h.p. Zenith; 1912 2-speed A.J.S.; 1911 Indian, F.E., 6h.p., £40, nearly new; 1911 3½h.p. Zenith, £38, nearly new; 1911 6h.p. A.S.L., £33, nearly new; 1911 3½h.p. Rex, £28, nearly new; 1910 Royal Enfield twin, £26, perfect; 2¾h.p. lightweight Rex, £15, magneto; 4½h.p. Excelsior, £10, will take sidecar; 2¾h.p. Minerva, £6, modern fitments; special 1912 F.E. Bradbury, £60, new.—Note address, 26, Bridge St., Chester.

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1912 3½ h.p. **BRADBURY,** single-speed	£48 0
1912 3½ h.p. **BRADBURY,** 2 speeds	£55 0
1912 3½ h.p. **NEW HUDSON,** 3 speeds	67 Gns
1912 2¾ h.p. **NEW HUDSON,** 3 speeds	47 Gns

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1910 3½ h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
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3 h.p. 1908 Featherweight Rex, Bosch mag.	£17 0

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1906 5-6 h.p. Twin Rex	£16 10
5-6 h.p., Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, 2 speeds, M.O.V.	£48 0
5-6 h.p. de Luxe, 1908, 2-speed model	£28 0
5 6 h.p. de Luxe, 1908, 2 speeds, special	£29 10

OTHER MAKES.

1910 **P. and M.,** 2 speeds, fine goer	£32 0
1909 **MOTO-REVE,** twin engine, magneto, Druids	£20 0
1910 8 h.p. **BAT,** M.O.V., 2 speeds	£45 0
1¾ h.p. **WOLF,** magneto, spring forks	£15 0
1911 Lady's **HOBART,** Armstrong, 3-speed	£36 0
4½ h.p. **N.S.U.,** Bosch magneto, h.b. control	£21 0
3½ h.p. **P. and M.,** late 1908, 2 speeds	£28 0
3¾ h.p. Twin **PREMIER,** fine machine	£25 0
3 h.p. **TRIUMPH,** M.O.V., h.b. control	£17 0
5½ h.p. **N.S.U.,** 2 speeds and free engine	£25 0
1911 2½ h.p. **MOTOSACOCHE,** magneto	£27 0
3½ h.p. **L.M.C.,** 1910 model	£25 0
3½ h.p. **MINERVA,** Bosch magneto, Amac.	£22 0
4 h.p. **ANTOINE,** M.O.V., B. & B. Carburetter	£12 0

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All fitted with magneto and spring forks.

£3 DOWN — SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

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5-6 h.p. Twin **REX,** splendid goer	£16 10
3 h.p. **TRIUMPH,** M.O.V., h.b. control	£17 0
4 h.p. **ANTOINE,** M.O.V., h.b. control	£12 10

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Duocar, Bosch magneto	£45 0

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1912 B. and B. Carburetters, variable jets	28/6
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Montgomery Sidecar, 26in. wheel	£2 10
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Rex Pattern Belt Rim Brake (new)	8/6
Lycett's Carrier Toolbags (new)	7/6
Sidecar Lamps, show red light behind	7/6
Trailer, 26in. wheels	25/-
New Toolbags, 9×6×3½in.	4/6
Sidecar Aprons, green or red, with studs	7/6
New Lycett's Tubular Carriers	4/11
Longuemare Carburetters	5/-

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THE MOTOR CYCLE

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ADDRESS: 20, TUDOR STREET, LONDON, E.C.

Motor Cycle Taxation.

TO-DAY the Treasury Committee on Horse-power Rating will hear the evidence of the Auto Cycle Union delegate on this important subject. This committee specially asked the A.C.U. to give evidence, and Mr. Archibald Sharp, whose technical knowledge renders him eligible for the work, has been chosen to attend the meeting. It is as well to point out that to many motor cyclists, especially the large number who ride cheaply purchased second-hand machines, the present taxes are inordinately high. £1 for the local taxation licence plus the 5s. driving licence and 5s. registration fee—£1 10s. in all and plus 3d. for every gallon of petrol he uses, make a big hole in the income of the man who has bought a second-hand machine for £10.

In proportion to the income of the average motor cyclist, and considering that the motor bicycle does but little more damage to the road than the pedal cycle, the tax is already a great deal too high. What seems to us a reasonably fair suggestion would be to leave the present tax as it is for all sizes of machines, and to allow the owners of machines of over two years old to pay half the present amount, over four years' old one quarter. There is also talk, we understand, of taxing two-stroke machines more heavily than those fitted with four-cycle engines. If this be so it is most unfair. The two-stroke engine, it is true, should develop theoretically double the power of the four-stroke engine, but we know very well in practice it does not. It is, moreover, young as regards the motor cycle industry, or at any rate its growth has not been rapid, and its development has been slow. Now it is beginning to revive, and promises to take a prominent part in the industry of the future. Weight for weight motor cycles are taxed far more highly than motor cars. 5s. per cwt. would be ample.

Unofficial Records Doomed.

FOLLOWING our leaderette of last week, we are pleased to see that the Auto Cycle Union has decided to take action with regard to all record performances which are not held under the competition rules of the Union. These record attempts were rapidly assuming a farcical position, and it was quite time that steps were taken to prevent too great prominence being given to accomplishments which would, if persisted in, have drawn ridicule on the pastime. If the General Committee of the A.C.U. endorse the views of the Competitions Committee, and we see no reason why they should not, the day of the unofficial record is doomed. As we have previously mentioned, there are many methods of securing publicity in connection with properly authenticated performances, as the A.C.U. is quite willing to check the reliability and power of any machine that is submitted to it, and to issue certificates showing exactly what the machine is capable of. Brooklands, the finest track probably in the world, exists for pure speed records. Speeds greatly in excess of the legal limit on public roads are not desirable, and as a proof of human stamina the long distance rides entailing day and night riding are in danger of being overdone. Ample proof is in existence that the motor cycle is as reliable as human skill can make it, and if anyone wants further to improve its capability for continuous travel let him devise an unpuncturable pneumatic tyre.



IN season—perhaps likewise out of season—I have in these pages besought my brethren of the motor cycle to stick together and to work together towards our common welfare, and now once more I make one last appeal to every single one of my readers to make one last little effort, assuring them, if they will but do this, there will be no cause for future worry—the victory will be won and the great sport of motor cycling will come into its own in one victorious jump, proving to the world at large—and to the military authorities in particular—that the motor cyclists are a great and united body, and constitute a force of public opinion and of military power that can no longer be disregarded.

The Military Aspect.

My opinion is that within one month of the mobilisation test referred to in *The Motor Cycle* on April 4th, an order will emanate from Whitehall allowing every Territorial Cyclist Battalion to enlist twenty motor cyclists, who will receive an allowance for petrol and wear and tear of machine; and within three months a still further order will issue from the same source, calling upon two thousand civilian motor cyclists to enrol their names as willing to serve their country in the event of a great crisis, and willing to come out at Army Manœuvres for special staff work, when ample financial allowances will be payable.

The Civilian Aspect.

But many of you will put forward the plea that you do not care a jot for matters military, but is that a reason why in this supreme moment you should withhold your support from your more patriotic brethren? "Just one more effort, Sooky," as dear old Dan Leno used to say in the pantomime. In one word I appeal to the civilian-minded motor cyclist to lend his brother a helping hand—help him to attain his heart's desire and the official recognition and status that he undoubtedly deserves, and most undoubtedly will attain if you will but help him on this one day—this day of supreme importance in the history of motor cycling. Apart from all question of appealing to your good-nature, surely this is a truly sporting and enjoyable test into which you are invited to enter—a test of which you yourself will feel proud. If you take part therein you will meet hundreds of motor cyclists from every part of the kingdom. Already competitors have sent in their names from every city, town, and county from the Solway Firth to the English Channel; from the German Ocean to the Irish Sea.

The Scheme Explained.

Every motor cyclist in England, Scotland, and Wales is invited to take part. Those who send in their names will receive by post the magic word to "mobilise" at the secret rendezvous. These summonses will be despatched in such a way as to enable every competitor to reach the selected spot on the Saturday afternoon. Here they will be inspected by General Thorneycroft, C.B., and a staff of officers, who will make notes on the condition of the machines, the distance travelled, and the times accomplished. Here also accommodation of every kind will be provided for those who desire it, to suit every condition of purse and pocket. Subsequently a list will be published and circulated giving the names, etc., of the hundred riders who are considered to have accomplished the most meritorious performance. Merit will not depend on any one factor of speed, distance, endurance, etc., but all of these will be taken into consideration.

How to Take Part in the Mobilisation.

In the first place follow the directions given on page 366 in *The Motor Cycle* of April 4th. You will then receive the order to mobilise on your own postcard, and this you will carefully hand in on arrival at the rendezvous to the officer on duty.

Although this mobilisation is being carried out under the auspices of the Legion of Cyclists, they are throwing the entry for the test open to everybody—which is rather sporting of them, but perhaps part of a wide-seeing policy, for undoubtedly the vast majority of those who compete will take that opportunity to join the Legion. In the past few weeks this new force in the world of wheels has sprung into a prominent place, and now has some hundred and twenty branches throughout the United Kingdom

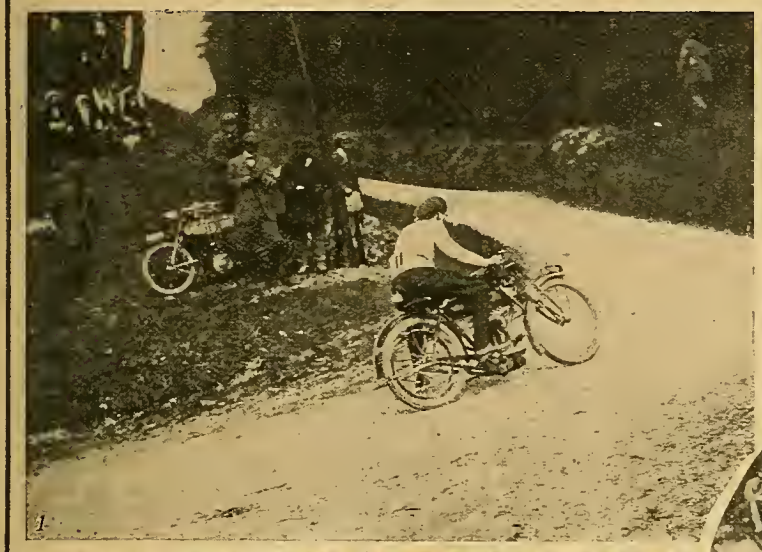
The object of the Legion is to organise in peace time those motor cyclists and cyclists who in case of an invasion would be willing to assist in the defence of their country. Not only are its members organised, but they are also given as many opportunities as they can desire to acquire military knowledge, so that when their services are needed they will be of some avail. Those desirous of joining should apply to the officer in their own locality or to the hon. secretary of the Legion, Captain A. H. Trapmann, 117, Piccadilly, W., enclosing a stamped and addressed envelope. Membership of the Legion entails no expense, and there is no subscription, but members must provide themselves with a badge of Legion (1s. 4d.), and later with the corps badge of their own locality (9d.)

The Future of the Legion.

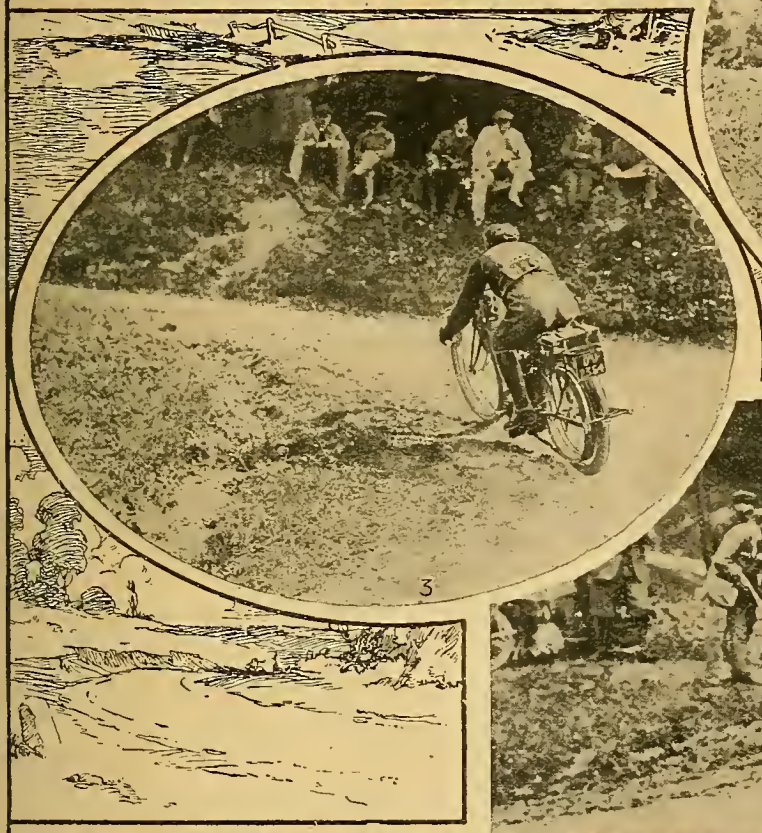
The Legion hopes in the course of the next few months to number at least ten thousand members, grouped into organised corps, each under its own officers and in close touch with the military authorities. It will then be in a position to supply not only the whole of the 2,000 motor cyclists which I have referred to above, but also corps of local cyclist guides, telegraphists, and other specialists for the Technical Reserve when at last that scheme is given to the public.

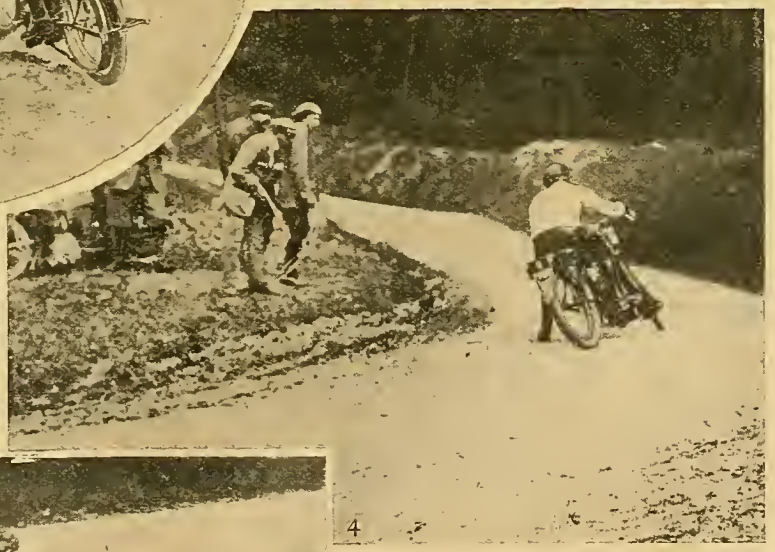
From time to time during the year great national rallies and gatherings will be organised by the Legion. In the meanwhile all motor cyclists are invited to join this great national movement. But those who wish to take part in the Mobilisation should apply at once.

Styles of Cornering at the Oxford MCC open Hill Climb



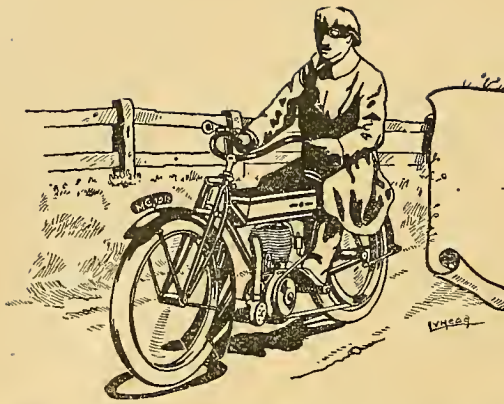








1. C. A. Stevenson (O.K. Precision).
2. H. Berwick (New Hudson).
3. W. F. Newsome (Triumph).
4. H. C. Newman (Ivy-Precision).
5. F. W. Barnes (Zenith).



IN PRAISE OF THE VARIABLE GEAR.

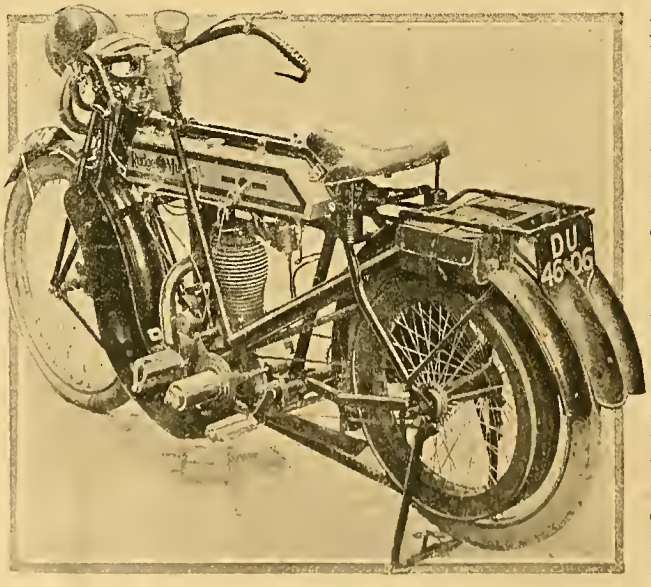
A TRIAL OF THE RUDGE MULTI.

THE more one studies the change speed gear question the more one is forced to the conclusion that an infinitely variable gear, that is between high and low limits, is the ideal in theory whatever its shortcomings may be in practice. Variable gears by means of expanding and contracting engine pulleys have been evolved by the dozen, but usually their designers have relied upon the movement of a single engine pulley flange only, which obviously has the effect of throwing the belt out of line when the ratios are varied, and this leads to undue wear of the belt. It was discussing the shortcomings of gears in this way that led Mr. Victor A. Holroyd, works manager of Rudge-Whitworth, Ltd., to invite us to use on an extended run a Rudge Multi, the variable gear of which has now undergone many thousands of miles of road testing in all weathers, and has further been rendered neater, lighter, and more compact than it appeared at the last Olympia Show. Mr. Holroyd proffered his own machine for our trial, and on the day arranged it was delivered to our offices, when we took an early opportunity of becoming acquainted with its management.

First Impressions.

First of all we should like to record our sincere thanks for its complete equipment. Unfortunately, we poor journalists are too often saddled with a new machine for trial devoid of toolbag, nay, even a tyre pump, and yet are expected to travel far and wide. To anyone personally acquainted with the owner of our trial mount, it will suffice to say that the machine was fitted out in true Holroyd style; to others we would say it lacked nothing a motor cycle should have on a 1,000 miles tour, and had a good many fittings one could well do without.

Now to the running of the machine. Starting the engine by the pedals and disengaging the clutch, one pushes the machine off the stand with the toes, and with the gear lever anywhere behind the central position of the quadrant, the clutch is engaged, and away the machine will go, picking up speed with astonishing celerity, thanks to the comparatively low gear ratio. The next operation is to suit the gear to the rider's desire, and there is a range of no less than twenty ratios all within the rider's reach. Think of it, ye speed lovers! a racing gear of 3½ to 1 for favourable stretches, and a 9 to 1 ratio for hills, and all this possible without a dismount and with very little added complication; in fact, nothing worse than a few pounds extra weight.



The 3½ h.p. Rudge Multi with which our test was made. The special mudguarding of this machine cannot fail to attract attention.

A Dream Fulfilled.

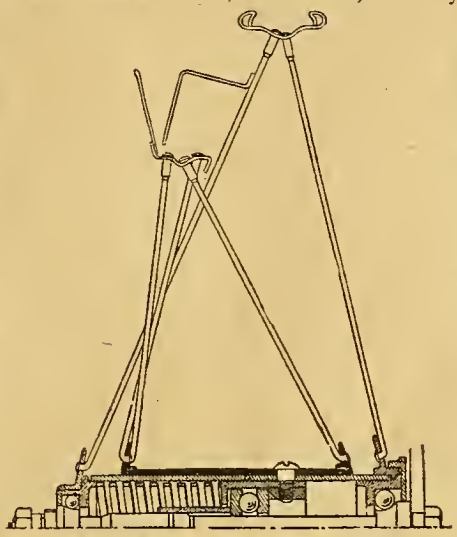
But what of the belt, asks the wary individual who has perhaps heard of rapid belt wear on variable pulley gears. We ourselves took particular notice of this question, and on our initial run from Coventry to Harrogate shortened the belt once *en route*, and again at Harrogate, but that was the last time, for the run home was accomplished non-stop, and several other shorter runs, making a total of about 260 miles without need for shortening the Dunlop belt, and we observed with satisfaction that the fastener ends of the belt were practically undamaged. Now this is an undoubted step forward.

What motor cyclist has not dreamed of a machine which will do twenty miles per hour on the level with the engine slowly ticking round, that is safe to crawl through traffic, and up single figure gradients on narrow twisty by-lanes, and yet have the capacity for tearing up hills on occasion when the conditions are favourable? Such a machine is among us; it is the Rudge Multi, and the man in the street is acquainted with the fact as the machine flashes past him, no! not solely on account of its healthy bark so much as the lettering on the tank. In connection with the noise of the exhaust we made rather an interesting experiment, to us at any rate. It is well-known that the Rudge has a liberal-sized cut-out, but as it also is of the variable pattern, it is possible

In Praise of the Variable Gear.—

to get any degree of noise from fairly silent to very noisy. Finding that the engine kept as cool as ever with the cut-out only half-open, we left it in that position, and no one could say that the machine was unduly noisy. Rudge owners read, mark, and inwardly digest.

Those readers who have experienced the delights of bowling along a favourable stretch of road on a high gear will appreciate the Rudge multiple speed gear; those who are used to touring day in and day out with a fixed gear of about 5 to 1 have pleasures in store. The sensation of hurtling through the air on a gear of 3½ to 1, the engine calmly turning over, is a real delight, and there is no lurking suspicion that "I believe I shall have to get off and lower the gear for —." A tug at the conveniently placed lever and the rider may drop to any of the nineteen ratios available; he does, in fact, suit the gear to the gradient. Some gears of the type under review are not efficient on the lower ratios, but as we have climbed Leathley Bank, Edge Hill, and Sunrising on the Rudge Multi with plenty in hand, such a suggestion in regard to this machine may be discounted.



Section of the rear hub of the Rudge Multi, showing the sliding sleeve.

Constructional Details.

Reverting to the question of belt wear, the reason the Rudge is not hard on belts is no secret at all. The operating lever expands the engine pulley by means of cams, and by the same movement contracts the rear pulley in unison. Thus the pulleys are always in line, and the belt is always at the same tension or approximately so. We reproduce a section of the rear hub and belt rim showing their construction. The rear wheel is built up with a special hub over which slides a sleeve. The fixed portion of the belt rim is attached to the wheel spokes, ut the loose flange is spoked to the sleeve. Five studs in the sleeve pass through slots in the wheel hub and into a bush, so that the drive on the loose flange is partly taken by the spokes of the wheel hub and partly by the studs. The bush is connected to a rod passing up the centre of the hollow axle, the control of the rod being governed by the movement of the cam disc of the engine pulley, so that a forward movement of the hand lever moves both the inner flange of the engine pulley and the outer flange of the rear pulley outwards. For "go-anywhere" work and occasional use with a sidecar the Rudge is eminently suitable.

ENGLISH-DUTCH RELIABILITY TRIAL.

The Complete List of British Entrants.

THE list of British entrants for the above contest as printed below has now been circulated among the secretaries of the leading motor cycle clubs throughout the country with a request that the matter be brought to the notice of their respective committees. We are asking the co-operation of clubs in choosing the British team, as we are desirous of obtaining an absolutely impartial selection. There will be three competitors in each class, and the votes will also determine the reserve men.

Club committees are asked to bear in mind the request of the organising body, the Dutch Motor Cycle Club, to vary the makes of motor cycles represented as far as possible.

It is expected that the replies from the clubs will be to hand by the middle of May, and the actual teams can be made known by the end of that month.

Dutch motor cyclists are taking up the trial enthusiastically, especially private owners. In this section there are fifteen entries.

Private Owners.

Class A. Machines up to 350 c.c.	Class B. Machines from 340 c.c. to 500 c.c.	Class C. Machines from 500 to 1,000 c.c.
Geoffrey Smith (2¾ Humber)	Vernon Taylor (3½ Rudge)	W. Cooper (3½ Bradbury)
J. C. Bennett Mitchell (2¾ Douglas)	Seymour Smith (3½ Norton)	W. O. Oldman (Bat)
H. M. Carter (2¾ Douglas)	Fred Dover (3½ Premier)	C. W. Wilson (Morgan runabout)
F. C. Wasley (2¾ Douglas)	A. E. Uffleman (3½ Humber)	Gordon B. McKechnie (8 Dot-Jap)
F. A. Hardy (Norton)	Richard Cussons (3½ New Hudson)	Horatio Wallis (2 speed Bradbury)
C. Maurice Down (2¾ Enfield)	E. Lester (3½ P. and M.)	H. C. Few (5-6 Clyno sc.)

Ladies' Section.

Mrs. A. Wade (3¾ Scott) | Mrs. C. C. Cooke (3½ Triumph)

Trade Team.

Class A. Machines up to 350 c.c.	Class B. Machines from 340 c.c. to 500 c.c.	Class C. Machines from 500 to 1,000 c.c.
W. W. Douglas (2¾ Douglas)	W. Pratt (3½ P. and M.)	F. W. Barnes (6 Zenith)
R. Holloway (2½ Premier)	J. Woodhouse (3½ Precision)	Hugh Gibson (3½ Bradbury)
Sam Wright (2¾ Humber)	W. F. Newsome (3½ Triumph)	W. H. Wells (7 Indian)
H. V. Colver (2¾ Enfield)	Roy W. Walker (3½ New Hudson)	Frank Smith (5-6 Clyno)
R. G. Mundy (2½ Singer)	F. C. North (3½ Ariel)	R. Lord (6 Rex sidette)
H. Graham Dixon (2¾ New Hudson)	Geo. Brough (3½ Brough)	F. A Applebee (3¾ Scott)
J. S. Holroyd (2½ Motosacoche)	J. H. Slaughter (3½ L.M.C.)	

Occasional Comments by "Ixion"



A Chaperone for the Scottish Trials.

Mr. Dickson, of Aberdeen, informs me that he intends to compete in the Scottish Trials, and that his wife will occupy the sidecar of his 8 h.p. Dot-Jap; so that any unmarried lady riders desirous of observing the proprieties may now rest assured that Mrs. Grundy will be satisfied.

It seems to me that it is the club's bounden duty to furnish a spare chaperone, and carry her on the official car. The responsibility at present laid upon Mrs. Dickson's shoulders is too great. What will happen if the 8 h.p. Dot-Jap should happen to drop out? Even if the club award gold medals to all ladies claiming full marks up to the moment of a chaperone's disappearance, the fair competitors will suffer the disappointment of being unable to complete the course.

I commend this burning problem to the attention of the M.C.P.A., which, I presume, imitates other "progressive bodies" in being suffragist, if not suffragette.

Sensitive Carburetters.

There are now several single-lever carburetters on the market, and I really wonder that some of the leading makers fail to realise how intensely these automatic vaporisers would appeal to perhaps fifty per cent. of the riding public.

I grant that with certain tunings any carburetter can be made quasi-automatic. But the usual tourist adjustment renders most two-lever carburetters excessively sensitive; and while this ultra-sensitiveness provides the opportunity of fierce joys to the expert, it is an unmitigated nuisance to the ordinary man.

I have just taken delivery of a beautifully tuned touring mount; it will not start easily except with a certain lever setting, which has to be learnt by experience; whenever it has to be slowed down in traffic, or on a hill, or round a corner, the air lever has to be brought back smartly to avoid a heart-breaking knock; while it is really a tricky business to obtain and to maintain correct mixture when the engine is roaring round at speed or up the foothills of a steep range.

These delicacies are the breath of life to me when I am in the saddle. I regard them as so many challenges to my intellect, and experience lurid joys in coping with them; but if I were a raw novice they would sicken me. They would lead to those involuntary dismounts in thick traffic and on the crucial knuckles of hills which set many a tyro against the pastime.

Now there are on the market several excellent one-lever carburetters which suffer from none of these delicacies, and provide almost as great a dynamic efficiency as my coquettish two-lever type. Why on earth do not the trade realise that half their customers would be better suited by an automatic carburetter, or at any rate a quasi-automatic setting of the two-lever type?

Drilled Pulleys.

When specifying a drilled pulley, it is well further to specify the gear ratio at which the holes shall operate. It is unsafe to drill a light pulley over the whole surface of the flanges, and if the selection of a gear be left to the makers, they will usually drill the holes at a height on the flanges which allows them to operate only for highish gears.

Now the holes are seldom urgently needed, except when a stiff hill has to be climbed in wet weather on a very low gear, say 5½ or 6 to 1; and, therefore, it is well to ask for the holes to be drilled low down on the flanges. A heavy pulley, however, may be drilled from top to bottom of the flanges.

Differentiated Valves.

Does anybody know why a certain famous engine maker, after using interchangeable inlet and exhaust valves for several years, has this year reverted to differentiated valves? Apparently the designer in question has come to the conclusion that it is impossible to construct a really satisfactory exhaust valve of the dimensions previously popular, for his 1912 exhaust valve has a much larger head and a thicker stem, and is much heavier than the inlet valve.

I hear of several users who were panic stricken when a rider broke his only exhaust valve and discovered that the spare was an inlet and did not fit. But the other kits luckily included spare exhausts, so that the stalled rider was sent on his way rejoicing. It would be interesting to hear if anybody has broken a standard type inlet valve on a first-class engine during the last two seasons. Personally, I find I break more overhead inlet valves than I have ever broken exhaust valves; but I have never within my memory snapped a "cheek by jowl" type of inlet valve.

To ask another question, has anybody unearthed a racing type of engine, with both overhead valves in the centre of the combustion head, which does not break its valves? The last engine of this type which I used became extremely perilous after about a thousand miles. Either valve, inlet or exhaust indifferently, was liable to emerge from the engine through the cylinder, or to descend into the engine through the piston head, with frightful velocity. Consequently I replaced the valves with new spares every 1,000 miles, until I encountered a sportsman willing to relieve me of the machine at a fair price.

The Value of Two-piece Footrests.

Details always enable the astute observer to identify the really brainy makers. I was studying two machines of different makes the other day, both of which possessed the new "drop" footrests, in which the pedal portion depends by a vertical arm from a short horizontal spindle higher up, to which it is attached in adjustable fashion by two notched faces and a lock nut.

One maker had collared the notion from a competitor in the most unintelligent fashion, without using

Occasional Comments—

an atom of intelligence—possibly he had none to use. At any rate he had utterly failed to see the possibilities of the little refinement. His upper spindle was of thin diameter, and of the same material as the vertical arm and pedal spindle. The vertical arm was 2½in. in length. I made enquiries among his customers, and found that if the machine was dropped one of two things happened—either the upper spindle bent, because it was no tougher or heavier than the lower spindle; or the screwed end of the upper spindle snapped off at the thread.

The other maker had a bubbling brain. His upper spindle was of stout, heavy stuff, and the lower spindle was of light steel of high tensile quality. As a result, when *this* machine was dropped, the lower spindle necessarily bore all the damage, which was thus confined to the smallest possible area, while its tensile quality enabled it to be readily straightened. Furthermore, the vertical drop-arm was 5in. long, so that a great range of adjustment, to suit riders of widely different heights, was possible. In such trifles must true greatness be sought and pursued.

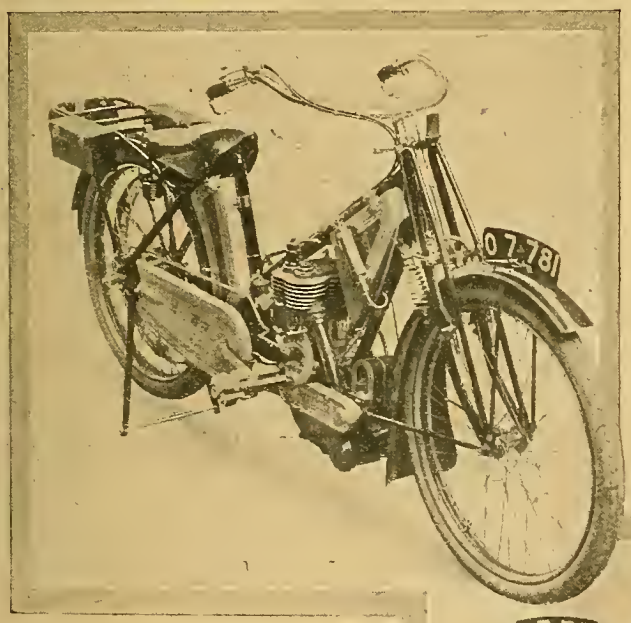
Waterproof Magnetos.

A humorous commentary on the ways of men is provided by the recent delivery to me of a machine fitted with the latest type of "flood-proof magneto," carefully protected by its assembler with a cumbrous waterproof shield. Such suspicion ought not to exist between assemblers and electrical supply makers.

Does the magneto maker lie when he calls the machine "waterproof"? Or is the motor cycle manufacturer so soured by twelve years' experience of the business that he disbelieves other firms' slogans? I must solve the question by getting the housemaid to douse buckets of water over the magneto while I run the engine on the stand. I suspect that the motor cycle manufacturer is simply fat-headed, so I suppress his name!

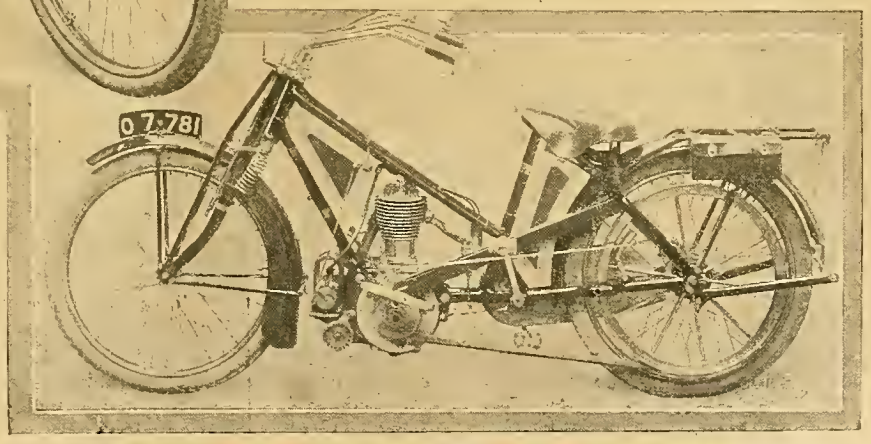
A New Brough Ladies' Model.

WE have recently had the opportunity of examining a very neat open frame model, manufactured by W. E. Brough and Co., of Basford, Nottingham. The engine has a bore of 85 mm. and stroke of 88 mm., and has low compression so as to be easy to start. The top frame is duplicated, giving ample strength even for sidecar work. Neatness of construction and sound design characterise the whole machine. Both pedal cranks are straight and set close together, which renders pedal starting easy. The cylinder is a particularly neat casting, and has good air spaces round the valve ports. Two petrol tanks are fitted, one combined with an oil tank in the forward part of the frame, and one behind the saddle tube; both are connected to a common petrol pipe. A Villiers hub clutch is fitted, and both belt and pedal chain are well guarded. The low saddle position and compact appearance will be gathered from the accompanying illustrations. This firm has devoted considerable attention to the manufacture of ladies' machines, and those who prefer a powerful mount will find their wishes catered for in the Brough.



A Fictitious Rumour.

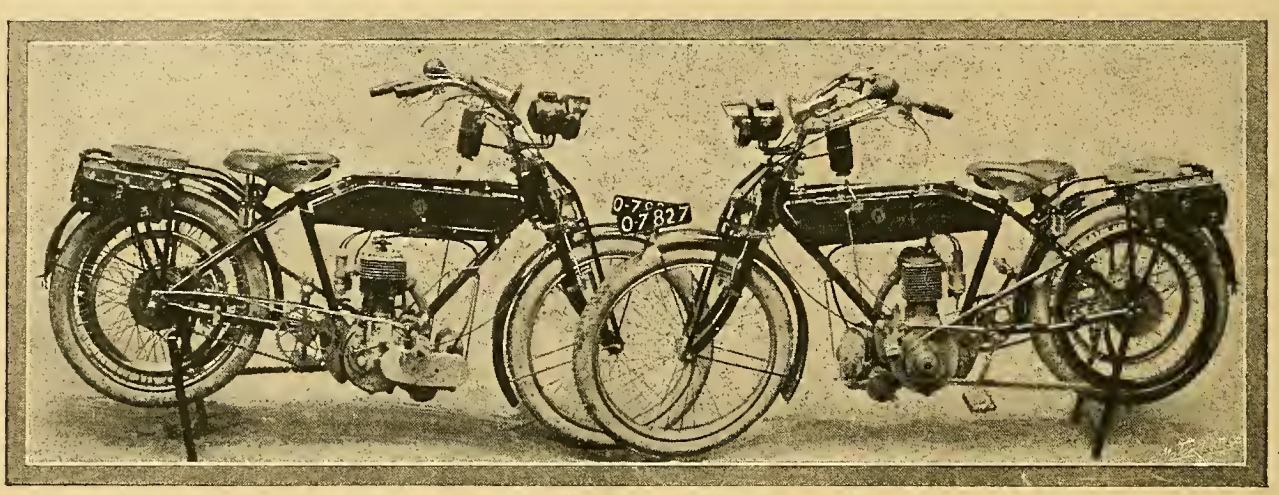
We have been asked to correct the report which has recently been circulated that W. E. Brough and Co. are not building their own engines. We can ourselves testify to the fact that we have seen the drawings, patterns, and castings in the rough of both twin and single Brough engines, and have seen the parts being machined and assembled. Moreover, there are several distinctive and original features in the 1912 Brough designs. We are asked to state that anyone is quite at liberty to prove the truth of these statements by a visit to the firm's works.



New lady's model Brough, fitted with 3½ h.p. single-cylinder engine and Villiers hub clutch.

ANOTHER NEW MODEL—THE HERCULES.

THE Hercules is a new motor cycle produced by the Hercules Cycle and Motor Cycle Co., of Coventry Street, Birmingham. The machine follows standard lines throughout, and may be fitted with 3½ and 4½ h.p. Precision and Sarolea engines. The frame has a dropped top tube, and is fitted with Saxon forks. Albion free engine or two-speed can be obtained to order. The tank is large and wide, and has a capacity of approximately two gallons. Lubrication is by tapless oil pump, but we understand that customers will, in future, be given the choice of a Best and Lloyd semi-automatic lubricator. Brown and Barlow carburetter and Bosch magneto, 2¼in. tyres and 1in. belts are included in the standard equipment. The whole machine, as will be agreed, has a neat and strong appearance.



Left and right side views of the new model 3½ h.p. Hercules-Precision.

MORE RECORDS FALL TO PRIVATE-OWNER'S PROWESS.

No more suitable day than Thursday, 18th inst., could have been chosen for record breaking. The sun shone warmly, its bright rays unhampered by any darkening shadow of an eclipse, while all around the track the trees were decked by the brilliant hues of early spring. Even in as good trim as Nature herself was Arthur Moorhouse's 7 h.p. Indian, 82.5 × 93 mm., 998 c.c. Timed by Mr. A. V. Ebblewhite, he accomplished a splendid performance, annexing seven records, four of which—250 miles, three, four, and five hours—are world's records, beating all American times.

Not the least wonderful part of Moorhouse's excellent ride was the marvellously consistent running of his machine. Between the 61st and the 68th laps his time only varied by ⅖s. Three consecutive laps were reeled off in 2m. 16⅖s. each—just under 72 m.p.h. Moorhouse stopped several times to change tyres and fill up his tanks, but the only untoward incident was the breakage of an oil pipe at the end of the four hours.

A. J. Moorhouse.		Previous best (Nov. 21st, 1911).	
Mls.	h. m. s.		h. m. s.
150 ...	2 16 18 ...	J. R. Haswell (Triumph) ...	2 26 34⅗
200 ...	3 1 54⅖ ...	J. R. Haswell (Triumph) ...	3 14 46⅘
250 ...	3 55 30 ...	W. L. T. Rhys (Rudge) ...	4 38 54⅕
Hrs.	mls. yds.		mls. yds.
2 ...	170 1,020 ...	J. R. Haswell (Triumph) ...	124 158
3 ...	197 1,271 ...	J. R. Haswell (Triumph) ...	184 1,388
4 ...	250 1,045 ...	J. R. Haswell (Triumph) ...	239 947
5 ...	277 950 ...	W. L. T. Rhys (Rudge) ...	268 154

AUTO CYCLE UNION NOTES.

THE NEW SECRETARY.—Mr. T. W. Loughborough, A.M.I.C.E., the new A.C.U. secretary, begins his duties on May 1st.

AFFILIATIONS AND MEMBERSHIP.—The following clubs have become affiliated to the governing body: The Dudley and District, the Wakefield, the Ashbourne, and the Wath and District Motor Cycle Clubs, and the Mersey Motor Club.

R.A.C. REPRESENTATIVES ON THE A.C.U. COMMITTEE.—The following gentlemen have been elected to represent the Royal Automobile Club on the Auto Cycle Union Committee: Major F. Lindsay-Lloyd, Capt. H. E. Davidson, R.E., Capt. D. F. Nicholl, R.A., and Messrs. R. Todd, J. R. Nisbet, D. C. Bolton, G. F. Sharp, E. M. P. Boileau, L. M. Meyrick-Jones, H. P. E. Harding, M. G. Duncan, and C. A. Smith.

REFLEX LIGHTS.—On the suggestion of the Surrey M.C.C., the A.C.U. has decided to confer with the R.A.C. regarding circularising the various district councils throughout the county on the advisability of compelling all vehicles to carry reflex lights at night, as has been done in Warwickshire and other counties.

THE TOURIST TROPHY RACES.—The final draft of the rules have now been approved by the Isle of Man authorities. The engine sizes are up to 350 c.c. for the junior race, and up to 500 c.c. for the senior. Owing to Saturday, June 29th, being a market day, practising will not be allowed on the morning of that day.

Ten Years' Experience of the Pastime.

By F. STRAIGHT, late Secretary A.C.U.

I HAVE often been asked how it was that I first came to take a hand in the organisation of motor cyclists, and how it was that I continued to stand by and to have faith in the future of the sport and pastime during the troublous times through which the industry passed in the years 1904 to 1906. One of the reasons I first took an interest in motor cycling is due to the fact that as an official handicapper of the National Cyclists' Union I was in constant touch with sports promoters on the look out for means of increasing their gate.

During 1902 I had handicapped several motor cycle races at Canning Town, and seeing the amount of interest I was taking in the new type of vehicle, the Automobile Club approached me with a view to organising a motor cycle section of the Club, with the result that in January, 1903, I was to be found installed on the Club premises in charge of the motor cycle section.

The year 1902 was a very important one from a racing point of view. Races were held on the following tracks: Aston, Canning Town, Coventry, Plymouth, Putney, and Uxbridge. In the same year at the Crystal Palace Motor Show, February 14th to 22nd, a motor cycle section was arranged, and Ariel, Excelsior, Minerva, Quadrant, Mitchell, Derby, Chapelle, New Hudson, Phœnix, Humber, Werner, and several other machines were on view, whilst trial machines were running in the grounds.

It was in August of the same year that the Automobile Club held the first purely motor cycle race meeting on the Crystal Palace Track. One of the events was the hour scratch race in which C. Jarrott, T. H. Tessier, H. Martin, F. W. Chase, E. J. Steele, and J. Van Hooydonk were competitors. Jarrott, who was riding an 8 h.p. De Dion tricycle, experienced a lot of trouble, and finally retired, the winner being J. Van Hooydonk, who, of course, rode a Phœnix and covered 42 miles 290 yards in the hour, winning by over four laps.



The writer.

A Weird Scene at the Crystal Palace.

Perhaps, however, the most exciting event at this meeting was a ten miles handicap, which was run in one heat. There were twenty riders, and the present day motor cyclist can imagine what an extraordinary scene was presented with so many riders on a small track. The roar of the engines was deafening, and the pace at that time was considered terrifying. Some of the competitors had their exhaust boxes glowing a bright red, and this in the gathering darkness looked very weird, and I have certainly never seen anything to approach it since.

Soon after I took up my duties at the Automobile Club steps were taken to organise a club which would take over the complete control of motor cycling under the auspices of the A.C.G.B.I. This resulted in the formation of the A.C.C. The idea occurred to me soon after the formation of the A.C.C. to promote a long distance reliability trial, to which the committee agreed, and the first 1,000 Miles Trial was the outcome. It extended over a fortnight, the first day being taken up with the weighing and other preliminaries, whilst the last day consisted of a speed trial on the Crystal Palace Track. The Crystal Palace was chosen as the centre for these trials, and in the grounds was erected a huge marquee for the accommodation of the competitors' machines, which at the close of each day's run were placed there in charge of officials who were on duty all night.

Unfortunately, the weather was of the most dreadful description, rain falling heavily almost every day, with the result that the ground became sodden, and the interior of the marquee was nothing but a quagmire. Fortunately the competitors took matters very philosophically.

In view of the suggestion recently made in *The Motor Cycle* that the concluding day of the 1912 Trials should consist of a long distance test at Brooklands, it is worthy of note that in 1903 the competitors on the last day of the Trials had to ride five miles on the Crystal Palace Track.

First International Cup Race.

The first competition for the International Cup, which was held on French roads in 1904, was not by any means a British success. Our team consisted of H. Rignold, W. Hodgkinson, and T. Silver, the first-named being the only one to complete even one lap. This race was chiefly notable for the fact that somebody had lavishly strewn the course with nails, and tyre after tyre came to utter grief.

The following year an eliminating trial was held in the Isle of Man, and for some reason or other the start had been fixed for 3 a.m. The weather at that time, however, was very hazy, and it was decided to delay the start for half an hour. One of the conditions was that machines should not exceed 110 lbs. in weight, and it was amusing to see the riders when their machines were put on the scales and found to be overweight filing away all possible parts in order to reduce the weight. The rubbers were taken off the pedals, side plates discarded, holes bored in the pulleys and belt rims; in fact, the majority of machines were so weakened that it was not to be wondered at

Ten Years' Experience of the Pastime.—

that only two completed the course, viz., J. S. Campbell (6 h.p. Ariel) and H. A. Collier (6 h.p. Matchless), the former winning by 1m. 16s. over a distance of 120 miles, which was covered in 4h. 9m. 36s. George Barnes was one of the competitors in this race. He made a very brilliant start from Quarter Bridge, darting away like a shot out of a gun, but we saw nothing more of him, and it was reported that at the first bad corner he was travelling too fast to get round, so went straight on and in at the door of a cottage.

Reminiscences of Bygone Trials.

It was in the Six Days' Trials of 1905, when they were held in the West and South-west of England, starting from and finishing in London, that I had two instances of what a keen rider will do in pursuit of his favourite hobby. The first instance to which I refer is that of F. W. Applebee, who, not wishing to compete, very kindly offered to officiate, and to him was given the unthankful task of riding behind the competitors and reporting at night upon the stragglers. I well remember how on one or two occasions he reported himself to me at the hotel in the early hours of the morning with a modest and cheery, "Well, I've got here," without a complaint against those riders who had been the cause of his late arrival.

On another occasion I rode with him from London to Great Yarmouth, and on the return journey, soon after leaving Lowestoft, something went wrong with the machine I was riding, which neither of us could locate. He would not hear of leaving me behind, and eventually towed me all the way to London.

I have often wondered how, in the early days of competitions, when machines were far from reliable, busy business men would enter for the Six Days' Trials and take them as part of their summer holidays. It was in the 1905 Trials that A. V. Baxter, a Warrington rider, told me that he was taking his holiday that way. Well, I have never seen a man work so hard before or since on a holiday. I think Baxter had all the troubles that could possibly befall a motor cyclist on that trip.

It was in the first Land's End to John-o'-Groat's Trial (1906) that Miss Muriel Hind made her first appearance in a long distance event. Early on the Sunday morning previous to the start, the noise of a tricar was heard outside the hotel, and we found that Miss Hind had arrived, having driven through the night alone, the lateness of her arrival being due to the fact that she had been rendering assistance the previous evening to another competitor who had met with a mishap on the way down and had to be left in charge of a doctor.

Of course, such a trial as this is full of incidents, but one feature of the event which appealed particularly to me was the fact that after the trial was over, and we were on our way back to London on the following day (Sunday), we met competitors on the Ord of Caithness still making their way to John-o'-Groat's, determined to complete the trial over the classic route even if they were a day behind time.

What we Owe to the Magneto.

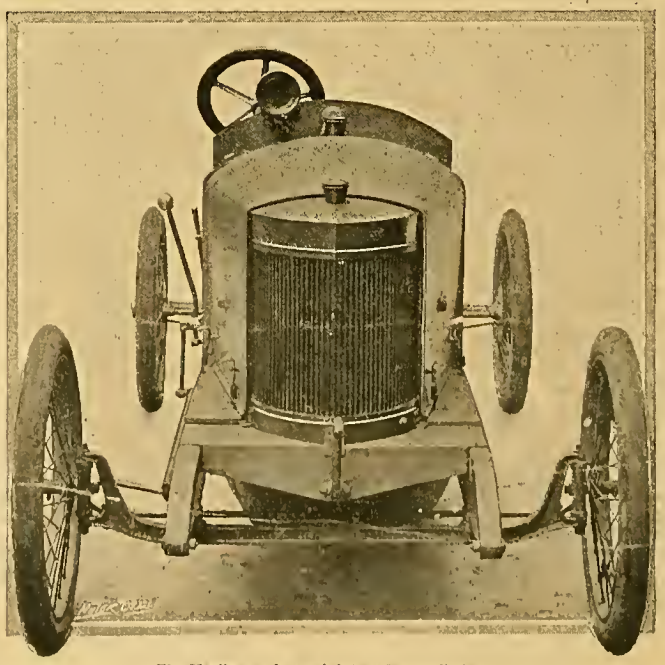
There is no doubt that the introduction of the high-tension magneto in such a reliable form as we have it to-day and have experienced it from about 1905-1906 has been the salvation of the motor cycle. In the early days most of our troubles were caused through faulty ignition, due very often, it must be admitted, to carelessness in not properly looking after the accumulators.

The more recent happenings in the motor cycle world are comparatively fresh in the minds of the majority of my readers, so there is no need for me to recapitulate them, but I can assure present day riders that, although we experienced a lot of trouble in the early days, we got a very great deal of amusement and enjoyment out of our favourite hobby.

A FOUR-CYLINDERED CYCLECAR.

THE FIRST OF ITS TYPE.

The cyclecar class is, we understand, about to receive a new entrant into its midst in the shape of the new small Marlborough car, sold by Messrs. T. B. André and Co., 5, Dering Street, New Bond Street, W., which is an exact *facsimile* in miniature of a up-to-date motor car. It is fitted with a four-cylinder monobloc engine 60 × 100 mm., but we understand that a model is to be built fitted with an engine of 55 mm. bore, which will bring it just within the 1,100 c.c. limit, while the chassis weight does not, we understand, exceed 6 cwts. The Marlborough is, of course, rather more expensive than the ordinary type of cyclecar, in that it is far more a car than a cycle as in design it follows standard car lines throughout; it is one of those vehicles which could be purchased with confidence that it will give the greatest satisfaction to its owner. The engine is water-cooled and has a racy-looking V-type radiator, as will be seen from the accompanying illustration. It will be obvious to all motor cyclists that an evenly balanced four-cylinder engine is likely to be very successful in a cyclecar, as a light vehicle of this type is subjected to considerably more road vibration than heavier cars which hold the road better.



The Marlborough, a miniature four-cylinder car.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street E.C., and should be accompanied by the writer's full name and address.

A Long Tour on Lightweights.

Sir,—The enclosed print of my wife and myself may interest you. It was taken at the commencement of a six weeks' holiday in North Wales, during which we covered about 600 miles, climbing both Aberglaslyn and Llanberis Passes.

At no time did the machines receive any attention, excepting tyres and the twisted belt on the lady's.



Photograph accompanying "H.C.'s" letter.

As my wife had never ridden a motor cycle before this tour, and my machine was an absolutely new and untried one, I think this speaks volumes for the Motosacoches on which we were mounted. H.C.

The Sidecar and the Coal Strike.

Sir,—In consequence of the coal strike, a large number of trains in various parts of the country were suspended, and nowhere was this more so than in the Manchester district. As a result, the morning mails from Manchester to Glazebury and Kenyon were interfered with, and as no coaches run in the direction of these places the mails had to circulate *via* Leigh; at this point the mails were met by the Brothers Timms with their motor cycle and sidecar and conveyed to their destination. The enclosed is a photograph taken on the 12th inst. F. TIMMS.

Hydrogen Peroxide in Acetylene Generators.

Sir,—I notice in your issue of April 11th that you are still having correspondence on the employment of peroxide of hydrogen in acetylene generators

I should like to draw your readers' attention to the fact that by an Order in Council, dated May 15th, 1900, it is illegal to use peroxide of hydrogen in the water of an acetylene generator As your readers will know, the use of peroxide of hydrogen results in the acteylene gas being mixed with a small quantity of oxygen. The following is an extract from the Order in Council above referred to:

"Acetylene when in admixture with atmospheric air or with oxygen gas in whatever proportion and at whatever pressure and whether or not in admixture with other substances shall be deemed to be an explosive within the meaning of the Explosive Act.

"And whereas it is in the judgment of Her Majesty expedient for the public safety that acetylene in admixture with air or oxygen, when an explosive within the meaning of this Order, shall be prohibited."

I shall be pleased if you can see your way to publish this letter, as, in the interests of the acetylene industry, I am desirous that the practice of using peroxide of hydrogen in acetylene generators should be discontinued.

H. S. SMITH,
ACETYLENE PUBLICITY, LTD.

Compression Ratio.

Sir,—I was much interested in your article on the above subject. I have used a system for several years which I consider is at least as simple and probably more accurate than the majority of methods. All the apparatus necessary is a quantity of the usual cylinder oil and a glass measure, the size I use myself being a photographic measure of one pint capacity and costing 1s.

The method is as follows: Thoroughly decarbonise the combustion space, and assemble the engine, less the tappets and centre plug of the cylinder, and bring the piston to top of stroke. Heat the oil and carefully fill the measuring glass with the same. Fill the combustion space with this oil, rocking the engine meanwhile to dispel all air. When this is completed, read off on the scale on the glass measure the quantity of oil used. Bring the piston to the bottom of stroke, and proceed as before. Compare the ratio that the first named quantity bears to the second, and the result will be the ratio of compression. L.F.P.

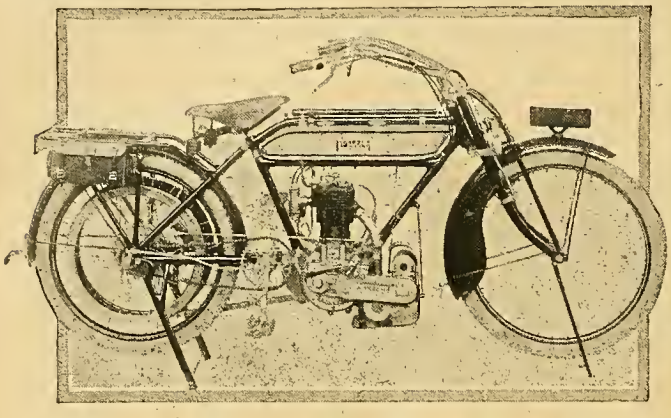
[This method is very similar to the shot system described by our contributor.—ED.]



Sidecarists who conveyed the mails from Manchester to Glazebury during the coal strike.

Another Episode of the Coal Strike.

Sir,—No doubt during the recent strike you have received dozens of letters regarding the use of motor cycles for business and pleasure purposes, but, nevertheless, I would add my experiences.



A neat-looking but comparatively unknown make—the Monarch.

On Saturday, March 30th, I had instructions to go to Dundee from Hull, but, owing to the difficulty of getting through by rail, I decided to go by road, leaving on Sunday at breakfast time. In addition to extra clothing, I carried nearly a hundredweight of goods, part on the carrier, and the remainder on the handle-bars.

It rained at starting, but afterwards brightened, and I quite thought I should have a nice ride. However, I was very much mistaken, as it never stopped raining until I reached Berwick-on-Tweed at 7 p.m. It was a gruelling ride, and belt-slipping made matters worse, and I was very grateful to my Hutchinsons for standing to their work. I had a skid at York which bent my footrest and broke some glass that I carried, and a pedal. I stayed the night at East Linton, and got to Edinburgh early on Monday. The ferry people refused the machine at Granton, so I started for Queen's Ferry. Before reaching it, however, I met friends, and so did not cross until 2.45 p.m. I made a call at Cupar, Fife, and this made me miss the 5.30 ferry from Newport by a few minutes, but still I reached Dundee in good time.

After finishing my work, I started on the return journey on April 7th. The ferries took up a lot of time, but I reached Edinburgh in time for dinner. Sundry calls delayed my start, but eventually I made a non-stop to Berwick in the rain, and soon after I gave in and hoped for a better day on Monday.

Those who had the misfortune to be out on Easter Monday know what my ride must have been. Three times I was blown over, and just outside Darlington a tree fell on me. Fortunately, it was rotten and shattered into hundreds of pieces without doing any damage. A little further on I had my first puncture. After that all went well until within twenty miles of Hull, when I punctured again. This time I was not so fortunate in getting away, so put in my spare. Eventually I reached home little the worse for the worst ride I have ever had.

Throughout the whole time my Monarch pulled finely, and the only miss was when my coat got on to the plug.

I enclose a photograph of my machine, which I do not think is as well known as it might be. Its many sterling qualities induce me to say I would never go by rail again if I could get there on my motor cycle. S.M.G.

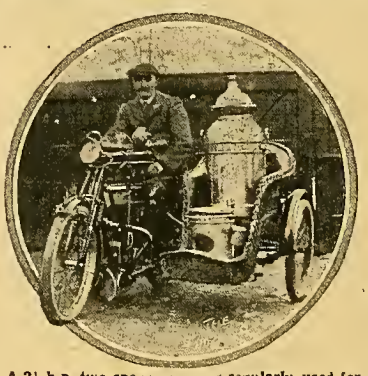
Consumption Comparisons.

Sir,—I have read Mr. Pickett's letter with some interest, although I have tried no experiments so far on my cycle. The results I have obtained in my motor boat with petrol consumption may throw some light on the matter. The boat is a 4 h.p. Daimler (old type) fitted with the same carburetter as the company apparently supplied with the motor. I was not satisfied with the petrol consumption, and had considerable trouble with valves and plugs. We did a good deal of experimenting with the old carburetter, but got very little better results. We then decided to scrap it, and in its place fitted an American make of carburetter with a central jet, this being quite common with boat work, as the level of the petrol in the jet is independent of the level of the boat.

We then fitted a silencer close to the engine, and made a jacket for it, and from this jacket supplied hot air to the carburetter. If this new carburetter be supplied with cold air the results are very little different from the old one, but with hot air the saving in petrol is most marked.

For the previous year the petrol cost £1 15s. 6d., for last summer it was reduced to 11s. 4d. The boat was not used quite so late in the summer as the previous year; but, owing to the brilliant weather last summer, while I was able to use it, it had a lot of use. I estimate the saving to be about 50%, probably more, and we had no trouble with valves or plugs. The air supplying the carburetter is so hot that it is not possible comfortably to bear the hand on the pipe, while the pipe from the carburetter to the engine is about the temperature of the surrounding air, showing that a lot of heat is being absorbed in the gas-making process.

My theory is that now the engine is being fed with a true gas, easily exploded, with perfect combustion; before it was getting a damp vapour with imperfect combustion. The majority of motor car carburetters are fitted with hot air pipes, and all the air passing the jet is heated, only the extra air being cold, and I am inclined to think this has more to do with their greater efficiency than water-cooling the engine. Anyway, as I am not satisfied with my present consumption of petrol in the motor cycle, I am going to try some experiments on similar lines. K.



A 3½ h.p. two-speed Humber regularly used for delivery of milk.

The Sidecar for Milk Delivery.

Sir,—Enclosed is a photograph showing the utility of the motor cycle. The owner, Mr. Edwards, of Kington, Herefordshire, has been using the 3½ h.p. two-speed Humber and sidecar for the purposes of delivering milk daily.

By this means he is able to dispense with a horse and trap, which would otherwise be required.

E. M. TURNER.

Disqualifications at Leathley Bank.

Sir,—I am writing in the hope that you will find room for the following statement in regard to the facts leading up to my disqualification in the standard single-cylinder class at the hill-climb recently held by the Harrogate and District and Herts. County M.C.C.'s. It will be remembered that I won in this class, making the climb in 63½s. I rode the same machine which I have used throughout the whole of last year, the present season, and also during the winter; it is a strictly standard Ivy machine, and I think I can claim



More married couples who motor cycle—the Rev. and Mrs. H. Stanley Tibbs. The machines are a Triumph and a Douglas.

to have been almost religiously careful with regard to its equipment.

I have invariably ridden the machine with ordinary upturned handle-bars, footboards, shield for the magneto, mudguards, tool bags, the machine being, in fact, an exact replica of a standard Ivy.

These facts were duly pointed out to the officials, but the only satisfaction I got was a statement to the effect that no ordinary touring engine could climb the hill in the time that I took, so that, presumably, had I made this climb at a slower speed, I could still have won and not have suffered the indignity of disqualification. I now wish to state that the engine was a standard competition Ivy-Precision engine, and that it does not vary in the slightest degree from those fitted to the machines we sell, except in so far that it has seen a good deal more work than most.

It seems to me distinctly unfair ruling that a rider should lose the result of his care and experience because of efficiency which is apparently above the normal.

H. C. NEWMAN.

Clashing of Dates.

Sir,—I notice a paragraph in the "Current Chat" page of your issue of last week referring to the clashing of the passenger trial arranged by my club—the North-West London M.C.C.—with that organised by the Birmingham Club.

I should be glad if you would publish this letter in order to make it quite clear that this unfortunate clashing was not in any way due to my committee, as the original date of the fixture was settled at the meeting of secretaries at Olympia in November.

We have always made a point of avoiding interfering with other clubs' affairs as much as possible, and when, in spite of the date being approved at this meeting, another club fixed a trial for the same day, we applied in January to the A.C.U. to have our date altered to May 18th, which, at that time, was an entirely open date. The permit was granted to my club quite a long time ago, and I trust you will make this clear so that the Birmingham Club will not feel that we have intentionally arranged anything which would be likely to interfere with the success of their own competition in regard to which we wish them the best results.

It seems to me that some arrangement might be made in regard to protecting the interests of clubs in such matters. The meeting of secretaries at the Olympia was intended for this purpose, but, judging by what transpires each year, very few feel morally bound by the arrangements.

H. J. POOLEY,
Captain North-West London M.C.C.

Three and Four-wheeled Cyclecars.

Sir,—It would appear from Mr. H. George Morgan's letter in last week's issue of your paper, that there is nothing on four wheels that is any good whatever, and that the *summum bonum* of all self-propelled vehicles is embodied in the three-wheeler. I notice that he says that anybody who has driven a three-wheeler and a four-wheeler is entitled to give his opinion, which will differ from the opinions of other writers, and then proceeds to give us so-called facts, which he says may be more useful than theories.

He says, firstly, "A three-wheeler won very easily the only cyclecar race yet held at a speed of about 59 m.p.h., the three-wheeler, in fact, 'first' and the rest nowhere."

This is perfectly true, as I myself witnessed the race, but Mr. Morgan omits to say that the three-wheeler was fitted with a special J.A.P. engine giving over 14 h.p., fitted with overhead valves, and was, in fact, an absolute racing vehicle. One is perfectly willing to admit his second point, that his three-wheeler was absolutely steady, whereas the only four-wheeler which approached it in speed, as he says, "snaked" badly, and finally turned over. One admits that this vehicle, being an old pattern four-wheeler, was much too lightly built for racing purposes, but the point is open to doubt whether it would have turned over had not the front tyre on the right wheel burst.

His third point, that because no four-wheeled vehicles have been entered for officially long distance reliability trials, is no criterion that four-wheelers are not as reliable as any three-wheeler.

W. H. STIRLING.

[We have received other letters on this subject written under the assumption that the writer of the letter published last week is the maker of the Morgan cyclecar. His initials, however, are H. F. S., not H. G. Morgan.—ED.]

Carrying a Camera.

Sir,—I am thinking of carrying my camera (Klimax with Ross lens) on the top tube of my motor cycle. I intend making a box exactly to fit it, and should like any suggestions from other riders who carry cameras. Also I should like to know if the lens will be damaged by the vibration.

GORDON M. WILSON.

[The general opinion of those who combine motor cycling with photography is that the best place to carry a camera is slung on the rider's back.—ED.]

Pillion Seats.

Sir,—I notice several letters under the above heading asking the best method of mounting and starting a motor cycle with a passenger on the carrier, and would refer your readers to the following tip. Let the passenger take his [her] seat, and push off in the ordinary way! When the engine fires, place the left foot on the pedal, sit on "side saddle," and raise the right foot over the tank. This can easily be done with a little practice, thus enabling one to start almost anywhere. By the way, I would warn your readers against the use of any but the best tyres for this kind of work, as I narrowly escaped a nasty accident owing to the bursting of a tyre (made by one of the oldest tyre manufacturers) which had only run about 200 miles. Since last August I have been using a "Palmer Cord," and have done over 1,500 miles of passenger carrying in addition to my ordinary riding.

A. E. PAINE.

Private Owners and Trade Riders. Three Classes Suggested.

Sir,—If, as Mr. Phillpott says, "Many men who sign a declaration that they are not in any way assisted by the trade are actually so assisted in various ways," why does he not, being evidently in the "know," report such "shamateurs" and do two good turns, viz., (1) to his own and kindred clubs who would reap the benefit of double fees, and (2) by making motor cycling a pure sport.

I use Mr. Phillpott's name as an argument, not as an attack. Can he be truthfully classed as anything but a "trade rider"? (By his letter I presume he desires to fall into Class 2.) He is entirely devoted to the motor trade, and is the local agent for the machine he rides. He has skilled mechanics under him who are always at his call to tune up and do sundry jobs that an amateur would either have to do himself (in not such a perfect manner) or pay to have done.

Two classes should be sufficient for us—(1) Trade riders, *i.e.*, makers' riders, or any rider who receives any sum or even present for riding any machine, using any accessory, or for even wearing So and so's famous goggles; (2) men who ride their own machines, and spend their own money on its upkeep, and who pay for their own accessories.

PERCY P. SYVRET.

SUMMARY OF CORRESPONDENCE.

Mr. Stenson Cooke (secretary A.C. and M.U.) writes that a Mr. L. Colley, rider of a 6 h.p. Rex sidette, has written him but has omitted his address. If this should catch his eye will he write again?

Mr. H. D. Jones writes that in the Birmingham M.C.C. competition to Perth and back he took the wrong road at Stirling, and finally reached Birmingham some thirty minutes before time, not threequarters of an hour late as stated in the official results published last week.

Mr. Southcombe May, hon. secretary of the M.C.C., 34, Gower Place, W.C., informs us that numbers of his club letters go astray through their being incorrectly addressed to Gower Street. Will members and other readers kindly note?

"E.M." (Brighton) wishes to secure a companion for a long Continental motor cycle trip this year to Japan via Siberia, returning the same route or a different one. Letters addressed as above, c/o The Editor, will be forwarded to the right quarter.

NOTICE.

The Editor disclaims all legal responsibility in any way for loss of copy in the form of manuscript, drawings, or photographs submitted to him. Rejected manuscript, drawings, and photographs will only be returned provided a stamped addressed envelope is enclosed for the purpose.



TIME TO LIGHT LAMPS.

April 25th	... ...	8.10 p.m.
,, 27th	... ...	8.13 ,,
,, 29th	... ...	8.16 ,,
May 1st	... ...	8.20 ,,

Last Week-end.

A gloriously fine week end marred by two most regrettable accidents.

M.C.C. Silencer Trial Cancelled.

The committee of the Motor Cycling Club announce that, owing to insufficient entries, they regret being obliged to cancel the open silencer trial which was advertised to take place on Saturday next. Motor cyclists generally will be sorry to hear of this, as improvements in silence are generally desired.

Sutton Coldfield and Mid-Warwickshire A.C.

An open race meeting for lightweight motor cycles, singles, and twins. T.T. Junior (1912) limit, will be held at Aston track on May 4th, at 3 p.m., and will comprise the following events: Three-mile scratch race and five-mile handicap. The handicapping will be three yards per mile per cubic centimetre difference. The latest date for receipt of entries is the 29th inst.

Memorial to the late A. J. Moorhouse.

It is proposed to erect some sort of memorial to the late A. J. Moorhouse, whose sad death is reported in our account of Saturday's B.M.C.R.C. meeting. The proposal will be discussed at the R.A.C. Association Rooms, 89, Pall Mall, W., on Monday next, the 29th inst., at 8 p.m., when all motor cyclists interested are invited to be present.

Hill-climb in Leicestershire.

The opening hill-climb of the Leicester and District M.C. was held at Beacon Hill, Woodhouse, on the 5th inst. A strong wind was blowing down the hill, so fast times were few. An electrical timing apparatus was used, and results on formula are:

Class 1 (lightweights).—1, H. Petty (2½ Singer).

Class 2 (single-cylinder touring machines).—1, R. C. Wainwright (3½ Campion); 2, A. L. Barker (3½ Clyde); 3, Mrs. K. H. Simpson (3½ Rudge).

Class 3 (twin-cylinder touring).—1, E. Goodin (6 Clyde).

Class 4 (touring sidecars).—1, T. O. Judge (7 Indian).

Class 5 (T.T. roadster).—1, H. Petty (3½ Singer); 2, E. Folwell (3½ B.S.A.); 3, W. P. A. Chapman (3½ Triumph).

Class 6 (open).—1, E. Goodin (6 Clyde); 2, W. M. Matthews (6 Zenith); 3, W. G. Glover (6 Rex).

Winner of first round of Judge Cup.—H. Petty (2½ Singer).

Winner of novices' prize.—M. Simpson (3½ Rudge).

An Irish Test Hill.

Can any reader tell us the average and also the steepest gradient of Knocksaughey Hill, the venue of the Belfast and District M.C.C. hill climb on Easter Monday? We are assured that the hill averages 1 in 4, which means that the rise is from sea level to about 1,100 feet, in 1,550 yards.

Inquest at Weybridge.

At the Coroner's inquest on the body of poor Moorhouse, held at Weybridge last Monday, the jury returned a verdict of "Accidental death," and added that no blame attached to anyone.

An eye witness of the accident, who was also a competitor, reports that Moorhouse was not bending down to adjust anything on his machine—he appeared to swerve off the top of the banking where he had steered the machine to get extra speed before entering the straight.

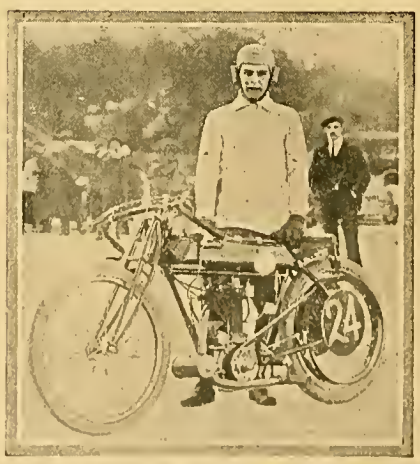
South Australian Speed Trial.

On March 9th the M.C.C. of South Australia held its second speed test over a flying half-mile on one of the country roads near Adelaide. A strong side wind was blowing, which somewhat reduced the speed. The following were the results:

Single-cylinders up to 500 c.c.: 1, F. R. Limb (3½ h.p. Calthorpe), 22⅕s.; 2, H. H. Ragless (3½ h.p. T.T. Triumph), 32⅖s.; 3, L. R. Linton (3½ h.p. Rudge), 33⅕s.

Twin-cylinder Class: 1, A. Bartholomaeus (6 h.p. Rova-Jap), 30⅗s.; 2, F. R. Limb (6 h.p. Rova-Jap), 31s.; 2, C. Lindsay (6 h.p. Jap), 31s.

Great interest was taken in the relay race from Adelaide to Sydney, 1,148 miles, which has already been mentioned in *The Motor Cycle*.



D. C. Bolton with the 3½ h.p. Rudge on which he won the three-lap scratch race.

SPECIAL FEATURES.

The Mobilisation Scheme.
Bristol M.C.C. Hill-climb.
Ten Years' Experience of the Pastime.
New Pattern Machines.

Marseilles to Nice Race.

We are informed that Cuzeau's time was three hours twenty-two minutes twelve seconds, not three hours fifty-three minutes as given in the last issue. This makes him first in his class (under 500 c.c.) and second to Berlié in the entire race, a very fine performance for so small an engine (the Terrot).

R.A.C. Touring Guides.

Now that the new road scheme of the R.A.C. has been put into practical operation, it is interesting to note the financial assistance given by some of the affiliated clubs. The Scottish A.C. is placing fifty men on the roads under its own jurisdiction. The A.C.U. has given £100. The Hampshire Club is considering the gift of a similar amount. Other donations are: Bradford A.C. £45. Commercial Motor Users' Association £30. Northants Club £27. Yorkshire A.C. £25. Kent A.C. £25. Coventry and Warwickshire £21. Ladies' A.C. £25, while the Halifax and Somerset Clubs are giving 2s. 6d. per head.

Ninety-five Miles an Hour.

We hear from America that E. Hasha, riding an eight valve Indian on the new track at Los Angeles, has beaten all records from one to ten miles. The times are:

		m. s.			m. s.
1	mile	0 37⅘	... 6	miles	4 1⅗
2	miles	1 18⅖	... 7	miles	4 42⅖
3	miles	1 59	... 8	miles	5 24
4	miles	2 39⅗	... 9	miles	6 5
5	miles	3 20⅕	... 10	miles	6 45⅘

The speed of the first mile is equal to over ninety-five miles an hour, and the average speed for ten miles is 88.71 miles per hour.

The Motor Cycle in South Africa.

Mr S. F. Edge has just returned from a motor car trip in South Africa, where he was accompanied by Mr. Charles Jarrott. In a recent issue of *The Autocar* Mr. Edge gave a summary of his experiences, and in reply to *The Autocar* representative's query regarding the use of motor cycles in South Africa, said: "I foresee a huge future there for motor cycles, for the reason that they can run on the Kaffir tracks, but though they should be well powered, they should not be too fast. A 3 h.p. engine with two-speed gear should be about the thing."

Yorkshire Hill-climb.

The Bradford M.C.C. will hold its annual hill-climb on May 18th. Mr. Felix Scriven tells us that there will be about nine classes, two of which will be confined to amateurs. The electrical timing apparatus, which proved so satisfactory last year, will be again used.

The Mobilisation Scheme.

The writer of our military notes, who is an Army officer, further explains the scheme for the great mobilisation test. Hundreds of replies have been received through *The Motor Cycle* in response to the original appeal published in these pages on April 4th

A Scottish Invitation.

The Edinburgh M.C.C. has extended an invitation to the Auto Cycle Union to send a team of eight crack riders to take part in a hill-climb to be held on a Saturday in June. Those anxious to take part should send in their names to the secretary of the A.C.U.

The New T.T. Regulations.

The rules for the Tourist Trophy Races are now available. Most of the Junior T.T. manufacturers are increasing the capacity of their engines to the full limit = 350 c.c., and we have heard of several twin-cylinder engines of 500 c.c. in preparation for the Senior race. It would appear that the A.C.U. will have to rely for its major support from private owners.

A.C.U. Competitions Committee.

The Competitions Committee of the Auto Cycle Union has made the following recommendations to the General Committee:

UNOFFICIAL RECORDS.—That the following recommendations be adopted: "Any owner, manufacturer, dealer, agent, or driver taking part in or directly connected with any trial or competition, otherwise than under regulations made by the Auto Cycle Union, and obtaining extensive advertisement therefrom, shall be deemed guilty of a breach of these rules, *i.e.*, the competition rules, and shall be suspended." This is based on the rule found at the head of the R.A.C. Competition Rules.

TRACK RECORDS.—That the records set up by the late Mr. A. J. Moorhouse on April 18th be confirmed.

TWO-STROKE ENGINES—IMPORTANT DECISION.—That the handicap imposed on two stroke engines (air and water-cooled) be removed.

OFFICIAL TIMEKEEPER.—That Mr. A. G. Reynolds be reappointed official timekeeper for 1912.

PERMITS.—That permits be granted to the Tunbridge Wells M.C.C. to hold three and five miles handicap races and a three miles scratch race for machines fitted with engines not exceeding 76 × 76 on Whit-Monday; and to the Sutton Coldfield A.C. to hold a three miles scratch race and a five miles handicap race for Junior T.T. machines on May 4th. It was recommended that these permits should be granted provided the machines are not geared higher than 5 to 1, and that this gear should not be exceeded for any race held on a grass track; also that no permit should be granted to hold any race on a track which the A.C.U did not consider suitable and safe.

FUTURE EVENTS

April 27.—Bristol B and M.C. Open Hill-climb
„ 27.—M.C.C. Open Silencer Trial
May 4.—Coventry and Warwickshire M.C. Open Reliability Trial.
„ 4.—Mersey M.C. Open One-day Trial.
June 1.—Birmingham M.C.C Open Hill-climb
„ 1.—Liverpool A.C.C. Open Hill-climb.

A special heading for competition announcements will be found at the end of the miscellaneous advertisement columns.

Open Amateur Hill-climb.

The Sutton Coldfield and Mid-Warwickshire A.C. is working hard to make the open amateur hill-climb a success. There will be four classes (under 350, under 520, T.T. machines, and unlimited). The entries close on May 10th. This is claimed to be the first event of its kind, and it is hoped that amateurs will support it enthusiastically.

Chased by Two Lions.

The Livingstonia News for April mentions an adventure two motor cyclists had recently while returning from the Zomba (Central Africa) Coronation ceremonies. The riders, Mr. and Mrs. Macdonald, the former a magistrate at Mzimba, were chased for five miles by two lions, which showed no fear of the noise made by the engines, and galloped after the motor cyclists with evident determination to kill them. The lions were finally outdistanced, and the riders, suffering greatly from nervous strain, reached their home in safety.

Reduced Speed Limits.

Local Government Board inquiries have been held during the past week or two into applications for reduced speed limits at the following places: Windsor, Lambeth, Lindfield, and Swiss Cottage.

A Dual Success.

In addition to winning the Tranmer Challenge Trophy at the Staxton Brow hill-climb, D. Bradbury (3½ Norton) also won the New Hudson Challenge Cup for the best performance on formula on a standard single-cylinder machine.

Coventry and Warwickshire M.C. Open Trial.

Entries for this event will close next Saturday, the 27th inst. The route, which will be a secret until the day, will follow a sporting course, and will be well marked. A representative entry has already been secured.

Motor Cycles in the Postal Service.

We are informed by the Coventry Postmaster that it has been decided to continue the experiment of the Rover motor cycle in the Coventry and district postal service for a period of twelve months. The exact running costs will be ascertained at the close of the trial.

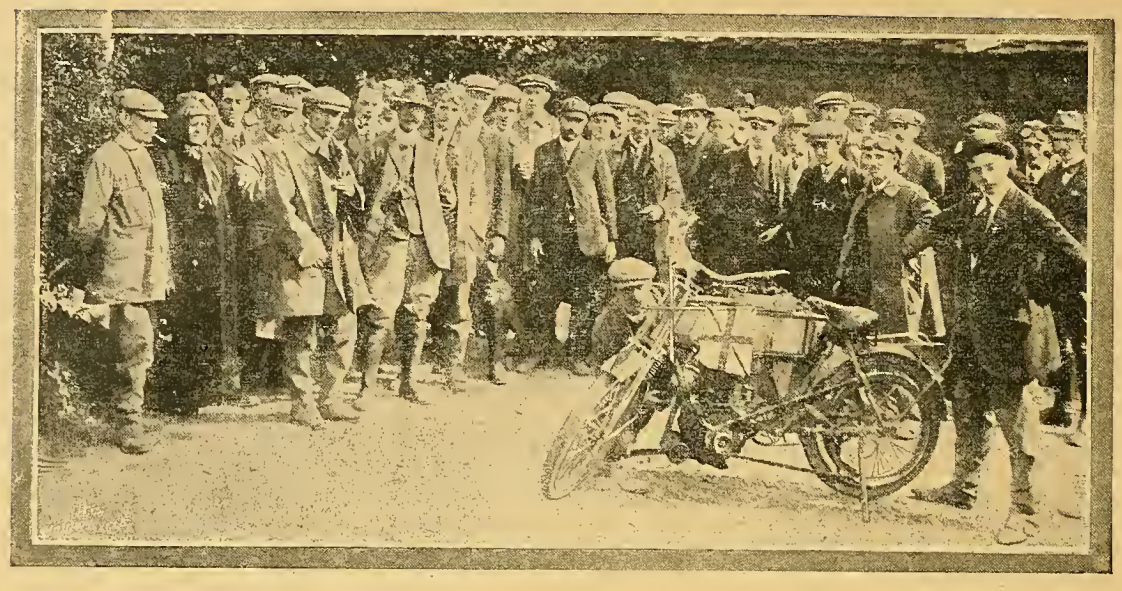
M.C.C. Team Competition.

Entries, or definite promises to enter, for the M.C.C. team competition for *The Motor Cycle* cup have been received from the following clubs Birmingham M.C.C., Bradford and District M.C.C., Bristol M.C.C., Coventry and Warwickshire M.C., Derby and Northants M.C., Bristol B. and M.C., Liverpool A.C., Mersey M.C.C., Oxford M.C.C., Sheffield and Hallamshire M.C.C., North-West London M.C.C., Notts and District M.C.C., and South-East London M.C.C.



BRISTOL M.C.C. OPEN HILL-CLIMB AT GREAT CHEW.

F. W Barnes (Zenith) near the top of the hill. The photograph shows how the spectators crowded on to the course, which was none too wide at this point.



Birmingham M.C.C. All Equal Hill-climb. R. W. Duke, surrounded by his fellow members, adjusts the "old crock" at the foot of the hill. The engine with which it is fitted is an old White and Poppe.

The Scottish Auto Cycle Union.

Successful Conference at Stirling.

Nearly thirty representatives of motor cycle clubs met at the Golden Lion, Stirling, last Saturday, to discuss the formation of a Scottish Auto Cycle Union. Mr. John Gow, president of the Glasgow M.C.C., took the chair, supported by Messrs. R. J. Smith and J. R. Nisbet. The clubs represented were: Edinburgh, Glasgow, Perth, Dundee, Scottish Border, Cathcart, Falkirk, Leven and District, Wishaw and District, and West of Scotland.

The discussion was opened by Mr. J. S. Fulton (Glasgow), who dwelt on the necessity for such an organisation and the exceptional opportunity which was now offered. By themselves they would have to put in many years' work before they could obtain the benefits which co-operation with the Scottish A.C. secured them at the outset. He accordingly moved that such a body be formed. The matter of title aroused some discussion, a section desiring the body to be termed the Scottish Motor Cycle Union, but on taking a vote the majority favoured the Scottish Auto Cycle Union.

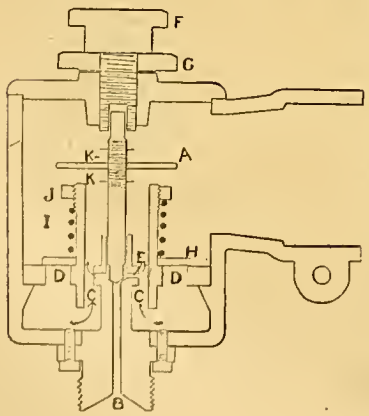
Mr. R. J. Smith then submitted a draft constitution, which was formerly approved of, and a provisional committee was then formed to discuss this in fuller detail. This committee was elected as follows: Messrs. J. Gow, W. Macmillan, J. R. Nisbet, jun., J. S. Fulton, F. Salvesen, C. McGregor, Bruce Syme, A. F. Sinclair, Thomson, Craig, Whitehouse, and Shepherd, with Mr. R. J. Smith as secretary *pro tem.*

The question of reciprocity was raised, and Mr. J. R. Nisbet, without speaking officially, assured the meeting that full recognition would be given by the A.C.U., while, owing to the connection with the Scottish Club, they would have all the advantages of R.A.C. and A.C.U. membership when they crossed the Border.

With regard to licences for forthcoming competitions, it was decided that the Scottish A.C. should issue them in the interim.

A SIMPLE CARBURETTER WITHOUT A FLOAT CHAMBER.

This carburetter differs from the usual pattern in having no float, the petrol supply being controlled by a needle-valve which is operated by the suction of the engine. The petrol enters by the passage B, which is closed by the needle-valve. The valve A is lifted by the suction of the engine allowing petrol to enter by the jets E (three in number), and air through the choke tubes C C. The petrol supply can be varied by the milled nut F. As the engine speed increases extra air is admitted through the ports D D, the supply being controlled by the valve H and the spring I, the tension of which is adjusted by the nut J. The throttle consists of a gunmetal sleeve (not shown), which revolves inside the vacuum chamber, and is controlled by a Bowden wire.



We are informed by the maker, Mr. B. Cooper, Braintree, Essex, that the carburetter has had a thorough testing on the road, and has proved most satisfactory in use, and quite automatic. It has the merit of simplicity, and if it will do all that is claimed should become popular.



J. Chater-Lea on his 8 h.p. Chater-Lea cyclecar. He gained third place in the cyclecar race at Brooklands last Saturday.

The late Mr. A. J. Moorhouse.

ALL those who follow the motor cycle movement closely will be grieved to read in our report of the B.M.C.R.C. meeting of the death of Mr. A. J. Moorhouse. He was one of the best sportsmen who ever mounted a motor bicycle, a genuine private owner, and a keen and skilful rider. He was popular with all who knew him, and one of those men we can ill afford to lose. His name first became known to our readers as a prominent member of the Manchester Motor Club, and when he came to London last autumn for Messrs. Waygood and Sons, the well-known lift manufacturers, and took his seat on the Auto Cycle Union Committee, his fellow workers felt he was a real acquisition.

He was a good speaker, clear headed and well balanced, while his knowledge of competition work and of club life rendered him an extremely useful member of committee. Despite the short time he was on the committee he did excellent work, and was largely instrumental in bringing about the reform of which the Union was so badly in need. In fact, he became an appreciated ambassador from the North.



The late A. J. Moorhouse. He met with a fatal accident at Brooklands last Saturday.

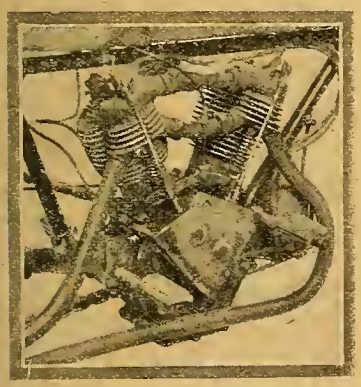
It is impossible to express in words the sympathy we feel for his widow and children, but we are sure that every motor cyclist who knew him, and even those who merely read of his prowess on the track and on the road, will join us in this. His death is a sad loss, and all the sadder as he was the type of man we most want in our competitions and in the control of the sport. It is some small comfort to be able to record that he was suddenly and painlessly taken from our midst while engaged in the sport he loved before all else.

Among the late Mr. Moorhouse's principal successes may be mentioned that he was the winner of the Jarrott Cup in 1911, third in last year's Tourist Trophy Race, while only a week ago, as is reported elsewhere in this issue, he beat no less than seven records. The hour record Class E—70 miles 1,388 yards—still stands in his name.

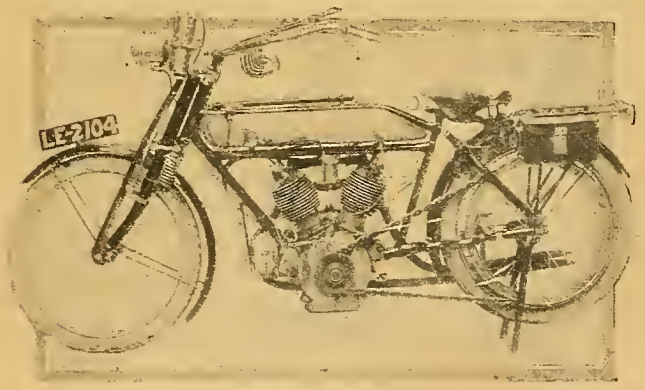
A later account of the fatal accident mentions that the unfortunate rider crashed into a telegraph post which bears the imprint of his goggles. The cause of the accident was that splendid self-confidence without which daring deeds can never be done.

THE EAGLE 10 h.p. MOTOR BICYCLE.

THE engine of this machine, which we had the opportunity of seeing last week, is designed for sidecar and cyclecar work, and for these purposes it should be eminently suitable. It is made by the Eagle Motor Manufacturing Co., at Shepherd's Bush, who also make worm-driven back axles, three speed and reverse gear boxes, steering parts and clutches for cyclecars. The size of the engine is 85 mm. bore by 88 mm. stroke, cubic capacity 998 c.c. The cylinders are unusually smooth castings. There is a system of double exhaust which allows the exhaust gases from each cylinder to pass under the exhaust valve of the other as well as down its own exhaust pipe to the rear. The cylinders are slightly offset and compression is fairly high. The inlet valve is of the mechanically operated overhead type. The plugs are placed in the centre of the cylinders, and the compression taps at the side where they are readily accessible. The magneto timing is independent. The Benton and Stone method of lubrication is used combined with a sump at the bottom of the crank case. The small end has already been described in our columns. The gudgeon pin is keyed to the connecting rod and rocks in wide bearings attached to a disc which screws into the top of the piston and is then secured by means of a wedge bolt and nut. The machine is equipped with a Senspray carburetter.



Power plant of the Eagle. Note the system of double exhaust.



The Eagle 10 h.p. Motor Cycle.



B.M.C.R.C. Second Monthly Meeting

A BEAUTIFUL afternoon, June-like as to its temperature, with hardly a breath of air, graced the second B.M.C.R.C. meeting. There was one really excellent event, the three lap 500 cc. race, the cyclecar race was also interesting, but little did we think the proceedings would terminate so tragically. It is hard, indeed, to describe what happened in the other events owing to the terrible accident that occurred to poor Moorhouse, and the knowledge that his name will never appear again in a B.M.C.R.C. programme.

The first events on the programme were the first 1912 time trials over the kilometre and mile, flying start. Certificates are issued for the best performance in the various classes, and a gold medal will be awarded in each class for the best aggregate performance during the season. Competitors rode in the usual direction round the track, and were expressly told to keep outside the 50 feet line. Despite these instructions Stanhope Spencer, S. Wright, Oldman, and Axford kept too near in during their first try, and were each given another. On the occasion of his first attempt Wright's start afforded considerable excitement, as by some means or other the handle-bar slipped out of his hand, but after a tough struggle he cleverly regained control and succeeded in mounting his machine.

Results:

CLASS B.—Up to 350 c.c.

	Kilometre. Secs.	Mile. Secs.
1. G. E. Stanley (1 Singer, 69×80 mm., 299 c.c.	38.46	62.16
2. N. A. Ayres (1 Singer, 69×80 mm., 299 c.c.)	39.56	64.13
3. S. Wright (2 Humber, 60×60 mm., 340 c.c.)	47.84	77.42

CLASS C.—Up to 500 c.c.

1. G. E. Stanley (1 Singer, 85×88 mm., 499 c.c.)	31.89	52.34
2. D. C. Bolton (1 Rudge, 85×88 mm., 499 c.c.)	32.52	52.71
3. W. O. Oldman (2, Bat-Jap, 76×54.5 mm., 498 c.c.)	34.07	53.67
4. Stanhope Spencer (1 Rudge, 85×88 mm., 479 c.c.)	34.52	55.89

Stanley's Singer was provided with a neatly fitted foot-operated oil pump.

CLASS D.—Up to 750 c.c.

1. S. T. Tessier (2 Bat-Jap, 85.5×64 mm., 741 c.c.)	31.56	51.63
2. H. Hunter (2 Corah-Jap, 90×58 mm., 750 c.c.)	32.99	54.55

CLASS E.—Up to 1,000 c.c.

1. C. R. Collier (2 Matchless-Jap, 90×78 mm., 998 c.c.)	28.04	45.71
G. F. Hunter (2 Zenith-Jap and sidecar, 90×77.5 mm., 998 c.c.)	34.47	60.99

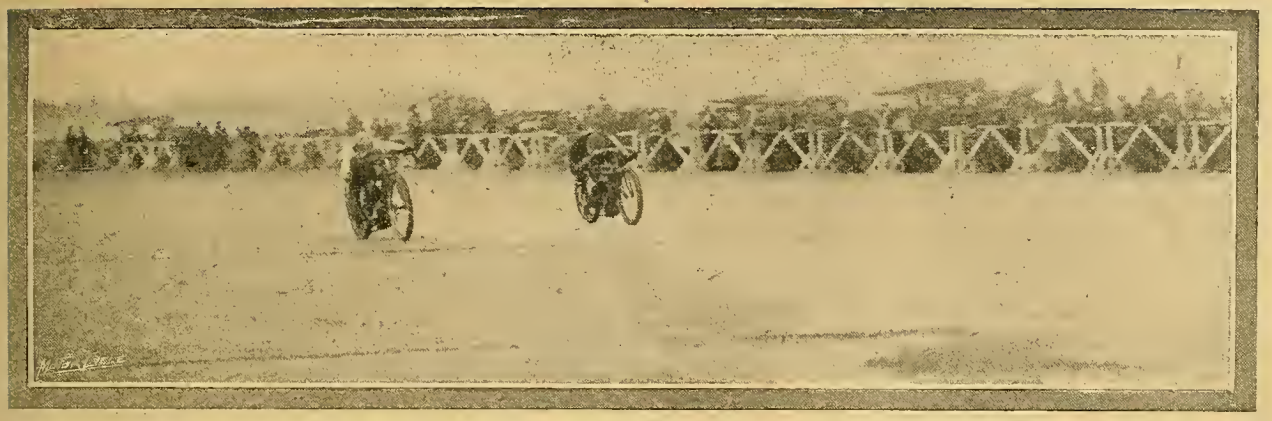
Collier's machine was fitted with a special oil pipe to the front cylinder, which could be closed by means of a tap. The end had been removed from both silencers.

The second event on the programme was the three lap 500 c.c. scratch race. Distance, 8 miles 269 yards. First prize, silver cup presented by Singer and Co., Ltd.; second prize, the Club's silver medal; third prize, the Club's bronze medal. Starters were barred except in the case of Woodman, who has only one leg, and Alan Hill, who is lame. Spencer got away first. The start was quite an impressive sight.

Close Finishes in the Three Lap Scratch Race.

In the first lap Stanley established a good lead, but Bolton was making a good fight. Spencer, Oldman, Franklin, Timson, Alan Hill, South, Woodman, Guiver, and Axford was the order of the rest. In the second lap Stanley and Bolton continued their fight for first place, Spencer and Oldman some way behind struggled for third place; and the rest came by in the following order: South, Timson, Alan Hill, Guiver, Franklin, Axford (whose engine was misfiring badly), and Woodman.

The finish was most exciting, Bolton beat Stanley by barely a length, Spencer came next some way behind with Oldman close on his heels, then an interval and a hard struggle between South and Timson. Hill and Guiver after a further interval came next almost neck and neck. Axford brought up the rear, while Woodman was last with a partially seized piston. It was one of the best motor cycle races ever seen on Brooklands, and the way in which the first six finished in pairs was quite extraordinary.



D. C. Bolton (Rudge) and G. E. Stanley (Singer) finishing close together in the three-lap scratch race.

Result :

	m. s.
1. D. C. Bolton (1 Rudge, 85×88 mm., 499 c.c.) ...	7 37⅗
2. G. E. Stanley (1 Singer, 85×88 mm., 499 c.c.) ...	7 37⅘
3. W. S. Spencer (1 Rudge, 85×88 mm., 499 c.c.) ...	7 59⅘
W. O. Oldman (2 Bat-Jap, 76×54.5 mm., 498 c.c.)	
W. D. South (1 Rudge, 85×88 mm., 499 c.c.)	
S. D. Timson (1 Rudge, 85×88 mm., 499 c.c.)	

Woodman rode the machine entered by McNab. Bolton's Rudge was fitted with an Amac carburetter and Timson's with a Cap.

The Cyclecar Race.

The Five-lap Cycle Car Race next figured on the programme; distance 13 miles 1,035 yards; first, second, and third prizes, the club's gold, silver, and bronze medals respectively. A *début* was made by the A.C. Mighty Atom racer, the first of the new models turned out. It was fitted with the new type of engine seen at the Show with a larger bore, extra radiating surface, and larger flywheels. A Senspray carburetter was fitted. The silencer was carried transversely about 18in. behind the back seats, and on each end thereof a number plate was carried. Other newcomers to Brooklands were the G.W.K. and the Chater-Lea.

First lap: The A.C. and the Autotrix passed at the end of their first lap before the Morgan and Bedelia started. They were followed by Chater-Lea, G.W.K., and Bedelia and Morgan. In the second lap A.C. was leading, but Autotrix pressed him hard. Chater-Lea took third place, and was followed by Bedelia and Morgan.

Third lap: Autotrix had just passed A.C., and the rest came by as follows: Chater-Lea, Morgan and Bedelia.

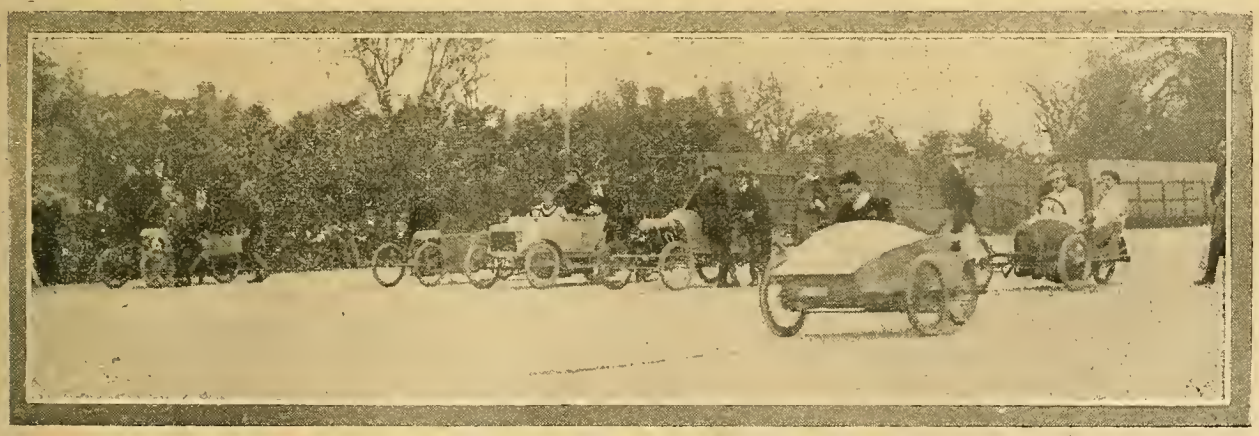
In the fourth and fifth laps the same order was preserved. The Morgan was clearly the fastest machine, but could not pull up the allotted handicap.

Result:

	Start. M. S.	Time. M. S.
1. G. Wadden (2 Autotrix-Jap, 85×85 mm., 964 c.c.)	5 20	17 45⅕
2. F. Hill (1 A.C., 95×102 mm., 723 c.c.) ...	4 45	18 40⅕
3. J. Chater-Lea (2 Chater-Lea, 85×85 mm., 964 c.c.)	—	18 51¼
H. Martin (2 Morgan-Jap, 90×77.5 mm., 984 c.c.)	scr.	—
H. Ward (2 Bedelia, 84×100 mm., 1,100 c.c.)	1 0	—

A Tragic Ending to the Hour Race.

It is now our sad duty to record what happened in the hour all-comers' race. This was divided up into the usual classes. Moorhouse's machine was running badly just before the start, and he was the last man to line up. However, he seemed to get away fairly well, and soon got into his stride. The big Indian was pulling well, and was reeling off laps at 70 and 71 miles an hour. At the seventh lap Moorhouse was leading the throng, and was followed by Stanley Class C), H. A. Collier and Tessier (both in Class E).



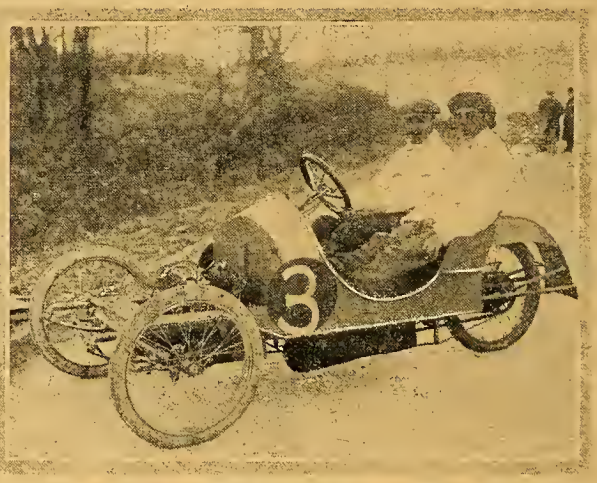
Scene at the start of the five-lap cyclecar race at Brooklands last Saturday.

B.M.C.R.C. Second Monthly Meeting.—

Moorhouse was seen bending down apparently trying to fix his silencer which was loose. The next thing we saw was a big blaze at the beginning of the railway straight, a great flame and a column of smoke ascending in the air like a funeral pyre. People realised a machine was on fire, whose no one knew; not a soul could be seen even through powerful glasses. We could only guess that it was Moorhouse.

The first authentic news was from Oldman, who said Moorhouse was seriously injured and that the race was stopped. Eventually Mr. T. W. Loughborough told us that poor Moorhouse was lying on his face stone dead in the ditch adjoining the track, and his machine was on the grass completely burned out. It is supposed that he was bending down trying to fix the silencer when the front wheel struck a bump in the track; the machine swerved, got completely out of control, and flung its gallant rider to the ground. Death was mercifully instantaneous.

No one saw the accident, and its cause can only be surmised. The event cast a sad gloom over Brooklands, and a glorious afternoon terminated in the first tragic ending of a motor cycle track meeting in England. We have been connected with motor cycle racing in Great Britain for the past nine years, and it is interesting to note that poor Moorhouse's terrible accident is the first which has terminated fatally to a motor cycle competitor on Brooklands track.



The Autotrix-Jap cyclecar entered by G. Wadden, winner of the five-lap cyclecar race.

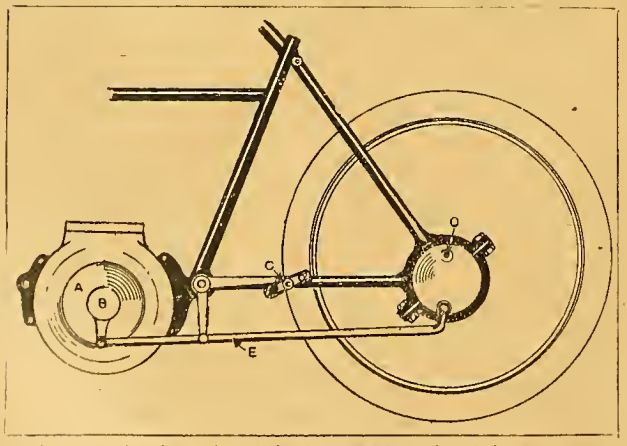
TWO NEW VARIABLE GEARS.

THE BARNETT.

THE writer recently had the opportunity of an afternoon's run on a motor cycle fitted with a variable gear invented by Mr. Barnett, an engineer of Derby. A few particulars of this test may be of interest to readers of *The Motor Cycle*.

To describe the gear: The back wheel is mounted in an eccentric, and backward or forward movement of the rod E gives a corresponding movement of the rear wheel in relation to the frame. The front portion of the rod is attached to a small arm working cam faces B.

The action of the cam faces sliding against each other opens or closes the pulley flange A. The thrust at B is taken by two ball thrust bearings, over which a neat dust cap is fitted. The gear is infinitely variable, and incorporates a free



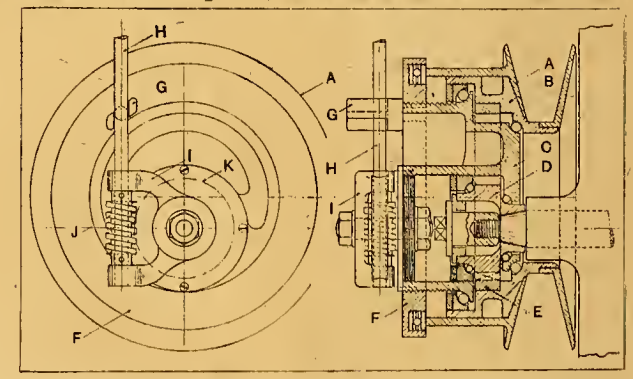
engine. It is also adaptable for pedal or hand lever operation. In the accompanying illustration, downward pressure of the pedal C gives low gear and free engine, whilst depression of right pedal causes rear wheel to travel forward, closes up pulley flange, takes up slack of belt, and gives high gear.

The method of mounting the rear wheel in frame ensures absolute lateral rigidity, whilst the gear is claimed to be foolproof, and to be the most accessible variable gear yet introduced. The relative movement of rear wheel and pulley flange is such that the belt is always at proper tension. Gears obtainable 3½ to 1 to free engine.

The working of the gear came quite naturally, as pressure on either pedal for high or low is all that is required. On two occasions I found it quite easy to crawl past a flock of sheep at about three or four miles an hour, accelerating in a few yards when the road was clear again. A.B.B.

THE P. AND P.

THIS new variable gear, invented by Mr. Rowe, is now in its experimental stage, and will be put on the market by Messrs. Packer and Prentis, Roden Street, Ilford, E. Referring to the diagrammatic sketches, the small gear wheel D is fastened to the engine-shaft, and engages with the internally-toothed gear of the pulley B, which is thus caused to rotate about the eccentric C. The gear is raised by turning the rod H, which, by means of a worm gear J, revolves the eccentric C about the



centre of the engine-shaft. This movement alone would alter the tension of the belt, but at the same time the part F, which is kept from revolving by the engagement of G and H, moves along a thread on the eccentric, and forces the flange A towards the inner flange of the pulley, thus raising the gear. A and B rotate together, being connected by feathers.

The gear is infinitely variable between its limits, no jockey pulley is required, nor is it necessary to slide the back wheel. The entire gear will weigh about 8 lbs., and the moving parts 3 lbs. A free engine can be obtained by bringing the eccentric right back. The belt then will rest or slide on the bottom of the flange.

THE BRISTOL M.C.C. HILL-CLIMB.



W. Cooper starting the first competitor, W. W. Douglas (2¾ h.p. Douglas), who later secured second place in Class 1.



E. Kickham (2¾ Douglas) rounding the first bend in the lightweight class in which he gained third place.

THE above club held a successful hill-climb on Saturday last at Chew Hill, about seven miles out of Bristol. The day's sport was marred by a sad accident to E. W. Cheshire (Triumph), who started a wobble and failed to correct it on the top corners. He took the bank at high speed and sustained severe injuries to his head. Fortunately, a doctor was on the spot, and he reported severe concussion but no bones broken. Cheshire was removed in a semi-conscious condition to the Bristol Hospital by a car, and on Sunday morning had not regained consciousness, although it is reported that he may possibly recover.

Three Awkward Bends.

The hill was a sporting one about threequarters of a mile in length, getting gradually steeper towards the summit, which was probably 1 in 7 to 1 in 8. The surface was excellent, and there were no bad corners, but three bends which were awkward at high speed, especially as throughout the afternoon some difficulty was experienced in keeping spectators off the course. At one time the competitors refused to ride unless the course was better cleared. Mr. W. Cooper's energies seemed inexhaustible, and had it not been for his powerful lungs and sharp wit, aided by the hon. secretary, Mr. P. Grout, there would have been more bad accidents. After Cheshire's accident Newsome and Crawley (Triumphs) did not ride.

The Douglases had a day out in their own country, and did extremely well. It was wonderful to watch the little twins roaring over the top of the hill. W. W. Douglas took a toss on the last bend, but fortunately no damage was done.

CLASS I.—Junior Touring Twins.

		s.
1.	F. Ball (2¾ Douglas)	50⅞
2.	W. W. Douglas (2¾ Douglas)	50⅜
3.	E. Kickham (2¾ Douglas)	50⅘

This was a clean sweep for the Douglas.

CLASS II.—Junior Touring Singles.

Newman, riding a 70 × 90 Ivy-Precision, made a very fast climb. F. V. West (Levis) came up well, but appeared under-geared.

		m.	s.
1.	H. Newman (2½ Ivy-Precision)	0	55⅗
2.	F. W. Barnes (2¾ Zenith)	0	56
3.	R. Holloway (2½ Premier) ... ... / F. G. Edmond (2 Humber)	1	4⅘

CLASS III.—Senior Touring Singles and Twins.

This time Newman was riding the 3½ Ivy, and again scored by a good lead, the next four times being very close together, Kickham's Douglas being very noticeable, and only one second slower than an engine of far greater capacity.



H. C. Newman (3½ h.p. Ivy-Precision) nearing the top of Chew Hill, the scene of last Saturday's Bristol M.C.C. Hill-climb.



A Triumph rider passing the finishing point on Chew Hill last Saturday.



Mrs. Simpson (3½ h.p. Rudge) who made fastest time in Class 5.

		s.
1.	H. Newman (3½ Ivy-Precision)	42 3/5
2.	Vernon Taylor (3½ Rudge)	47 4/5
3.	S. Crawley (3½ Triumph)	48
4.	W. F. Newsome (3½ Triumph)	48 3/5
5.	E. Kickham (2¾ Douglas)	49 3/5

CLASS IV.—Fixed Gear Touring Singles.

Besides the three fastest times, H. Spanton and V. Taylor (Rudges), J. Cocker (2½ Singer), R. H. Clark (Corah), and the unlucky Cheshire all made good and fast climbs, Cheshire's accident occurring after rounding the first bend of the S curve.

		s.
1.	S. Crawley (3½ Triumph)	42 3/5
2.	H. Newman (3½ Ivy-Precision)	43 1/5
3.	W. F. Newsome (3½ Triumph)	47 3/5

CLASS V.—Ladies.

Unfortunately there were only three entries in this class. However, all three made good clean ascents, though worried by a cart. Mrs. Simpson was twice sent back to the start after being baulked on the hill, and consequently started with a hot engine.

		m.	s.
Mrs. Simpson (3½ Rudge)		1	7 4/5
Mrs. P. Grout (2¾ Douglas)		1	16 2/5
Mrs. Gibb (2¾ Douglas)		1	33 3/5

CLASS VI.—Racing Unlimited.

Some fast times were accomplished in this class. W. G. McMinnies rode his Triumph splendidly, and with Holloway (Premier), in a later class, shares the honour of the finest ascents from a rider's point of view.

		s.
1.	F. W. Barnes (8 Zenith)	42 1/5
2.	H. Newman (3½ Ivy-Precision)	43
3.	W. G. McMinnies (3½ Triumph)	46 4/5

CLASS VII.—Passenger.

Neither the Morgan nor the Williamson which were entered turned up. It is reported that the latter had had an argument with a hay cart and was still suffering.

		M.	S.
1.	F. W. Barnes (6 Zenith sc.)	0	59 4/5
2.	A. B. Wade (6 Zenith sc.)	1	9 2/5
3.	H. G. Dixon (3½ New Hudson sc.) ...	1	15 3/5
4.	R. Lord (6 Rex sc.)	1	39 1/5

CLASS VIII.—Racing Singles.

This was another win for Newman closely followed by Holloway and McMinnies. P. Maurice (Premier) made a good climb, but had the misfortune to break a belt close to the top.

		s.
1.	H. Newman (3½ Ivy-Precision)	44 1/5
2.	R. Holloway (3½ Premier)	46 1/5
3.	W. G. McMinnies (3½ Triumph)	47 2/5

CLASS IX.—Junior Racing Twins or Singles.

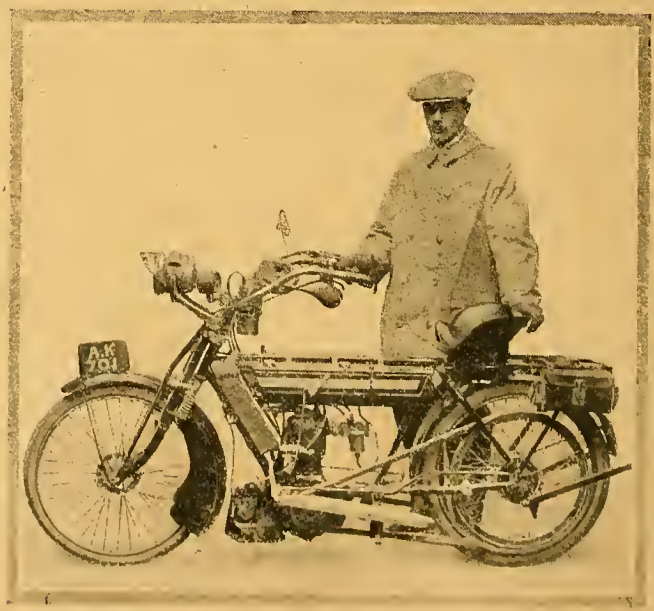
F. Ball's Douglas was again a winner, and both the Humber and Enfield came up fast.

		s.
1.	F. Ball (2¾ Douglas)	50 3/5
2.	W. Moore (2¾ Humber)	51 4/5
3.	H. Colver (2¾ Enfield)	53 1/5

CLASS X.—Club.

This class was run for club members only, and some good performances were made.

		s.
1.	P. Mathews (3½ Ivy-Precision)	48 4/5
2.	F. Clement (3½ Singer)	53 2/5
3.	W. Douglas (2¾ Douglas)	53 3/5



IN FAVOUR OF WATER-COOLED MOTOR CYCLES.

R. Vernon C. Brook, hon. sec. of the Birmingham Motor Cycle Club, with his neat-looking 3½ h.p. water-cooled Precision-engined two-speed machine. On this mount Mr. Brook gained a gold medal in the ever to be remembered Birmingham to Perth and back reliability trial. The performances of his Precision have entirely won Mr. Brook over to water cooling.

The Bristol M.C.C. Hill-climb.—

The formula results in connection with this competition were calculated on Professor Callender's or the A.C.U. formula, and are as follow:

CLASS I.—Junior Touring Twins.

		Fig. of merit.
1.	E. Kickham (2¾ Douglas)	57.9
2	P. Phillips (2¾ Douglas)	59.3
3	W. W. Douglas (2¾ Douglas)	60.2

CLASS II.—Junior Touring Singles.

1.	F. W. Barnes (2¾ Zenith)	49 2
2.	F. G. Edmond (2 Hunber)	51.3
3.	R. Holloway (2½ Premier)	56.0

CLASS III.—Senior Touring Singles and Twins.

1.	F. W. Barnes (2¾ Zenith)	49 0
2.	J Cocker (2½ Singer)	50.3
3.	E. Kickham (2¾ Douglas)	56.6

CLASS IV.—Fixed Gear Touring Singles.

1.	J. Cocker (2½ Singer)	54.6
2.	V Taylor (3½ Rudge)	63.1
3.	J. Slaughter (3½ L.M.C.)	65.0

CLASS V.—Ladies.

1.	Mrs. Simpson (3½ Rudge)	90.8
2.	Mrs. P. Grout (2¾ Douglas)	94.9
3.	Mrs. Gibb (2¾ Douglas)	118

CLASS VII.—Passenger.

1.	F. P. Davies (3½ Rudge and sc.)	61.7
2.	H. G. Dixon (3½ New Hudson and sc.) ...	64.8
3.	F. W. Barnes (6 Zenith and sc.)	71.0

CLASS X.—Club.

1.	P. Phillips (2¾ Douglas)	60.5
2.	E. Kickham (2¾ Douglas)	60.6
3.	W. W. Douglas (2¾ Douglas)	62.3

CLASSES VI., VIII., and IX. were decided on time alone.

CLUB NEWS.

Streatham and District M.C.C.

A members' hill-climb will take place on the 27th inst. There will be the usual classes with weight limits.

Nottingham and District M.C.C.

Forthcoming events are as follows: May 4th, club hill-climb (handicap); 5th, club run to Skegness; June 1st, open speed trials.

Newport M.C.C.

The opening run and speed-judging competition took place on the 5th inst. Results: 1, H. Smith, 57 secs. slow; 2, A. Axelson, 94 secs. fast; 3, G. Mitchell; 4, O. Harris; 5, F. G. Purnell.

The Brookdale Club, Catford (Motor Section).

A reliability trial was held on Easter Monday, and resulted: 1, H. A. Cooper (Bradbury), 100; 2, F. G. Kennard (Matchless), 97; 3, J. Southgate (Matchless), 95.

Portsmouth and District M.C.

At a meeting held at the King's Hotel, Albert Road, on the 15th inst., the following were elected: Mr. Frank Tappenden, captain; Mr. A. E. Potter, vice-captain; Mr. F. Tappenden, 19, Albert Road, Southsea, hon. secretary.

Coventry and Warwickshire M.C.

On the occasion of his marriage to Miss Margaret C. Butt, which took place on Tuesday last, Mr Geoffrey Smith, the hon secretary of the club, was the recipient of a handsome present and letter of congratulation from the members.

Herefordshire M.C.C.

A good muster attended the opening run, on the 5th inst., through Abergavenny to Llangorse (lunch). The afternoon was spent by the Lakes, and the road taken again to Hay (tea), followed by a splendid finishing run into Hereford. A new handle-bar badge is in progress.

Birmingham M.C.C.

This club held its third annual "all equal" hill-climb on a steep hill having a right angled turn at the foot and a very rough surface, near Alvechurch, last Saturday. Each competitor had to ride the same machine, which was an old crock of unknown make, date, or h.p. Results: 1, L. Newey; 2, V. Busby; 3, K. Holden. See page 468.

Western District M.C. (London).

The reliability trial for the N.S.U. gold medal was run off on the 21st inst., and, subject to confirmation by the committee, the results are:

1, E. S. Ritter (2¾ Douglas), 1.5 secs. slow, takes gold medal; 2, W. F. Ritchie (5 N.S.U.), 22 secs. fast, receives a certificate; no other competitors made non-stop runs.

Merionethshire M.C.C.

At a meeting held at Bala on the 17th inst., the following officials were elected: President, Dr. E. Williams, Bala; vice-president, Captain Allan Jones, Penrhyndeudraeth; treasurer, Mr. A. Williams, Bala; secretary, Mr. B. Edwards, "Talrafon," Dolgelly. It is the club's intention to affiliate with the A.C.U. The number of members is increasing rapidly. A club run will take place on May 16th.

Pontefract M.C.

There will be a speed trial in Byram Park for the Carnes Trophy on May 16th, and a hill-climb for the Robson Cup on June 13th.

Aberdeen and District M.C.C.

The club held its opening run on Saturday, the 6th inst. The destination was Stonehaven, *viâ* the Slug Road. About forty-five members turned out.

Merthyr M.C.

A meeting was held at the Castle Hotel, Merthyr, on the 3rd inst., which resulted in a club being formed. It was proposed, and adopted, that the club be affiliated to the A.C.U.

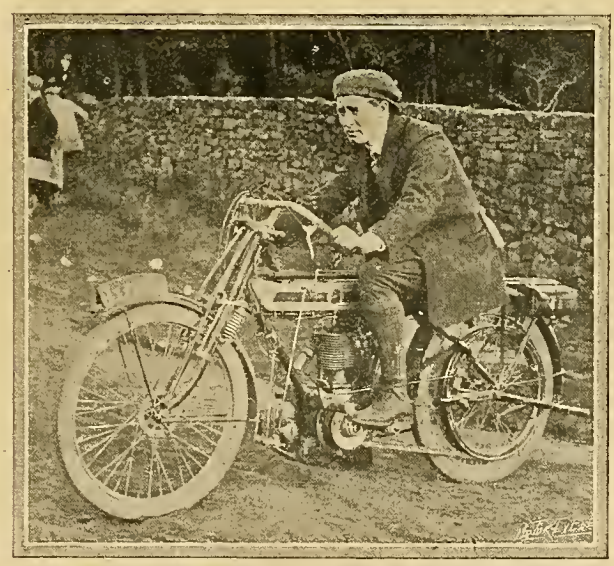
North Middlesex M.C.C.

The London to Stratford-on-Avon and back run for the Premier Challenge Trophy will take place on May 5th. The run will be over a course of about 200 miles, starting and finishing at the Gate House, Highgate.

Chester and District M.C.

There was a run to Congleton on Easter Monday and an impromptu hill-climb on Allgreave Hill, near Buxton. Lord Tollemache has accepted the presidency of the club. The hon. sec., Mr. A. H. Catlow, 89, Brook Street, Chester, will be glad to hear from prospective members.

Results: 1, H. Fox (3½ Rudge Multi); 2, R. R. Thomson (3½ Corah); 3, W. Leather (3½ Bradbury) and A. H. Catlow (3½ Rover).



C. W. Smut, of Darlington, with his 3½ h.p. Smith-Precision, on which he competed in the Middlesbrough and District hill-climb at Castleton. He made fastest time of the day in the open class for any machine, and secured first place on time in the class for touring single cylinders.

Club News.—

Purley and District M.C.C.

Saturday's team trial for Mr. S. F. Edge's silver cup was won by C. W. Meredith (6 h.p. Zenith) and H. B. Willoughby (2¾ h.p. Humber). Third place was taken by R. W. Gaskins (Rudge) and V. Tomkins (Rover). The course was a stiff one of ninety miles, and included Brasted and Titsey, which had to be climbed three times each on the run.

Pontefract M.C.

A speed-judging competition was held on Wednesday, April 17th, over a secret course of 28 miles. The winner was Herbert Holmes (Triumph and sidecar), 19 m.p.h., who was 5m. 50s. fast. H. R. Haigh (3½ Rover), 19½ m.p.h., was second, being 6m. 9s. fast.

Wolverhampton M.C.C.

A reliability trial for motor cycles and passenger machines will be held on April 27th and 28th, for the Stevens Challenge Cup. The start will be made at 1.30 p.m. from St. Mark's Church, Chapel Ash. The route will be secret. This will be given out at headquarters on Friday, April 26th. The judges have power to disqualify noisy machines.

Hamilton and District M.C.C.

The club held its opening run to Moffat on the 17th inst., where it held a slow speed competition. D. Cameron (Triumph) and J. Ross (Roc) being successful. The officials are as follows: President, Mr. R. Cassells: captain, Mr. W. Dick; treasurer, Mr. W. H. Rodger; hon. secretary, Mr. J. Low, Carmaben, Hamilton.

Mersey M.C.

The committee of this club would gladly welcome the assistance of any gentlemen who would act as marshals, etc., on the route of the open twenty-four hours' reliability trial. The trial starts on Friday, May 3rd, at 8 p.m., from Liverpool, and finishes on Saturday, May 4th, about 8 p.m. Anyone willing to assist should write to Mr. S. W. Carty, hon. secretary, 5, Redcross Street, Liverpool.

Bishop Auckland, Darlington, and District M.C.

The club held a reliability trial to Whitby and back along the coast route on the 5th inst. The results were: 1, C. W. Smith (Zenith), lost 0 marks, winner of Palmer cord tyre and tube; 2, J. P. Forster (T.T. Rudge), lost 4 marks; 3, A. B. Hare (T.T. Triumph), lost 7 marks. In spite of the severe route along the coast and the strong head-wind, no failures occurred on the observed hills.

Kingston-on-Thames and District M.C.C.

Runs have been held to Brighton and Oxford. The membership now numbers upwards of 40.

Westmorland M.C.C.

Reliability run, held April 21st, from Kendal to Ulverston, Millom, Whitehaven, and finish at Keswick: 1, B. Jefferys (3½ Triumph); 2, S. W. Phillpott (2¾ Humber); 3, W. B. Little (3½ Rudge) and G. Hogg (3½ Triumph). Bronze medals: E. Jefferys (5 Indian), L. Haygarth (3½ Bradbury), and L. Pierce (3½ Premier).

Ipswich and District M.C.C.

The first reliability trial was held on the 5th inst. over a course of 98 miles, the route being Ipswich, Yarmouth, Norwich, Scole. Some twenty members took part and arrived well up to schedule time at the controls. Results as follows: 1, C. Bristo (2¼ h.p. Enfield); 2, V. Brown and K. Portway (T.T. Triumphs).

Aberdeen and District M.C.C.

This club held its first competition of the season at Cairn o' Mount on Saturday last. The climb was only over the short stretch at the Bridge of Dye, which is, however, the stiffest bit of the whole ascent, while the road surface, though not bad for Cairn o' Mount, left much to be desired. The winners were: 1, J. A. Wood, jun. (3½ Rudge), .041; 2, H. C. Matthew (3½ T.T. Triumph), .026; 3, J. Forrest (3½ Rudge), .025; 4, J. Corbie (3½ Rudge), .024.

Essex M.C.

During the Easter tour the famous Porlock Hill was visited, several attempts were made, but the 8 h.p. Rex-Jap was the only sidecar to make the ascent with passenger. G. E. Revill had hard luck in damaging his Zenith gear, but he detached his sidecar and then made an astounding ascent. A circular run home was made on Monday.

Burnley A.C.

A hill-climb will take place at Crown Point on May 4th. There will be the following classes:

1. Lightweights.—For machines with engines not exceeding 400 c.c. capacity.
2. For machines with engines between 400 and 600 c.c.
3. Open Class.—For machines up to 500 c.c. capacity.
4. Unlimited Class.—Open.
5. Sidecar Combination.—Run on handicap.

The machines must be standard touring motor cycles, and similar in detail to those usually sold to the public.



OFFICERS AND COMMITTEE OF THE TAUNTON AND DISTRICT M.C.C.

(Left to right).—W. J. Spiller, 3½ Triumph. G. F. Arnold, Motosacoche. W. J. Goodman, 2¼ Douglas (sub-capt.) T. G. Crump, 3½ Ariel tricycle (capt.) W. G. Potter, 3½ P. & M. (hon. sec.) A. J. H. Iles, 2¾ Enfield. W. H. Lock, 3½ Rex (hon. treas.)

Club News,—

Redditch and District M.C.C.

Eighteen entries were received for a hill-climbing competition on one of the Cotswold Hills. In the novices class, George White (Douglas), 69 marks, and Ernest Davies (Humber), 66 marks, were first and second respectively. In the private owners' class, K. Holden, 67 marks, was first, and L. Sealey, 66 marks, second, both riding B.S.A. machines. George White was again first in the open class (any machine) with 72 marks, and K. Holden second with 66 marks. The results were worked out on the A.C.U. formula.

The next competition takes the form of a speed-judging contest, between Droitwich and Kidderminster on the 27th inst.

Doncaster and District M.C.C.

The results of the opening run, which took the form of a speed-judging competition to Wetherby, Yorks., a distance of thirty-two miles, are given below: 1, C. Barnsdale (3½ h.p. Rex), total error 4m.; 2, E. Goult (3½ h.p. Rudge), 5m.; 2, J. Wilkinson (5-6 h.p. Matchless and sidecar), 5m.; 4, T. Dew (3½ h.p. Triumph), 5½m. Four prizes are given, and Messrs. E. Goult and J. Wilkinson tie for second prize.

Motor Cycle Union of Ireland (Ulster Centre).

Under the auspices of the M.C.U.I. (U.C.) a most successful and interesting hill-climbing competition was held on Saturday, April 13th, on the mountain road, Derriaghy. The hill measures a little less than 1,000 yards, with one very sharp turn, and a gradient at places about 1 in 4. The surface was in very good condition, and the atmospheric conditions almost perfect.

In the private owners' class the result was:

		Time.
1.	W. F. Adams (3½ B.S.A. T.T.)	50⅘s.
2.	J. Bailie (3½ B.S.A. T.T.)	52⅖s.
3.	J. Martin (3½ Triumph)	57⅖s.

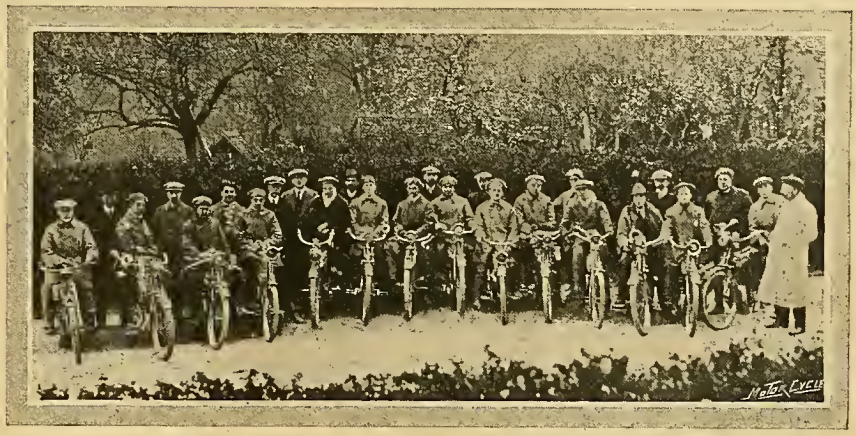
In the open class the handicap brought about a very close result for first place. W. F. Adams (3½ h.p. B.S.A.) and S. P. Corry (3½ h.p. Matchless) tied, but in the run off the former won. Result:

		Time.
1.	W. F. Adams (3½ B.S.A. T.T.)	50⅖s.
2.	S. P. Corry (3½ Matchless)	51⅖s.
3.	J. Stewart (2¾ Douglas)	51⅘s.

The following open events will take place during the season: May 4th, speed trials at Magilligan; June 1st, reliability run, Dublin *v.* Belfast; July 15th, Irish end-to-end reliability run; August 10th, hill-climb.

Wishaw and District M.C.C.

This club, the latest addition to Scottish motor clubs, has already a membership of forty. A hill-climb has been arranged for Saturday, May 11th.



Group of competitors and officials in the Redditch and District M.C.C. hill-climb.

South Birmingham M.C.C.

The members' hill-climb will be held on the 27th inst., by permission, on Wenlock Edge. There will be three classes—lightweights to 350 c.c., heavyweights to 500 c.c., and passenger machines of any capacity—and all events will be decided on A.C.U. formula.

Derbyshire and North Stafford A.C. (Motor Cycle Section).

The Uttoxeter Challenge Cup Competition took place on Saturday, the 13th inst., under most favourable conditions, the weather being grand and the roads in perfect order. The course—Allestree, Duffield, Belper, Shottle, Weston, Kedleston, Allestree—was an excellent one for such a trial, and had to be covered four times, making a total distance of eighty miles. Several stiff hills were encountered.

The competition attracted nineteen entries, including Miss Lottie Berend (2¾ h.p. Enfield) and Miss Walmsley (3½ h.p. Brough and sidecar). The latter, unfortunately, was put out of the running with valve troubles, and Miss Berend, who had made a fine first circuit, generously stopped to help her, and so gave up her place in the competition.

The club has now greatly increased in membership, and has established a ladies' section.

Result (highest possible marks, 200):

1.	M. Nicholson (8 Bat)	186 marks
2.	G. R. Bunnell (3½ Bradbury) ...	185 ,,
3.	J. Birchenough (3½ Rudge) ...	184 ,,



The Llanelly and District Motor Cycle Club is of recent formation, and has already a membership of seventy.

Questions & Replies



A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Leicester to Talybont-on-Usk.

Will you be so good as to direct me the best way and approximate distance to Talybont-on-Usk, Wales? My machine is a 1910 Triumph.—C.D.E.B.

Your best route would be as follows: Leicester, Lutterworth, Rugby, Warwick, Stratford-on-Avon Bidford, Evesham, Tewkesbury, Ledbury, Hereford, Whitney, Three Cocks, Brecon to Talybont. The distance would be approximately 130 miles.

Hill-climbing Formulæ.

On page No. 355 of *The Motor Cycle* I note you refer to a formula which you recommended last autumn, and used by the Canterbury Club in its recent hill-climb I cannot at the moment turn up the issue in which you published particulars of this formula, and should be much obliged if you would send me details of it. At the same time, please give me particulars of the latest A.C.U. formula so that I can compare them. In a hill-climb which I shall be arranging shortly I want to include a class for both passenger and "solus" machines. The former will be for sidecars exclusively, and I should like to know if you can suggest a formula which would do for this class and give satisfactory results. When replying can you give me the name and address of the district surveyor for that part of Oxfordshire which lies just north of Panghourne and Whitchurch, as I wish to write him to ascertain one or two gradients of hills in that district?—R.G.B

The formulæ you refer to are in our issue for September 21st, 1911, pages 976-977; further notes appear on October 5th, pages 1028-1029. The formulæ are as follows:

$\frac{D^2 \times S \times t^2}{W}$ for singles,

$\frac{D^2 \times S \times N \times .9 \times t^2}{W}$ for multi-cylinders.

If you have our capacity table the formulæ can be more simply expressed, $\frac{C \times t^2}{W}$ and $\frac{C \times N \times .9 \times t^2}{W}$. The smallest figure of merit wins. The A.C.U. formula is $\frac{C \times t}{W}$

By the last formula, if the size of the engine be doubled the speed must be doubled to give the same figure, which is impossible. Our suggested formulæ can be used for solus and sidecar machines. Write to the County Surveyor's Office, Oxford.

Overheating.

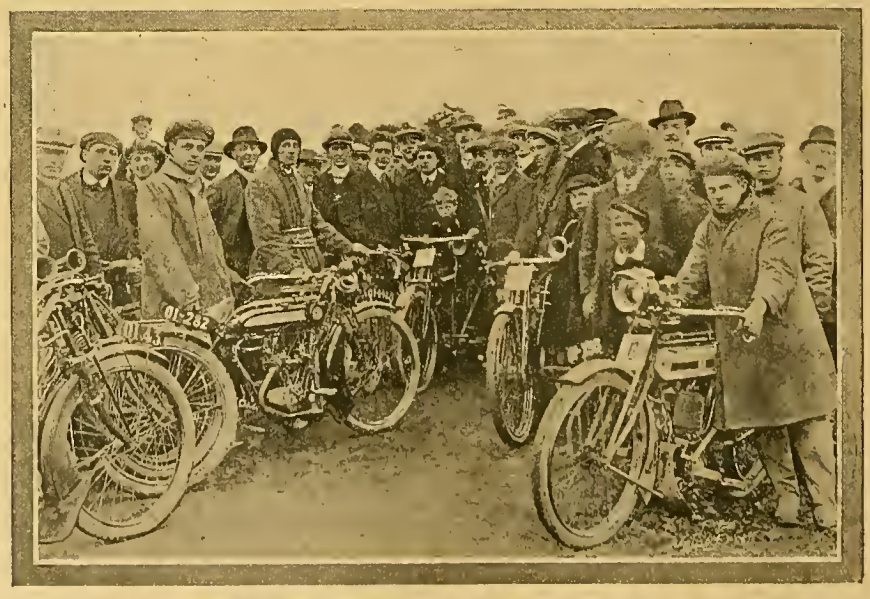
I am a member of the large number of keenly interested motor cyclists with small pockets and, therefore, second-hand machines. I have a 3½ h.p. '07 or '08 Rex, and this machine, though reliable, gets red hot on the cylinder top over the exhaust valve after about ten miles riding at about eighteen to twenty miles per hour. Can you help me by suggesting a remedy? I have watched your questions and replies column for some time, but have seen nothing like this mentioned there. I have had the cylinder head off and thoroughly cleaned it of deposit. I drive with as much air as the machine will take, spark almost fully advanced (magneto), and give half a pump of oil every four or five miles. The machine does not stop running when it gets red hot. I have fitted new piston rings and exhaust valve, but there is, as yet, no improvement. The timing I haven't dared to interfere with yet, but it is as I got it from an agent who has a fairly good reputation. The carburetter is a 1910 B. and B.—A.E.H.

The machine possibly wants thoroughly cleaning out, but the most probable cause is that the magneto wants re-timing and that the spark is occurring too late; this would have the effect you mention.

On the Choice of a Machine.

I am a cyclist of twenty years' experience, and no experience of motor cycling. I propose to purchase a second-hand motor cycle and sidecar for self (12st.) and wife (9st.), and am prepared to spend up to £40. I shall be grateful if you will help me by answering the following questions: (1.) Which makes do you advise me to look out for? (2.) Of what horse-power? (3.) Should I expect a two or three-speed, free engine, and sidecar for the figure named? (4.) Single or twin cylinder? (5.) Would you advise purchasing the motor first, learning to drive, and then fitting a new sidecar? —H.J.S.

(1.) It is against our rules to recommend any particular make. (2.) We should recommend not less than 3½ horse-power. (3.) You should have a change speed gear of some kind, and you might possibly get a machine thus equipped for the money named. (4.) For this price, it would be a single cylinder. (5.) Yes.



M.C.U.I. (Ulster Centre) hill-climbing competition at Derriaghy. Competitors at the start. The winner (No. 7) W. F. Adams is seen in the centre with his 3½ h.p. B.S.A. (See Club News pages.)

Norwich to Hay (Brecknockshire).

Will you oblige by giving me the best route for motor cycle and sidecar from Norwich to Hay, Brecknockshire, together with some idea of the distance? —G.H.B.

Your best route would be as follows: Norwich, Thetford, Newmarket, Cambridge, St. Neots, Bedford, Newport Pagnell, Buckingham, Aynho, Deddington, Chipping Norton, Stow-on-the-Wold, Tewkesbury, Ledbury, Hereford, Willersley to Hay. The distance is approximately 255 miles.

Sidecar Licence.

I should be glad of your opinion regarding the question of licence duty on a sidecar. The revenue authorities here (Edinburgh) hold that a motor bicycle with a sidecar is liable to two duties—one of £1 for motor cycle, and one of 15s. for sidecar being a carriage. The contention is that the sidecar is a carriage within the meaning of the Customs and Inland Revenue Act, 1888, which says that the expression "carriage" means and includes any carriage drawn or propelled upon a road by steam or electricity, or by any other mechanical power. The reason given for not including the sidecar in the duty of £1 for the motor cycle is that in the Finance (1909-10) Act, 1910, which imposes the duty, is a clause which says that the expression "motor car" includes a motor bicycle and a motor tricycle, but does not include a vehicle drawn by a motor car. As the matter is one of considerable importance to myself and to your readers, I would be glad to learn if the question has been raised before, and, if so, with what result?—LEITH.

Scotland holds definitely that a sidecar and motor bicycle are one vehicle. Let your local authority hold what it likes—refuse to pay more than £1 for a three wheeled vehicle. If you receive a summons, or are threatened with prosecution, immediately report the matter to the secretary of the Auto Cycle Union (Legal Department), 89, Pall Mall, S.W., and your case will probably be taken up free of charge.

Variable Gears.

Will you please let me know—(1.) Which is the best machine for sidecar work—3½ h.p. Premier or 3½ h.p. Macbeth-Precision, either with the Armstrong three-speed gear and F.E. clutch? (2.) Can the machine be started from rest from the saddle with the back wheel on the ground, or do I have to push off? (3.) Can the gear be changed without disengaging the clutch whilst running? (4.) Is the Albion two-speed and free engine hub gear a good one? (5.) How much does it cost for driving licence and registration of a motor cycle? Is there any other expense? Is any further licence required for a sidecar? Will you please instruct me as to the best method to go about this?—C.A.H.

(1.) Both machines are first class, (2.) A machine fitted with the Armstrong hub does not allow the engine to be started with the wheel on the ground. The machine can be put on the stand, engine started, and the wheel then placed on the ground, the clutch having been previously withdrawn, or you can push off. (3.) Yes; but it is desirable to declutch or raise the exhaust when changing up. (4.) The Albion two-speed is excellent. (5.) In addition to the driving licence and registration (5s. each) you must take out, at any post office, a local taxation licence (cost £1). No additional licence is required for a sidecar, but register the machine as a tricycle.

Starting away from the garage.



READER'S REPLY.

Melton Mowbray to Cromer.

I go to East Runton, near Cromer, every year for my summer holiday, and I always go by motor cycle *via* Saxby, Buckminster, Colsterworth, Corby, Bourne, Spalding, Holbeach, Long Sutton, and King's Lynn. From Lynn take the middle road to Fakenham *via* Roydon Station, Weasenham, and Toft-trees (the upper road *via* Hillington and Dunton was execrable last summer), and so on to Holt and Cromer. The road from summer. Your querist must be careful between Fakenham and Holt, especially if he arrives there towards dusk; there is a sharp right-angle turn to the left, followed immediately by a similar turn to the right just before you reach Holt. Last year at this corner an unfortunate motor cyclist with a brand new machine had a bad accident; he had gone straight ahead in the failing light at 35 m.p.h. into the hedge and bank, hoping to reach Holt by lighting-up time. E. PERCY SMYTH.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"J.C.J." (Streatham).—2¾ h.p. or 3½ h.p. Wuduna-Arno.

"S.J.F." (Ainsdale).—Binks and Lukin carburetters.

"W.A.C." (Birmingham).—Rollo cyclecar or other make with four wheels.

"R.T.M." (Smethwick) Mabon clutch with 5-6 h.p. motor cycle and sidecar.

"M.P.S." (Dublin).—Mabon clutch on 3½ h.p. Triumph with sidecar.

"J.K." (Huddersfield).—3½ h.p. Zenith-Gradua and Rudge Multi with sidecar.

"R.C." (Scarborough).—Lincoln-Elk, petrol consumption and hill-climbing.

"C.W.S.S." (Cheadle).—Mabon, Bowden, Albion, and Millennium gears on an old pattern 3½ h.p. Triumph with sidecar.

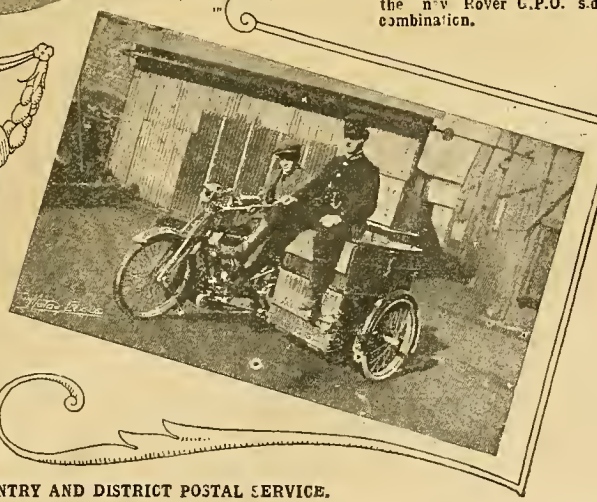
"H.R.W." (W. Norwood).—Villiers clutch.

"J.K.W." (Westcliff).—6 h.p. Zenith and 5 h.p. Clyno.

A tester initiates the postman in his new duties.



Teaching a postman to drive the new Rover G.P.O. sidecar combination.



THE MOTOR CYCLE IN THE COVENTRY AND DISTRICT POSTAL SERVICE.



A NOVEL SIGNPOST.

A fortnight ago we referred to the curious signpost erected at Mason's Hill, Bromley. We are now able to illustrate it.

Carburetters and Hill-climbs.

In three open hill-climbing competitions, viz., Oakamoor, Leathley Bank, and Brigsteer Brow, we are informed machines fitted with Amac carburetters won thirteen different classes besides several seconds and thirds.

Three-wheeled Cyclecars.

The makers of the Wall tricycle, A. W. Wall, Ltd., Hay Mills, Birmingham, are prepared to arrange trials of the standard two-seater either at the works or in London. The 1912 illustrated catalogue is also ready and will be forwarded on application.

Tyre Successes.

Clincher motor cycle tyres scored a signal success at the Staxton Brow hill-climb in the class for standard touring singles, the three Norton machines which finished first, second, and third, being fitted with these tyres. The winner of the Tranmer Trophy, who also made fastest time of the day, used the same make of machine and tyres.

Neat Repair Outfit.

The Severn Rubber Co. have sent us a neat motor cycle repair outfit, which is contained in a metal box measuring 5in. × 4in. × 1½in. The solution is specially prepared for use with Severn patches, and is kept moist and in good order by being packed in a circular tin box provided with screw lid which cannot work loose. The outfit includes a good supply of Severn specially prepared patches of various sizes, oval and rectangular, glass paper, prepared canvas, chalk, valve rubber, etc. Experience with these patches and solution enables us to recommend them with every confidence, if the solution be well rubbed in and the tube properly cleaned before applying the patch; the repair will last practically indefinitely.

SPARKLETS

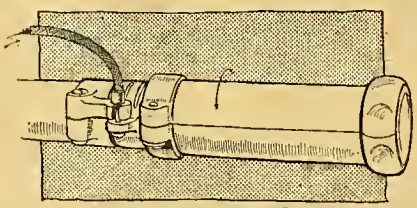


Easy Payment Systems.

Among the firms which make a speciality of supplying motor cycles on the easy payment plan are the Wincycle Trading Co., Ltd., 106, Great Saffron Hill, E.C. An illustration of their latest model was published on March 28th, page 358.

A New Twisting Grip.

The sketch herewith illustrates a new twisting grip designed and manufactured by Charles Binks, Ltd., mainly for racing purposes. The grip is made suitable for almost any handle-bar, and can be fitted in a few minutes. The two halves are placed over the bar, and held in position by a screw clamp. The halves can then be tightened by means of screws till the desired amount of friction be obtained. The grip is supplied well finished and plated. We hear



that racing experts pronounce the device excellent, as it is difficult and dangerous to release one's hold of the handle-bar to alter the usual type of control levers when travelling at high speeds.

The Jarrott Cup Winner.

Harold Karslake's 3½ h.p. Rover, which won the Jarrott Cup this year, was fitted with Bates new pattern tyres and Lyso belt. Karslake went through the trial without a puncture or a stop of any kind due to tyre trouble.

Catalogues Received.

The latest catalogue issued by G. Raws and Sons, Oldhall Street, Liverpool, gives particulars and illustrations of this firm's Albany clothing. The Albany All-season jacket is fitted with a detachable lining.

The special features of "The Duo," a four-wheeled runabout, made by Duo Cars, Ltd., are described in a well illustrated quarto catalogue just to hand. The offices and showrooms of this firm are at 76, York Street, Westminster.

The new catalogue of the Royal Enfield motor cycles is a most interesting pamphlet. Besides full specifications of the four models, it contains details and drawings of the Enfield two-speed gear, friction clutch, cush drive, lubrication methods, and other particulars that should be carefully studied by purchasers. There is also a sectional view of the 2¾ engine, and the catalogue, which can be obtained from the Enfield Cycle Co., Redditch, concludes with a list of some of the numerous successes.

A Farewell Gathering.

To bid farewell to Mr. A. Mellano, the popular manager of the Hutchinson Tyre Company, a dinner was given at Guermani's Restaurant, Dean Street, on the evening of the 18th inst. Mr. Mellano, whose arrival was greeted with great enthusiasm, is about to leave England to take up the management of the Italian business of the company. The gathering was an informal one, and throughout the evening demonstrations were given of the affection with which the firm regard Mr. Mellano. Mr. E. M. P. Boileau was present on behalf of *The Motor Cycle*.



The photograph depicts what is undoubtedly the first cyclecar wedding. It was taken on the occasion of the marriage of the Rollo Car Co.'s works manager at Christ Church, Sparkhill, Birmingham. After the ceremony the happy pair left for a tour in North Wales.

—The simplest, most adaptable, and safest method of control over the working parts of your bicycle is best attained unquestionably by

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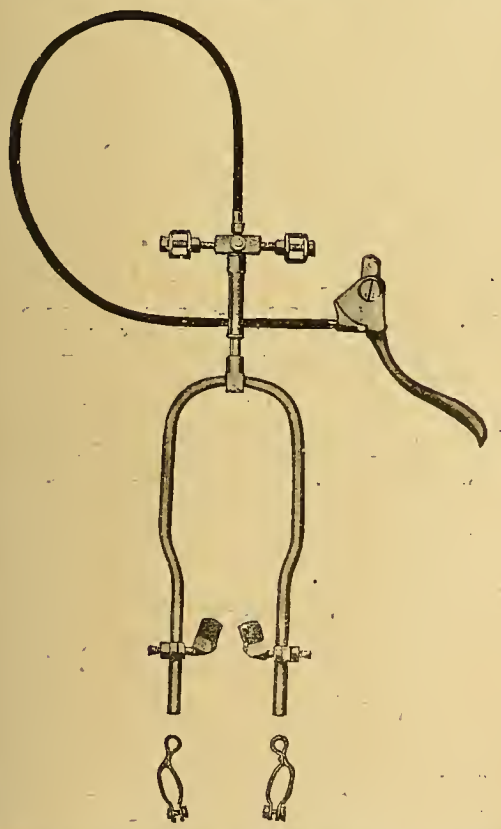
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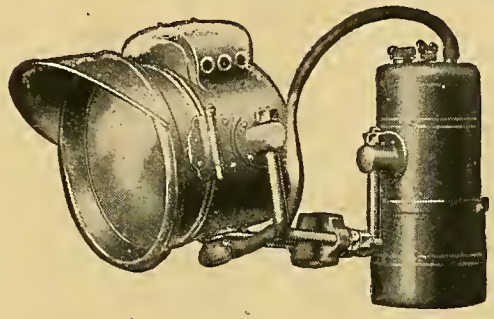


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MODEL 125. The "P. & H." A powerful Projector Lamp fitted with a "Roni" Non-carbonising burner, 4 in. specially silvered Mangin Mirror, and best plate-glass bevelled Convex Lens. Special Adjustable Bracket, upon which the Lamp can be reversed if required. Special Generator, of highest quality and efficiency, complete with best grey rubber Tubing connection.

Height.	Weight.	Front.	Lens.	Best Finish
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ready for attaching to Cycle in either position—on Handle-bar, Stem, or usual Lamp Bracket.

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1910	TRIUMPH, free engine	£37
1911	INDIAN, 5 h.p. F.E.	£42
1911	TRIUMPH, 3½ h.p.	£36
1911	PREMIER, 3½ h.p.	£31
1911	TRIUMPH, free engine	£44
1911	RUDGE, free engine	£33
1910	REX, 3½ h.p. F.E. (new)	£38
1911	KERRY-ABINGDON, 3½ h.p.	£31
1911	BRADBURY, free engine	£38
1907	TRIUMPH, 3½ h.p.	£21
1911	KERRY, 3½ h.p. two-speed	£35
1911	DOUGLAS "D," 2¾ h.p.	£29
1910	TRIUMPH, 3½ h.p.	£31
1910	REX SPEED KING 3½ h.p.	£25
1908	BROWN 3½ h.p., Roe gear	£25
1908	RUC, 5 h.p., F.E., and Sidecar	£25

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Open Reliability Trial
May 4th, 1912.

Entries close definitely SATURDAY, APRIL 27th, to J. F. SPENCER, Trials Hon. Sec., Priory Mill, Coventry.

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EVERY SATURDAY.

A SMALL ADVERT.
—IN—
"THE MOTOR CYCLE"
will soon find a customer for your second-hand machine.

SECOND-HAND MOTOR CYCLES

at from 2/- to 5/- in the £ discount!

This means that we are going to move the stuff! If you have not had a list you OUGHT to have had one. Get on the jump and let us have that postcard, and we will send you one straight away. Look through the list; spot a machine to suit you; make us a cash offer, or deferred payment offer, and be handy about it; and you will have a machine through in about three days. The coal war is now settled for the time being, and everyone is more or less pleased with themselves, so that it is time you got a bike. You will find it come in handy in view of a possible railway strike. However, we have got used to strikes now, and it is no use worrying about the matter. Get a motor cycle, and thus have a means of locomotion of your own at hand, and you are then independent of everything in this respect.

We are not advertising for amusement! Please note! We INTEND TO SELL. If you won't buy at our price, let us have your offer, and we will try and sell at your price. The makers are deluging us with new stuff every week, and we do not know where to put it. We have been telling you this tale for a month, and although the second-hand machines are going fairly satisfactorily, we want them to go quicker. Remember twenty or thirty new machines are coming in every week, and these take up room. We have also several cars coming through, and these will take up more room still, so that between the lot we want your assistance to shift the second-hand stuff. If you have not enough money, let us know how much you have, and we will get on the jump and try and sell you a machine. If you will be quick we will be able to sell you a machine as quick as a packet of Woodbines. You cannot go wrong with us. If you can come down, we will show you the stock, and let you try a machine on the road; this will be far better than sending you one. The railway companies are now running excursions, we believe, and if you cannot get one of these, you can always get a cheap ticket, or it will pay you to come by the ordinary train. If you cannot possibly come over, send for a list, and spot a machine, and we will send same along to you. If it is not as per specification, **you can return within three days, and have your money back in full;** or we are pleased to exchange at any time for another machine.

We are offering you all sorts of tempting terms, and we want your trade. Don't wait while the summer comes. Get on the jump now! There is no time like the present!

We can suit every man, even down to the man with only 50/- in his pocket. You can become the owner of any accumulator machine in our garage for £7 10s. cash down. If this is too much for you, you can have one for £4 19s. 6d.; and if you cannot spring this far, have another packet, and have one for 50/-. These are machines that will run, not something to look at. The prices are ridiculous, but the quality is good, and we intend to shift them. If your fancy lies in the direction of a magneto machine, you can have one from £12 10s. upwards. There is no price too low for us, nor yet is there any too high. We can fit you up with a new or second-hand Matchless, Jap-Bat, Clyno, Scott, P. & M., Bradbury, Zenith, Motosacoche, Humber, Douglas, Premier, Morgan Runabout, A.C. Trica, and heaps of other machines, which you can pay for on cash or deferred terms. We will guarantee our stock to be the largest in the world. We are not out to tell you a tale and drop you in. All we ask you is if you have not seen our stock to come across someone who has seen it, and see what they have to say about it. Many firms advertise whose stock is not one-twentieth as large as ours, and yet on paper they make quite as good a show as we do. You don't know what our stock is like without seeing our list. We cannot afford to publish it in the paper and tell you the tale besides.

We have no interest in any other firm in the kingdom, therefore don't mix us up with others. When you are finished with our list, pass it on to your pal, so that it becomes a rolling stone.

If you don't know where Morecambe is, we will tell you. It is three miles from Lancaster, the capital town of Lancashire. If you live in Ireland, you can come across by boat to Heysham, which is three miles from Morecambe. The roads around here are excellent—the finest in the kingdom. You can come by train, and ride the motor cycle back.

There are one or two things that we want to tell you this week. (1.) We cannot let motor cycles go and accept payment by cheque from strangers. (2.) If you run into a wall with a motor cycle, we cannot guarantee to repair it for nothing. (3.) We cannot send a mechanic down to, say, Wolverhampton to show you a motor cycle, as our men are too busy at home for anything of the kind. If you will come up here, however, we will show you what we have, and let you try one on the road, and we can guarantee to give you satisfaction. (4.) We can supply you with a great deal better value than anybody else, but we cannot supply the impossible, such as, for instance, a 1911 P. & M. or F.E. Triumph for £25. We can do a lot, but our reply to an enquiry of this sort would, we fear, be of a kind that would be anything but pleasing to you. We are not out to act the goat for anybody, although if you said such an enquiry was in the nature of a joke, we might be able to appreciate it.

Another thing, boys, we don't open on Sundays. By Saturday night we have had quite enough of it, and if we cannot make sufficient money in six days we will not take the trouble to try and do so on the seventh. Remember, we put in twelve or thirteen hours every day of the six in the week; and if any of you do the same, we are sure you will not feel inclined to work on the seventh any more than we do.

We have still any amount of accessories to shift, both new and second-hand. The stock seems enormous, and we want you to help us to get rid of it. You cannot do better than make up your minds to have a week-end at Morecambe. You can then get a machine, new or second-hand, and buy all the accessories you want while you are in Morecambe. We have told you before that we are agents for all the very tip-top stuff, and the fact that such people as P. & M., Matchless, Scotts, Clyno, Bradbury, Humber, and Jap-Bat, and all the rest of the makers consider us sufficiently good business people as to accept our orders for thousands of pounds worth of machines should make it quite clear to you that we are a firm of sufficient standing to justify your placing your orders with us.

Till next week, boys, good-bye!

Hitchen's, Ltd., Morecambe.

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THE TRUMP-JAP

The most perfect development of motor cycle construction.

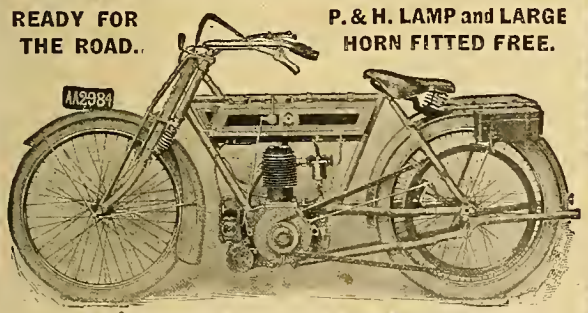
RELIABILITY, SPEED, COMFORT.

THE Machine for the Expert.

THE Machine for the Novice.

READY FOR THE ROAD.

P. & H. LAMP and LARGE HORN FITTED FREE.



3½ h.p. or 6 h.p. J.A.P. Engines.

FREE ENGINES. TWO AND THREE SPEED GEARS.

Write for our Catalogue and long list of Successes. They are interesting.

TRUMP MOTORS, Ld., 35, John Bright St., Birmingham.

Agents—London: Godfrey & Applebee, Ltd., 208, Gt. Portland Street.; Manchester: St. James' Cycling Stores, Oxford St.; Belfast: Alex. Bullick 39, King Street; Edinboro': Alexander & Co. 108-110, Lothian Road; Glasgow: Alexander & Co., 272, Gt. Western Rd., Darlington: W. E. Dove & Co., Bondgate; Bedford: Birmingham Cycle Co., 105, Midland Rd.; Leicester: Tom Cann, Ltd., Applegate Street.

FOR DEFERRED PAYMENTS

¼ down and balance in 12 monthly equal payments.

HARRODS

THE BEST HOUSE for MOTOR CYCLES

SIDECARS OR RUNABOUTS

Sole Concessionnaires of the celebrated

MORGAN RUNABOUTS.

Stockists of G.W.K. MOTORETTE, SABELLA, ROLLO, etc., etc.

Finest motor cycle showrooms in London.

NOTE ADDRESS:

HARRODS LTD.

(Richard Burbidge, Managing Director),

Brompton Road, LONDON, S.W.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 12 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.
SECTION II.
York and Lancashire.
SECTION III.
Carnarv Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.
SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.
SECTION V.
Norfolk Suffolk, Cambridge, Huntingdon, and Bedford
SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgao, Carmarthen, Cardigan, and Pembroke.
SECTION VII
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants. Channel Islands.
SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.
SECTION IX
Somerset, Devon, Dorset, and Cornwall.
SECTION X.
Scotland.
SECTION XI.
Ireland and Isle of Man.

BARGAINS THAT SATISFY EVERY BUYER.

Britain's Biggest Selection of every make of motor cycle, new and second-hand. 1912 models delivered from stock or at earliest dates of any house in the trade. Lowest prices for cash. Best allowances for exchanges. Ask for to-day's list.




AT

WAUCHOPE'S

5300.	2	h.p 1910 **MOTO-REVE**	£18 10
5302.	3½	h.p. **QUADRANT**	£15 0
5306.	3½	h.p 1910 **P. & M.**	£42 0
5308.	3½	h.p. 1911 2-speed **HUMBER** and Sidecar	£42 0
5309.	3½	h.p. 1908 **TRIUMPH**	£25 0
5210.	3½	h.p. 1908 **MINERVA**	£16 10
5315.	5	h.p. 1911 Twin **REX DE LUXE**	£40 0
5320.	4	h.p. 1908 2-speed **ROC**	£20 0
5330.	7	h.p. 1911 **INDIAN**	£42 0
5332.	5-6	h.p. 1911 4-cyl. **F.N.**	£33 0
5338.	2¾	h.p. 1912 **DOUGLAS**, Model K	£49 0
5331.	3½	h.p. 1912 **P. & M.**	£60 0
	3½	h.p. 1911 Free-engine **SINGER**	40 Gns.
	3½	h.p. 1912 T.T **RUDGE**	40 Gns.
	3½	h.p. 1911 Standard **TRIUMPH**	£40 0
5275.	8	h.p. 1911 Standard **MATCHLESS**	£45 0
5124.	3½	h.p. 1909 **P. & M.**	£35 0
5192.	3½	h.p. 1911 2-speed **HUMBER**	£37 10
5193.	5-6	h.p. 4-cyl. **F.N.** and Sidecar	£20 0
5195.	2	h.p. 1908 **MOTO REVE**	£17 10
5214.	7	h.p. 1909 2-speed **V.S.**	£33 10
5216.	2¾	h.p. 1911 Standard **DOUGLAS**	£28 0
5222.	2	h.p. 1910 **MOTO-REVE**	£17 10
5225.	3½	h.p. 1911 2-speed **HUMBER**	£37 10
5230.	3½	h.p. 1909 **TRIUMPH**	£28 0
5237.	2¾	h.p. 1911 Standard **DOUGLAS**	£28 0
5239.	3½	h.p. 1909 **TRIUMPH**	£29 0
5241.	3½	h.p. 1911 Speed King **REX**	£30 0
5242.	3½	h.p. 1910 **LINCOLN-ELK**	£22 0
5243.	2¾	h.p. 1911 Standard **DOUGLAS**	£30 0
5246.	3½	h.p. **ANTOINE**	£15 0
5253.	3½	h.p. 1908 Twin **PEUGEOT**	£18 0
5261.	3½	h.p. 1911 Cone Clutch **REX**	£35 0
5262.	3½	h.p 1911 2-speed **HUMBER**	£37 10
5271.	4½	h.p. 4-cyl. **F.N.**	£18 10
5275.	8	h.p. 1911 Standard **MATCHLESS**	£45 0
5276.	3½	h.p. **FAFNIR** and Sidecar	£20 0
5277.	2½	h.p. 1910 2-speed **F.N.**	£25 0
5285.	2	h.p. 1910 **MOTO-REVE**	£20 0
5293.	2¾	h.p. 1911 **ENFIELD**	£28 0
5124.	3½	h.p. 1909 2-speed **P. & M.**	£35 0
5118.	2	h.p. 1911 **HUMBER**	£26 10
5107.	2¾	h.p. 1911 Standard **DOUGLAS**	£28 10
5066.	3½	h.p. 1911 **BRADBURY**, Mabon cl.	£37 10
5064.	3½	h.p. 1911 2-speed **HUMBER**	£37 10
5055.	3½	h.p. 1911 **L.M.C.**, variable gear	£35 0
2065.	2	h.p. 1909 **MOTO-REVE**	£17 10
4046.	1½	h.p. **MOTOSACOCHE**	£11 10
4249.	3½	h.p. 1911 Standard **BAT**	30 Gns.
4322.	3½	h.p. 1911 2-speed **N.S.U.**	£35 0
4420.	3½	h.p. 1911 Free-engine **PREMIER**	£38 10
4474.	3½	h.p. 1910 **PREMIER**	£27 10
4506.	3½	h.p. 1911 Clutch **REX**	£33 10
4531.	3½	h.p. 1910 2-speed **SCOTT**	£32 10
4546.	3½	h.p. 1911 **KERRY-ABINGDON**	£32 10
4628.	3½	h.p. 1910 **TRIUMPH**, Mabon variable gear	£38 0
4631.	3½	h.p. 1909 **J.A.P.**	£22 0
4662.	4½	h.p. 1909 4-cyl. **F.N.**	£20 0
4701.	2¾	h.p. 1909 Twin **N.S.U.**	£18 0
4727.	3½	h.p. 1911 **KERRY-ABINGDON**	30 Gns.
4729.	2½	h.p. 1910 **ROYAL ENFIELD**	£22 0
4735.	3½	h.p. 1910 **QUADRANT**	£25 0
4752.	2½	h.p. **J.A.P.**	£7 10
4759.	3½	h.p. 1910 2-speed **BRADBURY**	£35 0
1700.	5	h.p. 1911 Free-engine **INDIAN**	£39 10
4776.	3½	h.p. 1911 Free-engine **TRIUMPH**	£43 10
4799.	3½	h.p. 1909 **TRIUMPH**	£28 10
4784.	3½	h.p. 1911 T.T. **ARIEL**	£28 10

9, SHOE LANE, FLEET STREET, LONDON, E.C.

Wires: Opificer, London. 'Phone: Holborn 5777.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

REX de Luxe, 1909, 5h.p. twin, Roc 2-speed, splendid condition; £23.—Sanderson, chemist, Fence Houses.

N.S.U., 3h.p., perfect running order; trial offered; £10/10. — Kelvey, 5, Victoria Terrace, South Shields.

1912 Zenith, 6h.p.; owner cannot take delivery; what offers? no trade.—Box 234, *The Motor Cycle* Offices, Coventry.

1911½ T.T. Roadster Triumph, absolutely like new, very fast, all spares; £40.—232, *The Motor Cycle* Offices, Coventry.

BRADBURY, 3½h.p., 1911 model, perfect condition, accessories; £35, or reasonable offer.—19, Portland Terrace, Newcastle-on-Tyne.

TRIUMPH, 1911, free engine, excellent condition; tyres good, new belt, lamp, horn, and spares; £43. —Clark, 15a, Lonsdale St., Carlisle.

6½h.p. Chassis, less engine, tubular frame, 2-speed, reverse, ball bearing wheels, good tyres; sacrifice £7/10.—Nixon, Brampton, Cumberland.

1910½ 3½h.p. Tourist Trophy Premier, enamel'ed cream and gold leaf everything as new; £30; trial.—Elliott, Schools, Brampton, Cumberland.

1911 3½h.p. Ariel, decompressor, free engine, variable gears; list price £51/5; never been run; sacrifice £45.—Martindale, architect, Carlisle

MOTOR Cycle, 1912, free engine Bradbury, offers; 1911 4h.p. 2-speed Quadrant, £40; 1911 7h.p. free engine Rex, £36.—Walker, Fishburn, Ferryhill.

3½h.p. Motor Cycle, good condition, Michelin, Dunlop, Stanley-Dermatine, spares, tools, suit beginner; nearest £12.—Thornley Vicarage, Tow Law, Durham.

TRIUMPH 1912 T.T. Roadster, practicaly new, lamp, horn, belt bag, spare tyre, tube, belt, valve, etc.; £48, a bargain.—Cyril Walker, Hill View, The Park, West Hartlepool.

TRIUMPH, bought new 1910, in fine condition, only used week ends, faultless throughout; £32, or exchange for late powerful twin, cash adjustment.—Particulars, 84, Gainsborough Grove, Newcastle.

ARNO, the ideal machine.—3½h.p. T.T. model, £46; Tourist model, £45; 2¾h.p. medium, 39 guineas; 3½h.p. 2-speed and free engine, £55; sidecars to fit any machine in stock.—Myers, Neville's Cross, Durham.

TRIUMPHS, Humbers, B.S.A., Royal Enfield motor cycles, lightweights, 2 speeds, free engines; write, wire, or 'phone for immediate deliveries.—Turvey and Co., The Motor House, Sunderland. Tel.: No. 626.

HUMBER, 3½h.p., 1910 late, Roc 2-speed, free engine, handle starting, Cowey, owner having died after long illness, total mileage ridden under 200 miles, plating, enamel unscratched, absolutely new condition, in perfect order, all tools, accessories; cost £60, sacrifice £40, or nearest offer.—Hutton Wilson, Egglescliffe.

The Halifax Motor Exchange

Largest Rex Dealers, 16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams, "Pertection."

£3 to £5 DOWN and 5/- weekly secures prompt despatch of

Twin Magneto **MOTO-REVE**	£15 0
3½ h.p. **FAFNIR**, low frame, h.b. control	£13 10
Twin **REX**, spring forks	£16 10
3 h.p. **QUADRANT**	£10 10
2¾ h.p. **KERRY**, spring forks	£10 10
3 h.p. **HUMBER**, chain drive	£8 10
3½ h.p. **WOLF**, spray, smart, h.b. control	£11 10
3½ h.p. **BRADBURY**	£12 10
2¾ h.p. **DE DION**	£10 10
3½ h.p. **BROWN**, h.b. control, very powerful	£14 10
2½ h.p. **J.A.P.**, spring forks	£8 10

£7 deposit and 5/- weekly secures

2¾ h.p. Mag. **MINERVA**, chain drive	£16 10
3½ h.p. Magneto **SINGER**	£15 10
Four-cylinder **F.N.**, magneto	£19 19
3½ h.p. Magneto **REX**	£19 19
Twin **MOTO-REVE**	£19 19
F.N. Magneto Lightweight	£19 19
2½ h.p. **REX** Magneto Lightweight	£16 10

1911 REX BARGAINS.

	Makers' price.	Ours.
3½ h.p. Rex Tourist	43 guineas	34 guineas
3½ h.p. Free-engine	48 guineas	37 guineas
3½ h.p. 2-speed de luxe	57 guineas	46 guineas
5 h.p. 2-speed de luxe	60 guineas	49 guineas

All new and guaranteed. Exchanges liberally dealt with.

1912 DE LUXE SIDECAR

£6 6s.



"Exchange," with Continental motor cycle tyre	£5 5 0
"De Luxe" type, with best tyre, apron, etc.	£6 6 0
Ditto, with reversible child's seat	£7 0 0
Ditto, with best coach-built body	£7 12 6

Improved Quick Detachable Joints, cranked extra strong back axle and spindle, tip up body, and caged ball races to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

Discount to trade. Exchanges entertained.

GUARANTEED IN RUNNING ORDER.

1912 6 h.p. **REX** Sidette, chain drive, new model	
1912 3½ h.p. Standard **BRADBURY**, NEW	£43 0
1912 2¾ h.p. Two-speed **REX** Junior, NEW	£45 0
1912 Twin **REX** Sidette, NEW	£75 0
1911 Two speed **REX** Junior, as new	£31 10
1911 3½ h.p. Tourist **REX**, done 750 miles	£32 10
SCOTT 2-speed, Aug., 1910	£37 10
1911 3½ h.p. 2-speed **HUMBER**	£38 10
1911 3½ h.p **REX**, clutch model	£47 10
1911 5 h.p. Two-speed **REX DE LUXE**	£47 10
1910 7 h.p. Twin **REX**, HOT STUFF	£37 10
1910 5 h.p. Twin **REX**, special finish	£28 10
1910 5 h.p. Twin **REX**, NEW	£34 10
1910 3½ h.p. **REX**, very fast, special machine	£27 10
1910 **ROYAL ENFIELD**, smart	£22 10
5½ h.p. Two-speed Twin **ROC**, magneto, Druids.	£32 10
Brand New 3½ h.p. **REX**	£29 10
3½ h.p. Two-speed **N.S.U.**, smart	£21 0
1908 3½ h.p. Magneto **REX**, spring forks	£22 10
3½ h.p. **REX**, very fine condition	£15 10
Four-cylinder **F.N.**, magneto, spring forks	£18 18
3½ h.p. **WOLF**, Stevens engine, h.b. control	£12 10
3 h.p. **QUADRANT**, low frame	£10 10
2¾ h.p. **KERRY**, spring forks	£10 10

Easy Payments at Special Rates.

SUNDRIES.

1912 De Luxe Sidecar, nearly new	£5 5
Rexette Chassis, with body and tyres	£7 10
XL-ALL forks	8/6
Monocar Frame, 4-wheeler, with axle and tyres	£6 10
Backrest, to fit XL-ALL saddle	7/6
Triumph Pattern Horns, New	4/6
New Cane Sidecar Body	17/6
Brook's B100 Saddle	9/6
New Large Lycett's Saddle	9/6
Wicker Sidecar Body	10 6
Cane Sidecar Body, New	17/6
New Sidecar Aprons with studs	7/6
Plated Rex Pattern Handle-bars	6/6
New 20-amp. Fuller Accumulator	11/-
New Harrison's Backrest, usual price 12/6, ours	9/6

MOTOR BICYCLES FOR SALE.

GREAT Sale of motor cycles.—3½h.p. Rex, £7/10; 4h.p. Chater-Lea, magneto, spring forks, B. and B., £12; 3h.p Triumph, £9; 1909 Douglas, £18/10; 1911 Kerry-Abingdon, £28; 5-6h.p. Rex, 1909, twin-cyl., free engine, and sidecar, £25, worth £40; 1908 Triumph, new condition, £25; P. and M., nearly new, 2-speed, free engine, £37/10; we have about 60 second-hand motor bikes in stock, consisting of 1907, 1908, 1909. 1910 Triumphs, prices from £15; several Bradburys, Singers, Moto-Reves; all machines sold are warranted in good order; sidecars from 50/-.—The Motor Cycle Exchange, 160, Young St., Sheffield.

NORTHERN Depot, Ltd., "Everything Motorish," Leece St., Liverpool. T.A.: Depend. Tel.: Royal 5029 — Machines in stock. 3½h.p. Rex-Jap, 2-speed, also 4h.p. ditto, clutch; Kerry-Abingdons, 4h.p. clutch and Cob models; 2h.p Humber lightweight; clutch Rudge and Millford, done 700 miles. Sidecars in stock—Milford, Herald, Northern special cane torpedo, d.c., and storm apron complete, £13. Northern special, 5 gns., with cranked back axle. Book for delivery in 1 week 2-speed Clyno and Cancelet sidecars; A.C. Sociable for May 7th; first deposit secures either Northern warbling whistle, h.b. Bowden control, suit single or multi-cylinder engines, 21/- post free; Garner whistles, brass or p'ated 12/6 post free. The best motor cycle suit made, absolutely guaranteed, and contains no rubber, post free 35/- and 47/6; send chest measure. Avon tyres, all patterns post free per return. Lycett belts, all sections and lengths post free; Xl'all saddles in stock; Cowey speed indicator with special brackets for A.C. Sociable, 9/-, post free lined heavy gloves from 5/6, with gauntlets; chamois gloves from 1/3; dust jackets and overalls; special display of sidecar and carrier luggage cases; Northern side car dust screens, 7/6; everything for motor cyclists in stock.

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby Stafford, Shropshire, Montgomery, and Merioneth.

3½h.p. Minerva, running well, has sidecar; £10, or near offer.—Williams, Navy League, Liscard.

ENFIELD, 1911, shop soiled, 2¾h.p., 2-speed, free engine; 45 guineas.—Oakley, Station Rd., Hednesford.

2¾h.p. Twin Moto-Reve, run 220 miles only; wert £35, accept £25.—Brown, Gloucester Rd., Chesterfield.

1911 Bradbury, 3½h.p., good appearance and tune, very fast; £35.—Slack, Spring Place, Chesterfield.

3½h.p. Roc, magneto, free engine, handle starting, perfect condition; trial.—23, Sitwell St., Spondon, Derby.

T.T. Rex, 5-6h.p., 1910, wants carburetter, otherwise perfect; £17, must sell, offers.—34, Pinradise St., Northwich.

3½h.p. Minerva, h.b.c., spring forks, Whittle, footboards, tyres good.—R. Nodder, Ashover Rectory, Chesterfield.

1910 Enfield Lightweight, perfect order: £21; push bike or old motor taken part payment.—Spaun, Aston, Nantwich.

1912 Scott, new, just delivered in crate; first cheque £70 secures.—Box No. 288, *The Motor Cycle* Offices, Coventry.

N.S.U., 3½h.p., magneto, new cover and tube on back, spare tube belt, lamp, in good condition; £18.—T. Wells, Biddulph.

TRIUMPH, 1909, free engine, speedometer, moderately used, and exceptionally good condition; £32.—2, Harold St., Egremont.

6h.p. J.A.P., perfect condition, B. and B. carburetter, Bosch, magneto, eats hills; £25; going abroad.—22 Lime Grove, Timperley.

1911 Bradbury, 3½h.p., good tyres and belt, smart and powerful; must sell, £30.—Box No. 309, *The Motor Cycle* Offices, Coventry.

3½h.p. Premier, late 1910, just overhauled, splendid condition, lamp, horn, etc., with sidecar; £52.—W. Wood, Aston Rd., Wem, Salop.

1911 Chater-Jap, Bosch, B. and B., Lucas, spare valve and tools; £26/10, or £25 without lamp set.—C. Alcock, 16, Mardol, Shrewsbury.

2½h.p. J.A.P., torpedo tank, h.b.c., 26in. wheels, extra low; genuine bargain 12gns. cash; trial.—Ford, Rose Dale Cottage, Dove Holes, Buxton.

1910 Douglas, first-class order, 2¾h.p., fast and powerful, very smart and good appearance; £2.—Box No. 310, *The Motor Cycle* Offices, Coventry.

1910 Douglas, 2¾h.p., this machine is in the pink of condition, new tyres and belt, £24/10; approval.—Box No. 308, *The Motor Cycle* Offices, Coventry.

1909 Triumph, faultless condition, lamp, horn, spare belt, valve, plug etc., spent £10 February last on engine, tyres, etc.: £30 cash.—A. Birkenhall, Biddulph.

3½h.p. 1912 Singer, free engine, Villiers hub, not done 100 miles; any expert examination; will accept £50, or nearest offer.—285, *The Motor Cycle* Offices, Coventry.

ARIEL Twin, 6h.p. J.A.P. engine, 1911, Bosch magneto, Druid forks, perfect condition; a genuine bargain; equal to new; £28/10. — T. George, Aston, Nantwich.

REY

5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.

Telegrams: "Rey, Hampstead."

Telephone: 2678, P.O., Hampstead.

EXTENDED PAYMENTS

Taken on any Machine or Runabout.

NO EXTRA CHARGE ON MOST MAKES.

Following 1912 Machines for IMMEDIATE DELIVERY.

TRIUMPH Standard Model	£48 15
TRIUMPH 1912 F.E. Model	£55 0
RUDGE Standard Model	£43 15
RUDGE T.T. Model	£43 15
RUDGE F.E. Model	£55 0
ZENITH 6 h.p. Model	67 Gns
ZENITH 3½ h.p. Model	53 Gns
DOUGLAS L Lady's Model	£52 0
DOUGLAS J T.T. Model	£47 0
DOUGLAS G Standard Model	£41 0
BRADBURY Standard Model	£43 0
BRADBURY F.E. Model	£54 10
BRADBURY T.T Model	£48 0
SINGER 3½ h.p. 3-speed Model	£58 10
LINCOLN ELK 3½ h.p. Standard Model	£34 5
HUMBER 3½ h.p. 2-speed Model	£52 10
BAT 6 h.p. Standard Model	£58 0
SINGER 2-speed 4 h.p. Sidecar Model	£65 0
ZENITH 8 h.p. Model	69 Gns
DOUGLAS Model L Lady's	£52 0
DOUGLAS Model K	£50 0
BRADBURY 2-speed Model	£55 0
RUDGE Multi-speed Model	£60 0
B.S.A. 3-speed Model	£60 0
B.S.A. F.E. Model	£56 10

G. and N. Runabout in four weeks.

Any other makes on application.

TRADE SUPPLIED WITH VARIOUS MAKES. LIBERAL DISCOUNTS ALLOWED.

Machines at Bargain Prices to Clear.

1955.	**F.N.** 4-cylinder, 1911, good order	£35 0
1906.	**F.N.** 4-cylinder 1911 Model and Sidecar	£38 0
1966.	**F.N.** 2¾ h.p. Magneto, good order, low	£15 0
1967.	**RUDGE** F.E., 1911, splendid order	£39 0
1859.	**DOUGLAS**, 1910, splendid condition	£24 0
1802.	**BRADBURY**, 1911, nice machine	£29 0
1785.	**BRADBURY** T.T., made 1911	£30 0
1968.	**REX**, 1910¾, good condition	£26 0
1640.	**ZENITH** 1911 3½ h.p. Model	£41 0
1654.	**ZENITH** 1911 3½ h.p. Model	£38 0
1786.	**ZENITH** 1911 3½h.p. Model	£40 0
1803.	**ZENITH** 1911 3½ h.p. Model	£38 0
1855.	**BAT** 1911 8 h.p. Model	£38 0
1823.	**BAT** 1910 8 h.p. 2-speed Model	£42 0
1858.	**F.N.** 2¾ h.p. 2-speed Model	£26 0
1099.	**HOBART** 2¾ h.p. 1911 (New) Model	£27 0
1893.	**REX** Twin 6h.p., good order	£12 0

All Accessories included on S.H. at the price advertised.

Second-hand Sidecar, good order £4 10



THE £4 - 10 REY Sidecar £3 - 10

With Hutchinson or Michelin 26 × 2¼ tyre and tube, 30/- extra.

The famous "REY" EXHAUST WHISTLE now reduced to 12/6 each. Triumph standard type.

The "REY" LEATHER BELTING outlasts two of any other makes. Price 2/- per foot.

— SPECIAL DISCOUNTS TO TRADE. —

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

REY

5, HEATH STREET, HAMPSTEAD.

Caught On ! ! !

— OUR —

REED CANE BODIES

have undoubtedly hit the mark.

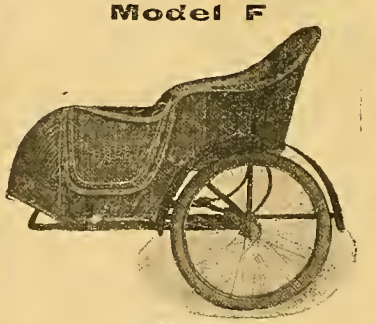
Undoubtedly this class of cane is far superior and more classy than ordinary cane or wicker work, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

Model E



£7 10s.

Model F



£8 8s.

OUR POPULAR MODELS ARE GOING STRONG.



Model de Luxe.—£6 5s.



Model C.—£7.



Model E.—£7 5s.



Model D.—£8.

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID.

MOTOR CYCLE FRAMES

We have a quantity of frames by well-known maker, **Price 32/6 each.**
Rigid forks, 7/6 extra. Druid forks, 45/- extra. Enamelled and plated in first-class style.

MISCELLANEOUS BARGAINS.

4½ h.p. Water-cooled Engine, vertical	£6 10
2¾ h.p. Kerry Engine, good	£2 5
2 h.p. Stationary Engine, water-cooled	£5 0
Binks Carburetter, cost fifty shillings	£1 0
Leamington Passenger Chair, new	£1 0
Albion Clutch, fits Triumph	55/-
3½ Rex Engine, M.O.V.	£5 0
Brooks B100 Saddle	8/6
Cocoa Fibre Sidecar Footmats	3/-

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane, HALIFAX (Two minutes from G.P.O.)

Telephone 919.

MOTOR BICYCLES FOR SALE.

IMMEDIATE Delivery 1912 Models, actually in stock, Scott, Triumph, Clyno, Rudge-Whitworth, and Douglas, etc.; also early delivery of any other make.—Moss, Wem.

JUST Delivered, 2¾h.p. twin lightweight T.T. Humber motor cycle, can despatch immediately; first cheque £42 will secure it.—Campion Cycle Co., Ltd., Station St., Burton-on-Trent.

MOTOSACOCHE, 1911, 2h.p., magneto, free engine, new Dunlop tyre front, Whittle belt, lamp, pump, tools; £22. bargain.—Gilbert Mayers, Mainme, Christleton, near Chester.

1911 2-speed Bradbury, N.S.U., in best condition, tyres perfect, belt good, engine sound and powerful, 2-speed, in perfect order; £35 nett; approval.—Box No. 311, *The Motor Cycle* Offices, Coventry.

DOT, 8h.p., m.o.v., new September, 1911, not done 1,000 miles, Albion clutch, spare Matchless pulley, lamp, horn, spares, tools, 60 m.p.h. guaranteed, perfect condition; £48. — Stevenson, The Limes, Christleton, Chester.

ONE Moto-Reve, 1910, 2h.p., very little used, good tyres, Druid forks, magneto, in perfect order, £15; one Moto-Reve, 1911, 2h.p., Druid forks, h.b.c., magneto, practically new, £17 or exchange both for good 3½h.p. free engine model.—Ellis, Salop Rd., Oswestry.

ZENITHS, Rudges, Enfields, 1912 models, in stock. Following second-hands, in splendid order: T.T. Triumph, 1911, Cowey, £40; Triumph, free engine, £36; Triumph, 1907, £20; 5h.p. twin Peugeot, magneto, £17; Rex, 3½h.p., magneto, £15.—Oswald Parker, Melbourne, Derbyshire.

TRIUMPH, late 1907, 1910 piston and cylinder, h.b.c., fitted new last September with Albion free engine clutch, Whittle belt, Davison's tank, with petrol and oil gauges, Palmer studded back tyre, Palmer studded on front in good condition, runs well; what cash offers? —Heath, Cramer St., Stafford.

THE North Wales Motor Exchange, Rhosddu, Wrexham. Tel.: 283.—Careful and immediate attention given to all enquiries. Exchanges a speciality 1912 F.F. Rudge, Sensprav, £55; 1912 3½h.p. N.S.U. de luxe, £48; 1912 A.J.S., lightweight, model A, purchased off the stand at Olympia, only done 200 miles, £35; 1910 N.S.U. twin lightweight, a beauty, done 500, £27/10; 1908 Triumph, fine mount, £26; 1907 Triumph, just overhauled £22; 1909 3½h.p. ball bearing Rex, beautiful condition, £25; 1909 5h.p. Rex, 2 speeds, hand'e starting, fine goer, £30; 1909 3½h.p. Matchless, spring forks, Bosch, bargain, £16; 4½h.p. twin Minerva, modernised, new magneto, h.b.c., just been overhauled, beautiful condition throughout, only wants seeing, £27/10. To beginners, we have some splendid machines, cheap, send for lists.

SIDECARS.—We hold a large stock of these, and can give immediate delivery, excellent value, £5/5; accessories, etc.; let us know what you require.—Above.

SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

HUMBER Lightweight, 1911, 2h.p., as new, spares; £28.—Sterne, 10, Cope St., Coventry.

NEW 7h.p. Indian, 2-speed model; delivery from stock.—Main, 36, Parade, Leamington.

3½h.p. Rex, 1908, Bosch magneto complete with lamp, horn, and tools; £15.—Main, 36, Parade, Leamington.

3½h.p. Rex, 1909, T.T., complete with lamp, horn, and tools; £20.—Main, 36, Parade, Leamington.

5h.p. Rex, 1909, Roc 2-speed, lamp, horn, etc.; £23.—Main, 36, Parade, Leamington.

DE DION, 2¾h.p., Chater-Lea, long bars, climb anything; £5/10.—1, Vine St., Aston Manor.

REX, 5h.p., magneto, fast, splendid condition; sacrifice £18/10.—Matts, Wigston Fields, Leicester.

ELECTRIC Motor Cycle Lamp given free to purchasers of any make.—Barrow, Stechford, Birmingham.

1912 Triumphs, Bradburys, Premiers, Humbers, Rudge, in stock.—Clifford's Motorics, Eastwood, Notts.

TRIUMPH, 1909, free engine, excellent condition, new tyres and belt.—Pulpott, Boughton House, Kettering.

1911 3½h.p. Lincoln Elk, £23; owner buying 1912 model same make.—Edden, Warwick Rd., Kineton, Warwick.

2¾h.p. Humber, chain drive, accumulator, free engine clutch; £8/10.—Hackett, tailor, Kineton, Warwick.

2½h.p. J.A.P., magneto, spare valves, belt, tubes, cover; a bargain, £16.—Woodcock, baker, Uppingham.

1912 Bradbury, Rudge, B.S.A., Alldays, New Hudson, 2¾h.p. and 3½h.p. 3-speeds in stock.—Blackburn, Spalding.

LADY'S Motosacoche Lightweight, 1910, magneto; approval willingly; bargain, £21.—Nell Morris, Athol Villa, Bourne.

TRIUMPH, late 1909, new condition, guaranteed perfect, spares; £28.—13, Homer St., Balsall Heath, Birmingham.

MORGAN RUNABOUTS.

MAY DELIVERY.

We have two of these delightful vehicles for May delivery. What offers?

NEW 1912 MACHINES actually in stock.

3½ h.p. 3-speed **NEW HUDSON**	57 Gns
2¾ h.p. 3-speed **NEW HUDSON**	47 Gns
3½ h.p. **RUDGE,** fixed gear	£48 0
3½ h.p. **HUMBER,** 2-speed model	£52 10
1912 3½ h.p. **BRADBURY,** single-speed	£48 0
1912 3½ h.p. **BRADBURY,** 2 speeds	£55 0

SINGLE-CYLINDER REXES.

1910 3½h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p 1908 Featherweight Rex, Bosch mag.	£17 0

TWIN-CYLINDER REXES.

1906 5-6 h.p. Twin Rex	£16 10
5-6 h.p, Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, 2 speeds, M.O.V.	£48 0
5-6 h.p. de Luxe, 1908, 2-speed model	£28 0
5-6 h.p. de Luxe, 1908, 2 speeds, special	£29 10

OTHER MAKES.

3½ h.p. 1911 **PREMIER** (new) Millennium 2 speeds. Offers.	
3½ h.p. 1911 **PREMIER** (new), Armstrong 3 speeds. Offers.	
1910 **P. and M.,** 2 speeds, fine goer	£32 0
1909 **MOTO-REVE,** twin engine, magneto, Druids	£20 0
1910 8 h.p. **BAT,** M.O.V., 2 speeds	£45 0
1¾ h.p. **WOLF,** magneto, spring forks	£15 0
1911 Lady's **HOBART,** Armstrong 3-speed	£38 0
4½ h.p **N.S.U.,** Bosch magneto, h.b. control	£21 0
3½ h.p. **P. and M.,** late 1908, 2 speeds	£28 0
3½ h.p Twin **PREMIER,** fine machine	£25 0
3 h.p. **TRIUMPH,** M.O.V., h.b. control	£17 0
5½ h.p. **N.S.U.,** 2 speeds and free engine	£25 0
1911 2¾ h.p. **MOTOSACOCHE,** magneto	£27 0
3½ h.p. **L.M.C.,** 1910 model	£25 0
3½ h.p. **MINERVA,** Bosch magneto, Amac.	£22 0
4 h.p. **ANTOINE,** M.O.V., B. and B. carb.	£12 0

SIDECAR COMBINATIONS.

8 h.p. **BAT,** 2 speeds, Millford sidecar	£60 0
1908 **P. and M.,** 3½ h.p., Millford sidecar	£32 0
5-6 h.p. 2-speed 1908 **REX** and sidecar	£33 0
7-9 h.p. 2-speed **REX** and sidecar	£53 0

All fitted with magneto and spring forks.

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3 h.p. **MINERVA,** vertical, M.O.V.	£12 0
3½ h.p. **EXCELSIOR,** Amac, h.b. control	£10 0
3 h.p. **REX,** vertical engine	£9 0
3½ h.p. **BROWN** Bicar, M.O.V., 26in. wheels	£12 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

3 h.p. 1908 **REX,** Bosch magneto	£17 0
5-6 h.p. Twin **REX,** spring forks, h.b. control	£16 10
4½ h.p. Twin **N.S.U.,** Bosch magneto	£21 0
Twin-cylinder **MOTO-REVE,** magneto, Druids	£20 0
3½ h.p. **MINERVA,** Bosch magneto, M.O.V.	£22 0
1¾ h.p. **WOLF,** A.J.S. engine, magneto	£15 0

CARS AND TRICARS.

4½ h.p. **HUMBER** Tricar, 2 speeds, wheel steering	£19 0
5 h.p. **HUMBER** Car, 2-seater, good goer	£22 0
5 h.p. **REXETTE,** Oppermann 3 speeds	£18 0
Duocar, Bosch magneto	£45 0

MISCELLANEOUS BARGAINS.

1912 B. and B. Carburetters, variable jets	28/6
1912 B. and B. Carburetters, single jet	27/-
1912 Sensprav Carburetters	28/6
Camel rim, Rubber Belting per foot	1/3
Frame for vertical engine	7/6
Fulford Castor Wheel Sidecar	£5 0
Fulford Rigid Sidecar, 26in. wheel	£4 10
Montgomery Sidecar, 26in. wheel	£2 10
N.S.U. Sidecar, coach-built, 26in. wheel	£4 10
Rex Pattern Belt Rim Brake (new)	6/6
Lycett's Carrier Toolbags (new)	7/8
Sidecar Lamps, show red light behind	7/8
Trailer, 26in. wheels	25/-
New Toolbags, 9 × 6 × 3½in.	4/8
Sidecar Aprons, green or red, with studs	7/6
New Lycett's Tubular Carriers	4/11
Longuemare Carburetters	6/-

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane,

Telephone 919. **HALIFAX** (Two minutes from G.P.O.)

SCOTT'S,
POWELL STREET,
HALIFAX.

RUDGE 2-speed and free-engine and adjustable pulley; engine starts with the back wheel on the ground £56 10
RUDGE multi-speed £60 0
RUDGE free-engine model £55 0
RUDGE standard £48 15
RUDGE T.T. £48 15
RUDGE 1911 ..... £37 0
ROYAL ENFIELDS, 1912, any model.
NEW HUDSON 3-speed ..... 57 Gns
ZENITH GRADUA £55 13
ZENITH GRADUA, 1912, 4 h.p., guaranteed not to have done 50 miles; a bargain £50 0
PREMIER, 1912, 3-speed Armstrong gear with special sidecar hub £59 0
JAMES, 1012, any model. Delivery from stock.
A.P.-CAMPION, new, 1912 ..... £38 0
TRIUMPH, 1911, clutch model, not done 400 miles £49 0
HUMBER, 1911, like new, complete £44 10
F.N. 2¼ h.p Lightweight, 1911, 2 speeds and free engine £35 0
F.N., 1911, 6 h.p., 2 speeds and free engine, 4-cylinder, with 1912 engine £45 0
F.N. 4-cylinder, splendid running order .. 18 Gns
TRIUMPH 3½ h.p. £20 0
PREMIER, not done 500 miles £36 0
MOTO-REVE, late 1911, like new, 3 speeds and free engine £34 0
MINERVA 8 h.p., chain drive, P. and M. 2-speed gear, complete with sidecar.. £40 0
REX, 1910, several improvements £27 10
REX, 1910, Binks carburetter £25 0
N.S.U. 5 h.p., 2 speeds, spring forks, B. and B. h.b.c. carburetter £24 0
CHATER-LEA-PEUGEOT 3½ h.p., magneto ignition h.b.c. £18 0
N.S.U. 3 h.p., all improvements £18 0
QUADRANT 3½ h.p., will take sidecar .. £12 0
REX DE LUXE, 1908, 5-6 h.p., 2 speeds and free engine, handle starting £22 0

50/- down and **5/-** weekly secures any of the following:
MINERVA 2¾ h.p., h.b.c. £10 0
BUCHET 8 h.p., T.T. model £14 0
FAFNIR 2¾ h.p., h.b.c. £10 0
HUMBER 3 h.p., h.b.c. B. and B. carburetter, 26×2¼ non-skid tyres, chain drive £11 0
LLOYD'S 2½ h.p. smartly finished £8 0
OE DION, Phœnix 2-speed gear, chain drive £10 0
REX 2h.p., spray carburetter £7 0
HUMBER 3 h.p., chain drive, low built £10 0

PEUGEOT Car, 9 h.p., 2-seater, 3 speeds and reverse £18 0

S. & R. Sidecar, wicker basket, nicely upholstered £5 5
S. & R. with wheel supported at both sides £6 6
Write for a sidecar catalogue which tells you the latest improvements in sidecars.



Footrests, post paid 2/10

MISCELLANEOUS.

Second-hand coach built £9 9s. Sidecar £5
Second-hand £8 8s. Coronet Sidecar £4
New Motor Head Lamps, with separate generators. Special line 9/6
Post Horns, Lucas pattern, very loud and musical 12/6
New Fuller Midget Coil 7/3
Long Handle-bars 4/9
Tubular Carriers ..... each 4/-
Rubber Goggles, 2 sets of glasses ....1/8 per pair
Horns, Triumph pattern 4/9

SCOTT'S,
Victoria Motor House,
POWELL STREET, HALIFAX.
Telephone—433 National.
Telegrams—"SCOTT, Powell Street, Halifax."

MOTOR BICYCLES FOR SALE.

TRIUMPH, clutch model, 1911 engine, rest machine 1909, perfect condition; £35.—41, Spring Rd., Edgbaston, Birmingham.

2½ h.p. Brown, less back tyre and tube, engine splendid condition, [illegible], 84, Craven Rd., Rugby.

1911 Standard Triumph, recently had new back tyre and belt, perfect order; £37/10.—E. Johnson, 44, Clarendon St., Earlsdon, Coventry.

FOR Sale or Exchange for Motor Bike £500 bond Provident Association of London, Ballot Section, £30 paid.—19, Kerr St., Northampton.

REX, 3½h.p., 1911 model, m.o.v., magneto, cone clutch, spring forks, B. and B. carburetter; bargain.—Brown's, 12, Bull Ring, Birmingham.

DOUGLAS, 2¾h.p. Lightweight. 1910 model, Bosch magneto, h.b.c carburetter, Druid spring forks, excellent running order; £24.—Brown, 12, Bull Ring, Birmingham.

INDIAN, 5h.p., twin 1910, magneto, spring forks; bargain, £29.—Brown's, 12, Bull Ring, Birmingham.

REX de Luxe, 1911 model, 6h.p., m.o.v., free engine, 2-speed, drip feed, B. and B. carburetter, fitted with handsome coachbuilt sidecar; sell turnout £48.—Brown's, 12, Bull Ring Birmingham.

PREMIER, 3½h.p., free engine, magneto, spring forks, with coach-built sidecar, grand touring machine; £35.—Brown's, 12, Bull Ring, Birmingham.

PRECISION, 3½h.p engine, m.o.v., 1912 Bosch magneto, B. and B. carburetter, Druid spring forks, only ridden few miles; bargain, £29/10.—Brown's, 12, Bull Ring, Birmingham.

REX, 2-stroke 3½h.p. engine, B. and B. carburetter, Bosch magneto, Druid forks, new this year; £29.—Brown's, 12, Bull Ring, Birmingham.

F.N. Lightweight, 1909 type, magneto, spring forks, spring forks; bargain, £16/10.—Brown's, 12, Bull Ring, Birmingham.

REX de Luxe, 1910 model, 5-6h.p. engine, magneto, plate clutch, free engine, spring forks and seat pillar; sell bargain, £32.—12, Bull Ring, Birmingham.

BROWN Motor Cycle, 3½h.p., Bosch magneto, B. and B. carburetter, spring forks, studded tyres; bargain, £16/10.—12, Bull Ring, Birmingham.

QUADRANT, late 1910, 3½h.p., magneto, Dunlop tyres spring forks, splendid order; bargain, £26/10.—12, Bull Ring, Birmingham.

LADY'S Hobart, 1911 model, with Armstrong 3-speed gear, condition as new; £35, complete.—P. J. Evans, 358, Stratford Rd., Birmingham.

ZENITH Gradua, 1911, 3½h.p. model, with Montgomery sidecar; £48, complete.—P. J. Evans, 358 Stratford Rd., Birmingham.

HUMBER Lightweight, 1911, 2h.p., splendid condition; £25, bargain.—P. J. Evans, 360, Stratford Rd., Birmingham.

CLYNOS.—Book at once for immediate delivery. I have weekly deliveries, so can supply your wants; exchanges arranged.—P. J. Evans, Sparkhill, sole Birmingham agent. Tel.: 13 Victoria.

REX, 5h.p., magneto, B. and B. carburetter, Druid forks, Mabon clutch, handle starting; bargain, £15/10.—102, Kingsway, Coventry.

MINERVA, 3½h.p., Bosch magneto, spring forks, h.b.c., low build, thoroughly reliable; £13/10.—55, Summerfield Crescent, Birmingham.

1909 Triumph, in good condition, £30; Montgomery sidecar, cost £16, sacrifice for £7, or first cheque for £35 secures the lot.—Owen, Stalford.

1911 Rex Twin, 7h.p., free engine, grey finish, condition as new, tools, spares; reasonable price accepted.—Gorton, Warwick Rd., Coventry.

6h.p. Peugeot-Chater-Lea, 1910, free engine, Bosch, footboards, sidecar machine; £23. — Baker, 43, Strensham Rd., Cannon Hill, Birmingham.

1911, June, 5h.p. twin Rex, cone clutch, not done 1,500 miles, unscratched, take sidecar anywhere; £38.—S. Smith, 3, Newhall St., Birmingham.

3½h.p. Premier, 1911, with Millennium 2-speed gear, new Rom rear tyre; cash offers invited.—Box No. 9,785, *The Motor Cycle* Offices, Coventry.

SINGER, 2h.p., 1911 lightweight, Bosch magneto, Druid forks, in perfect condition, soiled only; £23, real bargain.—Peace, Earlsdon St., Coventry.

MOTOR, 3h.p. Clarendon engine, low build, h.b.c., guaranteed thorough working order; £6/10.—Tennant Engineering Co., Pershore St., Birmingham.

2h.p. 1911 Humber, with 1912 improvements, just overhauled by makers, new back cover, excellent condition; £25.—John Fox, Allesley, near Coventry.

REX, 3½h.p., 1907, B. and B., 1911, new handlebars, belt and Dunlop tyres, good climber; £12, or nearest.—Warner, Church Farm, Cossall, Nottingham.

£10, or nearest offer.—2¼h.p. Lloyd, 1907, new Lyso, Avon, and Continental covers, new accumulator; trial here.—A. M. Pollard, Wragby, Lincolnshire.

3½h.p. Special Quadrant, magneto, Brown-Barlow, footboards, Whittle belt, tyres good, enamel and plate as new; £15.—Freeman, 12, Shakespeare St., Stratford-on-Avon.

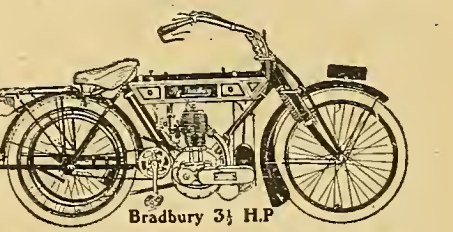
Collier's Motories,
Westgate, Halifax,
ENGLAND.

1912 BRADBURYS.

THE IDEAL SIDECAR MACHINES.

The greatest power in single-cylinder machines, giving maximum efficiency and freedom from attention.

3½ h.p. Tourist Models £48
3½ h.p. 2-speed BRADBURY £55



Bradbury 3½ H.P

Exchanges Quoted. Distance no objection.

SECOND-HAND MACHINES.

—CASH, EXCHANGE, OR EASY PAYMENTS.—

1910 2-speed **SCOTT** £37 10
1911 3½ h.p. 2-speed **HUMBER**, grand condition.. £33 10
1911 Twin 2-speed **REX OE LUXE** £47 10
6 h.p. 2-speed Twin **ANTOINE**, Druids, as new.... £35 0
1911 3½ h.p. Tourist **REX**, new and unused ..... 34 gns.
5 h.p. 2-speed free-engine **ROC** £35 0
1910 7 h.p. Twin **REX**, M.O.V. £37 10
Magneto **TRIUMPH**, spring forks, very smart .. £25 10
Magneto Twin **REX**, new and unused ..... 33 Gns.
REX, 1910. 3½ h.p., 26×2½ tyres, Cantilever seat £27 10
4½ h.p. 4-cylinder **F.N.**, magneto £19 19
2¾ h.p. **KERRY**, runs well, spring forks £10 10
1910 3½ h.p. T.T. **REX**, very fast £27 10
2¾ h.p. **OE DION**, spray carburetter £10 10
3½ h.p. 2-speed **N.S.U.**, h.b. control £21 0
3 h.p. **HUMBER** chain drive £7 10
1908 3½ h.p. Magneto **REX**, spring forks £22 10
2¾ h.p. Magneto **MINERVA** £16 10
3½ h.p. **REX**, brand new and unused..... £29 10
New Twin **REX**, Cantilever seat ..... 35 Gns
Twin **REX DE LUXE** and sidecar £27 10
3½ h.p. Magneto **REX**, new and unused £31 0
3½ h.p. Magneto **EXCELSIOR**, h.b. control £16 10
MOTO-REVE, magneto, Druids £19 19
1910 **ROYAL ENFIELD** Lightweight, very smart £22 10
REX, 3½ h.p., spring forks £15 10
1911 3½ h.p. Tourist **REX** £32 10
1911 Single-cylinder 2-speed **REX**, 300 miles £37 10
5½ h.p. Twin **REX**, spring forks £16 10
2¾ h.p. **ALCYON**, wants attention £6 10

A CALL WILL REPAY YOU.

COLLIER'S 1912 Sidecars, from £5/5.



Backed by 10 years' experience.
Every car guaranteed 12 months.

"Popular" Clipper or Continental tyre £5 5 0
"Superbe" type, with best tyre, aproo, etc..... £6 6 0
Side-entrance body, as illustrated £7 10 0
Ditto, with best coach-built body £7 12 6

Improved Quick Detachable Joints, Cranked Extra Strong Back Axle and Spindle to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

Discount to Trade. Exchanges entertained.

1911 **Brand New Tourist and de Luxe REXES from Stock. Liberal exchanges in addition to special Cash Discount.**

MOTOR BICYCLES FOR SALE.

PLASTOW, Grimsby, has the following new F.E. and multi-speed models in stock: Triumphs, B.S.A.'s, Rudges, Premiers, Bradburys, and Humbers, for immediate delivery.

PLASTOW, Grimsby, has the following second-hand machines for sale: 3h.p. Griffin, £6; 3½h.p. Minerva, £9; 1¾h.p. Clement-Garrard, £8; 3½h.p. Chase, £10/10; 2¾h.p. Fairy, Bosch magneto, £12/10; 1908 Triumph, £45; 1909 Triumph, £55; 1910 F.E. Triumph, £37/10; 1911 Standard Triumph, ridden 1,200 miles, £40; 1911 F.E. Triumph, £40; 1911 2¾h.p. Hobart, £27; 1912 2¾h.p. Premier, run 100 miles, £33.

BARGAINS to Amateur Mechanics.—3h.p. Quadrant, incomplete, 26in. wheels, £3; 6h.p. twin Antoine, incomplete, new cylinders, will pull sidecar; £5.—Wynn, Alcester.

FOR Early Delivery of Triumphs, Premiers, Rovers Humbers, Singers, Rudges, Rex, and Clyno, order from the man on the spot, Brandish, motor agent, Foleshill Rd., Coventry.

1911 Twin Rex de Luxe, free engine, 2 speeds, 5-6h.p., brand new, delivered April 9th, usual 3 months' guarantee; £46.—Box No. 215, *The Motor Cycle* Offices, Coventry.

PHELON and Moore, 1911 model, complete with Montgomery spring frame sidecar, Lucas lamp etc.; combination cost £72, accept £55.—P. J. Evans, 358, Stratford Rd., Birmingham.

LADY'S Hobart, 1911 model, 3-speed gear, in practically new condition; £35, complete.—P. J. Evans, 358, Stratford Rd., Birmingham.

SIDECAR Combinations, 1912 Clynos and Enfields; immediate delivery guaranteed — P. J. Evans, agent, 358, Stratford Rd., Birmingham.

1912 T.T. Rudge, special machine, fitted with large tank and special fittings; £42.—P. J. Evans, 358, Stratford Rd., Birmingham.

BAT, 8h.p., 1910-11, Matchless 2-speed, double belt drive, handle start, sidecar, F.R.S. and other lamps, speedometer, horn, many spares, splendid order; very cheap.—Lowe, Thurmaston, Leicester.

1911 Moto-Velo, 2h.p., Bosch magneto, Lyso belt, Clincher tyres, all spares, including belt and tube, not done 200 miles; illness cause selling; £25, lowest.—St. Elmo, Edward St., Nuneaton.

IN Excellent Running Order and condition, 2¾h.p. Enfield, 2-cyl. model, Palmer tyres; this machine is new being looked over by the manufacturers; £22/10.—Apply, F. Robinson, Nantglyn, Coventry.

1912 Triumphs, one clutch, one standard in stock, immediate delivery; 1909 Triumph, engine just overhauled by Triumph Co., new cover and tube, lamp, and spares, £29/10.—Mason, ageot, Wellingborough.

1911 3½h.p. Matchless, Albion clutch, Whittle, Lucas lamp, spare tyre, tube, belt, and case, £38; sidecar, £3/10; perfect combination, condition as new—Apply, Saturday, Sunday, or after 6 other evenings, 48, Carver St., Birmingham.

1912 Zenith-Gradua, Triumph, Singer, 4h.p., 2¾h.p., F.E., in stock; standard Triumph, September, 1911, not ridden 500 miles, £39; 1910 F.E. Triumph, £38; Singer, 3½h.p., 1911, F.E., £39; Enfield, 1910, £25.—Stinson, Coalville, Leicester.

£7, great bargain.—3½h.p. Rover, overhauled, rebushed, new rings, recently enamelled, fine order, fast, low, h.b.c., new accumulator, new belt, heavy Dunlops, climb anything, touches 30; trial here; guaranteed.—Roland Chappell, Fern Lea, Sketchley, Hinckley.

J.A.P., 4h.p., Druid forks, B. and B. carburetter Kempshall tyres, complete with stand and carrier £35; with Albion free engine disc clutch in hub, £40; with Roc 2-speed hub, £45; built to order; early deliveries.—F. Hopley, Upper Highgate St., Birmingham.

N.S.U., 2½h.p., new October last, run 700 miles, spring frame, automatic one-lever carburetter, Cowey, lamp, generator, watch, horn, mirror, reflex, Brooks case with new Rich tube and belt, condition and running absolutely as new; £30. — 84, Murray Rd., Rugby.

£12.—3½h.p. twin Werner, in excellent condition, low position, spring forks, B. and B. 1911 carburetter new Whittle belt, Michelin tyres, accumulator ignition, wipe contact, can be altered to make and break in few minutes to run with dry battery; buying sidecar machine.—44, Pool Bank St., Nuneaton.

1911 8-10h.p. J.A.P., Bosch, overhead valves, 2½in Dunlops, two 1¼ belts, Cowey, registering 10-100 m.p.h., C.A.P. carburetter, Autoclipse lamp, fastest time Newnham Open Hill-climb, full tourist, spares, tools, done 400 miles; cost £70, sell 42 guineas.—A. Mackenzie Cott, 44, Holyhead Rd., Coventry.

SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

TRIUMPH, 1910, free engine, fine order; cash only £35.—Bailey, jeweller, Soham.

CYCLE Triumph Agents for Cambridge (early deliveries), King and Harper, Cambridge.

2¾h.p. Alldays, Bosch magneto, B. and B., good tyres and belt; £15.—Delf, 17, Station Rd., Beeches.

5h.p. Magneto Viader, new back cylinder, piston, tyre; first reasonable offer.—W. Nunn, Needham Market.

2h.p. Iris Lightweight, low, vertical engine, Dunlops, beautiful condition; £6.—G. Seaman, Hunstanton.



The REX-J.A.P.

in the hands of

A PRIVATE OWNER.

"98, Marchmont Road,
"Edinburgh, March 25, 1912.

"Dear Sirs,—I feel it is only right that I should let you know how absolutely satisfactory my 6 h.p. REX-J.A.P. is proving.

"Since taking up Motor Cycling I have been in the habit of using a 3½ h.p. with Sidecar, and while some makes proved themselves able to occasionally take us up hills on the low gear, others were decidedly opposite, and it was generally a case of running alongside or shedding the passenger.

"My REX-J.A.P. is geared 3¾ to 1 on top, and I have never (as yet) required to put her into low gear on any hill we have come to. A slight touch of the throttle, and away she goes, devouring the ground like a 90 h.p. car.

"On Saturday, with a lady passenger of 10 stones, and myself of 10 stones 9 lbs., she registered by Jones Speedometer 53 miles per hour, and she wasn't 'all out,' so goodness knows what speed she will attain when ridden solo.

"I am going in for a lot of Sidecar competitions, and feel very confident of several successes. With all good wishes to you.

"I am, Yours faithfully,
"(Signed)
"FRED. J. HUTCHISON."

We shall be pleased to post you Catalogue upon request.

AGENTS—

The Premier Motor Co., Ltd.,

Aston Road, BIRMINGHAM.

Telegrams: "Primus, Birmingham." Telephone: Central 1310.



MOTOR BICYCLES FOR SALE.

8h.p. Matchless, 2-speed, been 100 miles only, as new; offers.

1911 F.E. Triumph, grand order; £45.

1911 5h.p. Indian, exceptionally fast; £35

F.N., 4-cyl.; £16.

TWIN Enfield; £18.

3½h.p. Excelsior; £22.

2¾h.p. Minerva; £6.

2h.p. 2-speed Chain-driven Humber; £18.

TWO Morgans left.—Particulars, Knaster and Cox, 35, Trinity St., Cambridge.

N.S.U., 3h.p. magneto, B. and B., spring forks, good going order; bargain, £18.—Lowe, Walpole, Wisbech.

BRADBURY, 1912, free engine, slightly soiled, otherwise perfect; cash offers wanted.—Bailey, jeweller, Soham.

1911 2¾h.p. Moto-Reve Lightweight, in perfect order, all spares; £20.—37, Searle St., Chesterton, Cambridge.

3½h.p. Fafnir, overhauled, plating and enamelling as new; just purchased car; £20.—Burrows, High St., Leiston.

TRIUMPHS, Bradburys, Matchless, B.S.A., Rudge, Humbers, Enfields, etc., new and second-hand.—Lambert, Thetford.

IN Stock, 1912 Bradburys, standards £48, free engines £54/10; 1910 standard, offers wanted.—Criswell's Garage, Newmarket.

MOTO-REVE, 2¾h.p., November, 1910, perfect condition, fast; £23/10.—Apply, Crown, Wereham, Stoke Ferry, Norfolk.

F.N. Lightweight, spring forks, Bosch magneto, B. and B. carburetter, h.b.c., good order: £12/10.—N. Smith, Gransden, Cambs.

5-6h.p. 1908 Rex, Roc 2 speeds, magneto, Binks carburetter, Whittle belt, speedometer, host of extras; £24.—3a, Bridge St., Cambridge.

1910 2¾h.p. Moto-Reve, only been 1,000 miles, good condition, magneto, Druids; £19, or offer.—F.E.W., Conservative Club, Cambridge.

PREMIER, 1911, 3½h.p., Millennium 2-speed gear, 50/- Lucas lamp, Jones speedometer, Lucas horn, belt, bag, etc., in splendid condition, ridden 1,300 miles only; inclusive, £45.—Robinson's, Green St., Cambridge.

TRIUMPH, 1911 standard, Dunlops; bargain, £35.—Robinson's, Green St., Cambridge.

ENFIELD, 1910, 2¾h.p. twin, tyres and engine first-class; £21.—Robinson's, Green St., Cambridge.

PREMIER 1912 Twin, 3½h.p., price £59/17, free engine clutch, Dunlops, used once only, local hill-climb; £55.—Robinson's, Green St., Cambridge.

CLYNO, sidecar special; sole agent Eastern Counties; one date open, 27th April; £68/5.—Robinson's, Green St., Cambridge.

TRIUMPH, 1911, free engine, Dunlops; £42.—Robinson's, Green St., Cambridge.

ROBINSON'S Motor Bicycle Garage, Green St., Cambridge. Tel.: 388. T.A.: Bicycles, Cambridge.

7h.p. Twin Jap-Chater-Lea, overhead valves, condition excellent, very fast, £35; Triumph, 1908, condition like new, £29.—H. Middleton, Fairland St., Wymondham.

FOR Sale, 2¾h.p. Humber motor cycle, chain driven, in perfect condition, runs good as new, good tyres, and several spare tubes and accessories; £15; reason of sale, bought car.—Ashworth, surveyor, Parson Drove, Cambs.

BRADBURY, 3½h.p., 1911½, standard roadster, unscratched, P. and M. lamp, generator, large exhaust whistle, new Stanley-Dermatine belt, horn, spares, accessories; any trial; bargain, £36, complete.—Cyril Catchpole, Rookery, Felixstowe.

MOTOR Cyclists, save £20.—You can possess a motor cycle equal to any on the market; we are supplying direct to the riding public complete motor cycle sets at wholesale prices: 3½h.p. Precision engine, Simms magneto, Druid forks, B. and B. carburetter, Hutchinson tyres, free engine, and everything ready finished in best style for assembling, with all 1912 improvements, £35; no fitting whatever required; equal to the best high-priced machine.—Write us, A. F. Garnham and Co., Crown St., Ipswich.

SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

3½h.p. Bradbury, 1911 (June), all in first-class condition; £35.—Sharp, Greenhill, Evesham.

ARIEL 3½h.p. Decompressor, absolutely new, but 1911 late pattern; what offers?—Marriott, Motor House, Hereford.

THE MOTOR CYCLE

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ADDRESS: 20, TUDOR STREET, LONDON, E.C.

This Year's T.T. Races.

THE regulations for this year's T.T. Races have been passed by the Auto Cycle Union, and nothing now remains except to secure a large entry and a sufficiency of funds to ensure good races taking place. The rules are practically the same as for the 1911 events, with the one very important alteration regarding cubical capacity of the cylinders. Last year multi-cylinder engines were allowed 85 cubic centimetres greater capacity in the Senior race and 40 cubic centimetres extra in the Junior race. This year single and multi-cylinders will compete on level terms for the first time in the history of the race, and all engines, no matter of what type, must be within the same limits, viz., Senior race 500 c.c., Junior race 350 c.c. Thus the Senior twins are brought down to the level of last year's singles, the Junior singles go up 50 cubic centimetres, and the Junior twins 10 centimetres. The most important alteration is in connection with the Junior singles, and some excellent results may be expected from a single-cylinder engine of, say, 76×77 mm. = 349 c.c., particularly if the machine be fitted with a change-speed gear.

British Motor Cycles in Canada.

ONE who is closely in touch with Canadian motor cycle matters, and who has also a knowledge of the British motor cycle trade, asks a pertinent question in a letter addressed to us when he says, What is the matter with British motor cycle manufacturers? This motor cyclist says that he is not speaking without his book when he assures us that at the end of this year the motor cycle market in Canada will be as completely in the hands of the United States as the motor car trade now is. Various reasons are given for this state of affairs, most unsatisfactory from a British point of view. We mention a few of them, and presume that British makers are so extremely busy now that they have neither time nor opportunity to devote to the Canadian market. However, the demand will not always be as brisk as it is at present, and our correspondent's views should, we think, be duly considered by all British makers.

It is alleged that American manufacturers give Canadian agents a considerable advantage in discount in comparison with their home traders, and that British makers will only allow the same terms as they do to home agents. Owing to the recent reduction in the price of all American machines, we are told that they are now being sold in the Dominion of Canada at a much lower price than English motor cycles. This in spite of the fact that the United States products pay duty at the rate of 35% *ad valorem* against the preferential rate of 22½% on British-made machines. In discussing the question with other British readers of *The Motor Cycle* in Canada our informant says it is noticeable that in the home market the English manufacturer is popularising his machine by entering it in almost every contest that is held, but when it comes to Canada it is not considered necessary to take steps to enter into competition with riders of American machines. It is said the United States manufacturer sends riders and machines to compete in all Canadian events, and although he is able to do this more conveniently than English makers, owing to the close proximity of the U.S. and Canada, it might be advisable for British makers to take heed of this

warning with regard to the way in which American manufacturers are popularising their mounts in the Dominion.

It is hardly practicable to send riders and machines from England to take part in these competitions, but it is perfectly easy to make arrangements with agents in Canada for British machines to be represented in these contests, and unless something of the kind be done we are told that the demand for British motor cycles in Canada within the next twelve months will be *nil*.

Here is another instance that the American manufacturer realises the possibilities of the Canadian market. A United States firm which is located across the border line is already making plans to build machines in Canada and so avoid all duty.

We feel certain that the sterling qualities of British motor cycles will always secure them a market abroad, but it is advisable to take heed of competitors who are only too ready to take advantage of what is often described as British lethargy. In our opinion our makers are far from lethargic, and the onimous warning given by our correspondent is due to the difference between American and British manufacturing methods. The American maker is inclined to be more speculative in production, and must find outlets for his surplus products. In consequence he is prepared to accept very much lower prices for exported machines than those sold at home, whereas the demand in England at present is so large that the majority of British makers have no necessity to make concessions. We do not wish to pose as alarmists, as we know that one or two of our makers have an excellent connection in our Overseas Dominions, but it is with a view to assisting them to retain it and helping others to gain a footing that we have penned the above article.

The Problem of the Automatic Carburetter.

THE air seems full of automatic carburetters, each one more economical, more flexible, and more powerful than its predecessors if the claims made on its behalf are to be believed. This, and



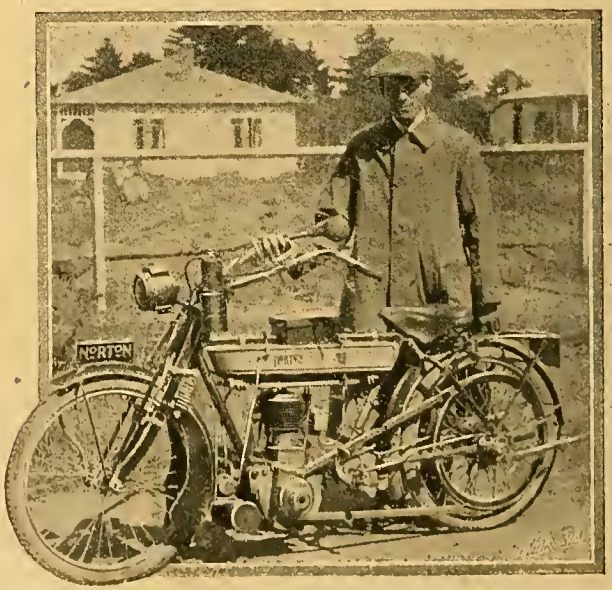
R. Holloway (Premier) taking one of the bends on Chew Hill in the Bristol M.C.C. Open Hill-climb. His cornering at high speed was much admired by the spectators.

the fact that the problem of the automatic carburetter has always been a very difficult one to tackle, renders the subject a very interesting one at the present time.

It will be as well to review the principle on which the modern motor cycle carburetter is designed. First we have the essential that the petrol (except in the case of one carburetter—the Senspray) must be exactly level with the top of the jet; then (again with one or two exceptions) we have the main air, the correct proportioning of which, through the medium of the choke tube, means a great deal to successful running; then we have the hand operated extra air to compensate for the extra suction on the jet at high engine speeds. Engine suction affects the flow of petrol and air in an inverse ratio, consequently some means have to be adopted to reduce the pressure on the jet at high engine speeds, and this is accomplished by means of the extra air. Contrary to general belief, on the extra air port being opened, no more air enters the cylinder; what happens is that the pressure in the inlet pipe being reduced, less petrol is drawn from the jet, consequently the mixture is weakened, and though this may appear to amount to the same thing at first sight, yet a little reflection will show that it is a very different result altogether. The problem is to design an automatic device that will invariably give the correct amount of air to ensure a perfect mixture under all running conditions—by no means an easy matter when we consider that there are no less than four items that require to be taken into consideration, namely:

1. Throttle position.
2. Engine speed.
3. Temperature.
4. Specific gravity of petrol.

I now propose to treat each item separately:



Laurence Pitcher (3½ h.p. Norton) who secured first place in the Reliability Trials held recently in New Zealand from Christchurch to Akaroa. Mr. Pitcher gained full marks and won the petrol consumption test.

The Problem of the Automatic Carburetter.—

Throttle Position.

This is what to all intents and purposes governs the air supply; it is quite a practical proposition to make a carburetter in which the air supply varies in unison with the amount of gas admitted, and, in fact, this was done as long ago as 1908, the Quadrant machine of that year being fitted with a carburetter of this type. The present day multi-jet carburetter works on this principle.

Engine Speed.

Though this only affects the extra air supply to a limited extent, yet we cannot afford to leave it out of consideration, as every motor cyclist knows how much more air the engine will take when going fast. The reason is, as I explained above, owing to the fact that the flow of petrol and air does not vary proportionately. It is quite possible to restrict the flow of petrol by mechanical means—witness the Dunlop carburetter, which made its appearance during the early days, which had a sort of fret saw blade in the jet, the idea being that this would act as a sort of check on the excess of petrol.

Temperature and Specific Gravity of Petrol.

We can bracket these together, as without doubt the best way of dealing with each would be to fit an adjustable air intake on the carburetter body, so that we could adjust the amount of air to suit the conditions day by day.

Let us see what there is to fill the bill in the motor cycle and car world. Though one would think that the most reasonable way to design a carburetter would be to arrange for the throttle piston to uncover extra air ports and for some automatic device to admit air in addition according to the engine speed, yet I do not remember a carburetter designed on these lines—they all seem to rely exclusively on one method or the other. The original Krebs (car) carburetter (which is the ancestor of all modern automatic carburetters) had a spring-controlled valve, which, operated upon by the engine suction, opened in accordance with the engine speed. A dash pot was fitted to prevent chattering. Up to a couple of years ago, practically all car carburetters worked on this principle, but of late there seems to be a tendency to give air strictly in accordance with the position of the throttle, regardless of engine speed.

So it will be seen that there is nothing much to interest us in the car world, and moreover, as a motor cycle engine has to work between wider speed limits than a car engine, a principle proved in motor car engineering may not necessarily be the best one on which to design motor cycle carburetters.

Modern Automatic Carburetters.

At the present time we have a good many motor cycle carburetters of the automatic variety to choose from. First, there is the "Jap," which has a number of jets each with a separate air supply, and which are uncovered by the throttle sleeve, which has been before the public for a number of years, and the fact that it is used for racing shows that it must be efficient. This carburetter has an adjustable air intake which one sets to accord with the engine's "humour." Among others are the Stewart-Precision, Lukin, Binks two-jet, Claudel Hobson, and F.N., but I cannot help thinking that all the automatic carburetters I have mentioned (excepting the "Jap," which has the air adjustable) are open to criticism on the same ground as car carburetters, viz., the designers seem to take it for granted that the engine speed always varies with the position of the throttle. Obviously, it does not, and we want more air with the engine buzzing on half throttle on a level road than we do when the engine is pulling comparatively slowly uphill on the same amount of gas. These automatic carburetters, however, do not allow for this, consequently they must always be adjusted for certain conditions and for those alone.

Semi-automatic Types.

There is another type of carburetter, which I shall call the semi-automatic type. The Douglas, Indian, C.A.P., and old pattern Amac are examples of what I mean, and though they are fitted with air levers yet they are practically automatic, as air is admitted according to the position of the throttle, and the air lever need only be touched at the beginning of each ride. I regard this type of carburetter as a particularly meritorious one, and I am surprised that manufacturers have not taken the matter up with more enthusiasm.

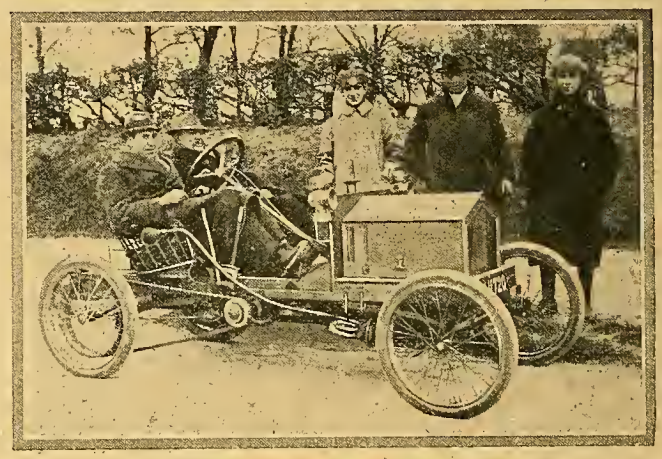


Middlesbrough M.C.C. Hill-climb at Castleton Bank — Danby (7-8 h.p. Indian) taking the corner rather wide and a little too fast. He ran into the bank about twenty yards further on but was fortunately unhurt.

The Problem of the Automatic Carburetter.—

To deal with the claims made on behalf of the automatic carburetter as regards power and economy in fuel consumption, obviously the hand-controlled carburetter must be at least as powerful and at least as economical as any of the automatic type, as power and consumption are entirely dependent on the correctness or otherwise of the mixture supplied to the engine, and the present-day non-automatic carburetter provides, in my opinion, a mixture which cannot be improved upon by the best representatives of the one-lever variety. It is only in the case of an absolute novice that the automatic carburetter would be of any great benefit, and a man does not always remain a novice. [Some do.—ED.]

To sum up, though there is undoubtedly a demand for automatic carburetters, yet I do not think that they are in a sufficiently advanced state to merit their being fitted as standard, and certainly, owing to the exacting requirements of the motor cycle engine, I do not see how we can ever do without the extra air lever, which has proved itself to be an indispensable adjunct in the past. On how many occasions, for instance, has not the timely closing of the extra air cured an attack of "conkitis"? Does not every rider adjust and readjust the quality of the mixture, until he feels that the engine is doing its best? Come what may, automatic carburetters or not, I shall regard the extra lever as a valued friend. E.M.O.



ANOTHER NEW CYCLECAR.

The above cyclecar has been designed by N. Crane, of Nottingham and he has a so built it without any professional aid whatever. It is fitted with an 8 h.p. J.A.P. engine (fan-cooled) and Kingston carburetter, while the final drive is by means of Whitile belts on either side. A two-speed and reverse gear is provided.

A RUN ON A ROVER.

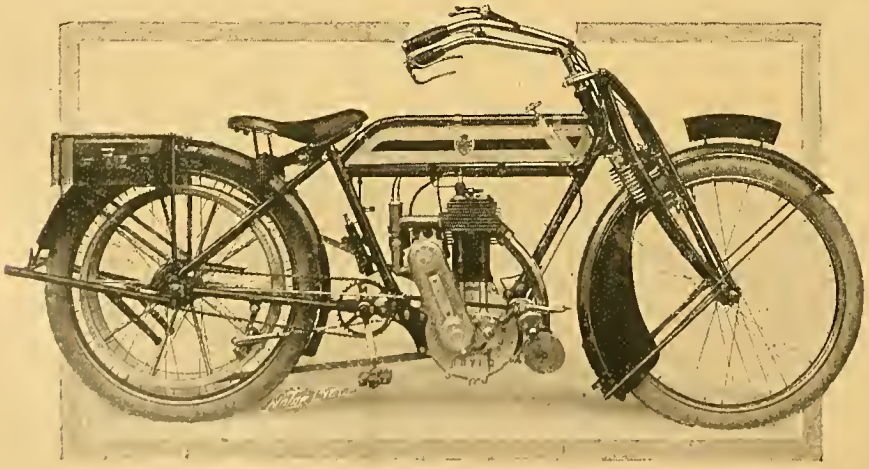
OWING to the kindness of Mr. J. K. Starley, a 3½ h.p. Rover fitted with the Armstrong three-speed hub was placed at our disposal for the re-run A.C.U. One Day Trial. On Tuesday afternoon last week we left Coventry for Oxford on a bright sunny day. The wind was just cool enough to make riding almost perfect. Soon after leaving Coventry we changed into the high gear (approximately 3½ to 1), and except for traffic we never had to change down. This is probably accounted for by the heavy flywheels, which also increase the smooth steady pull of the engine.

With the cut-out shut the machine is the quietest we have ridden, as there is not a sound from the valve gear. The Rover Co. seem to have discovered the way to make quiet valve gear without sacrificing the efficiency of their cams, and we should be glad to see some other firms make experiments in the same direction, for riding a Rover in traffic can be compared to driving a high class car. There is not a click to be heard.

The day of the trials was perfect in every way, and though the dust was bad in places, generally speaking it was not so bad as might be expected. The Rover ran perfectly throughout, and took both Birdlip and Saintbury hills on the middle or direct gear. Uley Hill came as a surprise, and, owing to a bunch of competitors, we were unable to get up any pace, and so dropped to the low gear, on which we could play with the hill. Sunrising required the low gear for the last few yards, but this was only because we had been travelling fast so as to get ahead of the competitors and had thus warmed up the engine.

We are grateful to the Rover Co. both for the opportunity of a delightful run on such a fine machine and for the complete way in which the machine was equipped. The only adjustment made was the changing of a belt fastener link, so as to take up a slight amount of belt stretch.

On our return to the works we inspected a new model which is fitted with a dropped top tube and a tank with rounded top. This model has a particularly neat appearance, as will be seen from the accompanying illustration.



The new model 3½ h.p. Rover with dropped top tube and rounded top to tank.



A Hill-climbing Championship.

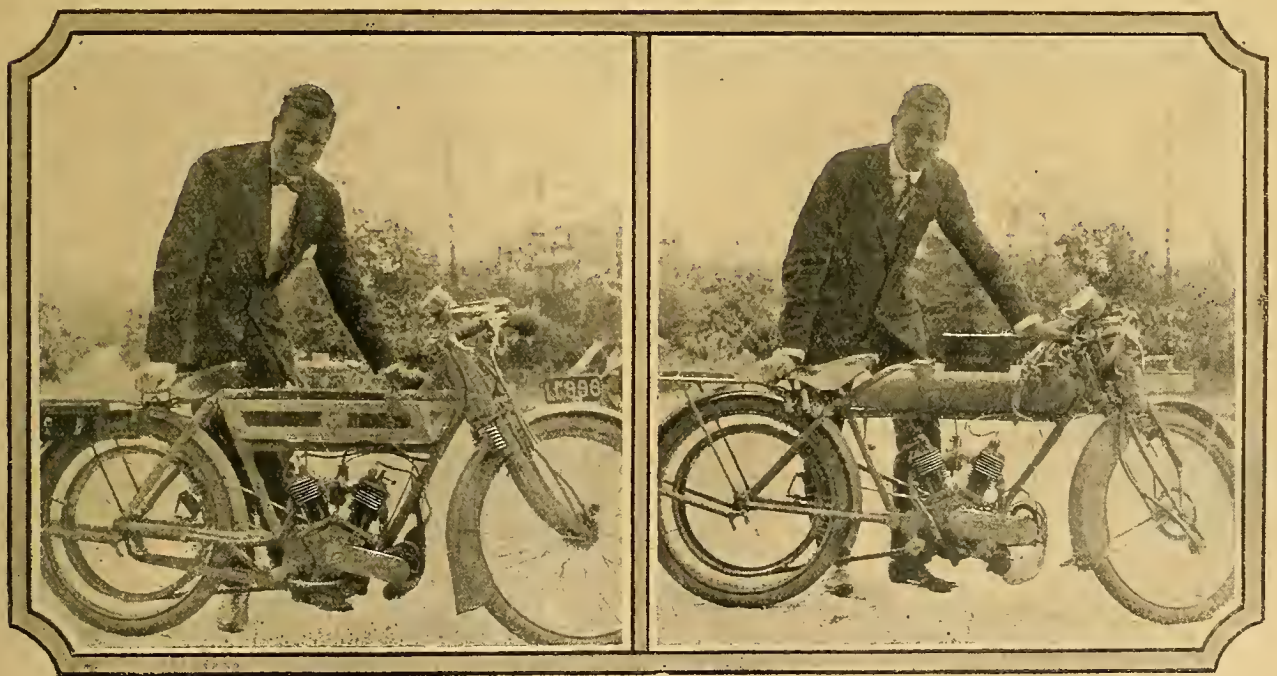
The A.C.U. might add a little extra interest to the year's open hill-climbs by starring certain open climbs as championship events, and awarding a championship cup in each class to the riders scoring the highest number of marks in the total of performances in these climbs during the summer. This would be a simple and practical method of getting into touch with riders living in distant corners of the provinces, and would also limit the number of climbs to which firms are practically compelled to send their trade riders.

The increasing number of open climbs bids fair to be a greater incubus to the trade than the old glut of one day reliability trials ever was. Further, the competition between club secretaries to get their climbs on to the championship card would tend to improve organisation, which is very often astoundingly faulty at certain provincial events billed as "open climbs."

Furthermore, the records thus necessitated would provide a register which might be utilised to secure genuine novice classes. It would open the way to novice classes, in which any rider who had ever competed in a championship class would be ineligible. Of course, the list of timekeepers allowed to officiate in a championship climb would have to be sternly supervised. Some of the country timing is childishly inefficient, and there are few hills on which it is safe to start two riders side by side. I hope the skilful driving tests of slow riding and restarting will be more utilised this year. A slow riding test with the men starting in pairs is great fun, and remains a novelty in many districts.

Gears for Sidecar Work.

Are variable gears of the hub type for sidecar work to become popular? If a hub gear fail to provide a lower ratio than 8 to 1, and if that be only obtainable when the engine pulley is screwed out to a diameter at which a belt is not at all likely to grip in wet weather or on a long hill, then I should prefer either a chain drive or a counter-shaft gear. 8 to 1 is a very satisfactory low gear for a chain-driven twin and sidecar, unless Honister is on the *tapis*. But 8 to 1 is not too joyous a ratio for a 3½ h.p. single and sidecar up Sunrising on a wet, windy day. If the engine remain happy, the belt may very probably prove a trifle morose. In my opinion the variable gear with the best future where a belt is used is that which affords a genuinely low gear in conjunction with a very big engine pulley.



SMALL TWIN ENGINES AND THEIR ENTHUSIASTIC RIDERS.

Both these machines—a Trump and a Matchless—are fitted with the J.A.P. 3½ h.p twin engine (60 mm. bore by 76 mm. stroke, cubic capacity 430 c.c.). The owners tell us that toe machines are capable of an average speed of 35 m.p.h. when geared 4¼ to 1, that they can do 54 m.p.h. on Brooklands track, and climb the test hill at 30 m.p.h. The riders, S. G. and J. C. Bain, have previously owned single-cylinder machines, but are so delighted with the little twins that they inform us they do not intend to ride any but multi-cylinder machines in the future.

Questions & Replies



A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Coventry to Cardiff.

I shall be obliged if you will tell me the shortest and best route from Coventry to Cardiff, avoiding big towns and tramlines.

Your route will be Coventry, Warwick, Stratford-on-Avon, Evesham, Tewkesbury, Gloucester, turn R down Westgate St., and take first turning to the left after crossing the second bridge over the Severn. Go through Newnham, Lydney, Chepstow, and Newport.

Brooklands.

(1.) What meeting is there on at Brooklands on Whit-Monday? (2.) Could you give me the route from here (Woodbridge) by road? I should prefer to avoid London. (3.) What does it cost for admission to Brooklands track as a spectator? (4.) Where can I see an advertisement with full particulars?—H.I.

(1.) There is a full motor car race meeting at Brooklands on Whit-Monday, in which there will probably be two motor cycle races. (2.) The route from Woodbridge would be as follows: Woodbridge, Colchester, Witham, Chelmsford, Billericay, Tilbury, Gravesend, Wrotham, Riverhead, Westerham, Redhill, Reigate, Dorking, Leatherhead, Cobham, then straight to Brooklands. This avoids all the London traffic. (3.) The entrance costs from 2s. 6d. on that day. (4.) Full particulars can be obtained from the Brooklands Automobile Racing Club, Carlton House, Regent Street, S.W.



One of the new Calcott lightweights photographed on Edge Hill. The makers, Calcott Bros., Ltd., Coventry, inform us that the tester had no difficulty in ascending the hill with a passenger on the carrier.

Mending the Float.

Recently my carburetter started flooding, owing to the float being punctured. I had this neatly soldered, and everything was right for about fifty miles. Now I can't run slower than 15 m.p.h., for with the throttle practically closed it requires air half open. I notice that when the engine is running it blows petrol out of the air holes in the chamber. I have taken down the carburetter and can find nothing wrong. Would you please advise me what to do?—W.C.

The trouble is probably due to the excess of solder on the float, which has disarranged the level of the petrol in the float chamber. You will have to reduce the petrol level slightly or make a neater job of soldering the float.

Touring in Germany.

I shall be taking my P. and M. and sidecar over to Germany shortly to visit some friends at Nuremberg and return again after about a week's stay. The route I intend to travel will be Queenborough-Flushing, Cologne-Nuremberg. I should be obliged if you would inform me—(1.) Whether I can obtain a triptych from the A.C.U., of which I am a member, which will enable me to pass my machine through the Customs duty free both in Holland and Germany? (2.) Will the machine have to carry a plate, and will the restrictions and formalities in force in Germany regarding motor cycles affect me in any way? (3.) What road maps should I have to obtain, and where can I get them? (4.) Will it be necessary to detach the sidecar when crossing, and what are the freight charges for both?—H.H.

(1.) We should strongly advise you to get into communication with the Auto Cycle Union Touring Department, 89, Pall Mall, S.W., without delay. They will give you valuable information regarding your route, and will arrange for your triptych and all details of the tour. (2.) You will have to carry an international plate, and at the frontier you will have to take out a *steuerkarte*. In Germany you drive on the right. (3.) Maps can be obtained from the Auto Cycle Union and Royal Automobile Club. Nearly every item in your letter could be answered in greater detail by the Royal Automobile Club Touring Department (to whom the A.C.U. will refer you). (4.) The cost of freight for a motor bicycle and sidecar from Queenborough to Flushing, or from Folkestone to Flushing is 30s. You need not detach the sidecar.

Oiling an Engine-shaft Gear.

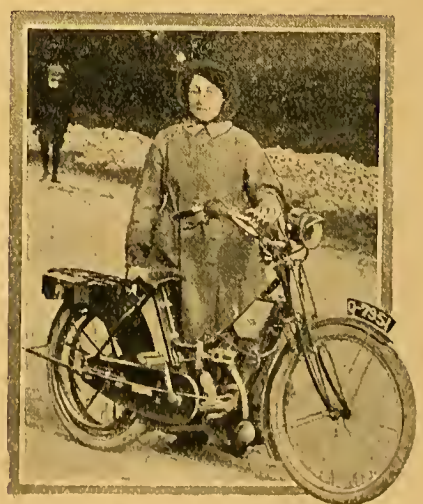
Please tell me how often it is necessary to oil the N.S.U. two-speed gear fitted to my 1909 machine and how to do it.—E.P.D.

If the gear receives oil from the engine, if you over-lubricate the engine or give it rather more than the normal quantity of oil, the gear will lubricate itself. If, however, the gear receives no oil from the engine, undo the grub screw marked "oile" and inject engine oil through the hole by means of a squirt. This should be done about every 200 miles.

Cleckheaton to Chester.

Please tell me the best route from Cleckheaton to Chester, as I am thinking of fetching a motor cycle from there. I wish, if possible to avoid the big towns. Would *viâ* Preston and Liverpool be out of one's way, as the road from Chester to Preston is excellent?—L.C.R.

The shortest way (avoiding Manchester) is Cleckheaton, Huddersfield, Marsden, Mossley, Stalybridge, Ashton-under-Lyne, Stockport, Altrincham, Northwich, to Chester. If you wish to go *viâ* Preston your road will be Cleckheaton, Halifax, Todmorden, Bacup, Haslingdon, Blackburn, to Preston. The road from Burnley to Blackburn is bad, and you would have to traverse part of this.



Mrs. C. E. Ross, of Moseley, Birmingham, and her 2 h.p. three-speed Humber Lightweight. Mrs. Ross is a member of the Sutton Coldfield and Mid-Warwickshire A.C., and is a very keen rider.

Situations in the Trade.

I wish to obtain a situation in the motor cycle trade. Will you please tell me how to proceed. I have had practical experience with my own machine and four and a half years in the drapery business. Is trade riding the result of working one's way up?—A.J.

Your proper course would be to apply to those manufacturers with whom you would like to work. If you have not had mechanical training we do not think your chances are very good. A post as trade rider is sometimes the result of success in open hill-climbs.

Hill-climbing Formulæ.

Some time ago you published in *The Motor Cycle* a table showing bore and stroke of engines and their corresponding capacity. Could you supply me with a similar table, and let me know the date of that particular issue, as I wish to look it up? Should also be glad of a good formula for hill-climbs.—F.W.

The Cubic Capacity Table can be obtained from *The Motor Cycle* Offices, Coventry, price 4d. post free. It was published in the issue of June 17th, 1908. A good formula for hill-climbs is *The Motor Cycle* formula. See our issue for September 21st, 1911. It is as follows: For singles, $\frac{D^2 \times S \times t^2}{W}$, or more simply if you have the C.C. Table, $\frac{C \times t^2}{W}$. For multi-cylinders, $\frac{D^2 \times S \times N \times .9 \times t^2}{W}$, or $\frac{C \times .9 \times t^2}{W}$. You will find this very satisfactory.

Intermittent Running.

I have a 4½ h.p. V twin Hamilton motor (a.o.i.v. of course), to which I recently had to fit an odd rear cylinder of another make, but same bore and stroke and type. The ignition is by accumulator and tremblers, and the bicycle is fitted with an old B. and B. carburetter, which has always been satisfactory. The motor starts up well and accelerates quickly to almost any speed on advancing the spark, but after going three or four hundred yards it fails and stops altogether, and will do this repeatedly. (Wiring has been overhauled.) I have tried different accumulators and tremblers, with the same result. The engine will take nearly full air when once started. (I have cleaned the carburetter.) Compression is somewhat better in front cylinder than in rear. When going, a heavy passenger on the carrier does not seem to check the machine's speed in the least. (I have tested both sparking plugs.). How would you account for it failing thus, and what remedies would you suggest? It is difficult to tell whether it fails on both cylinders or one only. Is it worth while going to the expense of fitting machine up with a magneto?—E.A.

Your trouble is probably due to an obstruction in the petrol pipe or to an air lock in tank or pipe. A magneto would be an improvement, but whether it is worth while or not is for yourself to decide.

Ignition Timing.

I notice in reply to "C.B.R.," on the subject of "Valve and Magneto Timing," that you state that "the spark should occur at the top of the compression stroke when the magneto is retarded, not when fully advanced." I have always understood that the furthest you could advance the spark to was the top of the stroke, and that retarding caused sparking as the piston was descending. It probably accounts for the fact that my 3½ h.p. Triumph, 1910, is not giving me the power it should be since I readjusted the timing. (1.) When correctly timed, should the spark occur before the top of the compression stroke when the magneto is fully advanced? (2.) What are the most probable causes of overheating? (3.) Is the fact of exploding (viz., sparking) before the top of the compression stroke, when (a) running slow or (b) running fast, one of the causes in (2)?—C.A.B.

You will find an interesting article in *The Autocar* of April 13, pp. 674-5, on the subject of ignition timing. (1.) The movement of the engine piston is so rapid on small high speed engines used for motor cycle work, and the full explosion of the gases takes an appreciable time, therefore when the magneto is fully advanced sparking occurs before the piston has reached the top of its compression stroke. (2.) There are many causes of overheating, the chief of which may be too large a jet, too little air, carbon deposit inside the cylinder, insufficient lift of valve, incorrect valve timing, and ignition too far retarded. (3.) (a) If the explosion occur before the piston has reached the top of its compression stroke when running slow you will get knocking, and the engine will slow down until very soon it stops. If it continued it might possibly set up overheating. (b) The engine should not overheat with sparking occurring before the top of the compression stroke when the engine is running fast.

Carburetter and Coil.

I have an old 2¾ h.p. Minerva with B. and B. carburetter and plain coil. The carburetter is an old tank controlled one, and seems rather large for the machine; the jet is a No. 36. The throttle can be set so that the closing of same admits air through the adjustable air inlets only, or can be so set that no air or gas is admitted to cylinder at all on closing the throttle. (1.) Which is the correct setting of this carburetter, and why? (2.) Is a No. 36 jet too big for this machine? (3.) What would be about the correct sized jet for a 2¾ h.p.? (4.) Will the jets now sold in cases of three or four fit my old carburetter? (5.) Would the cheap kind of whistle at about 2s. 9d. be any good for my engine? (6.) My coil, a large round plain one, has a resistance in the primary winding of .8 amp., thus taking 5 amps. at 4 volts on continuous circuit. This seems to me very excessive. Is it possible this coil was meant to be used on 2 volts.—MAX.

(1.) Set the carburetter to admit pure air when throttle is closed, as this will help to cool engine. (2.) Yes. (3.) Number 29 would be right. (4.) The jets are suitable for carburetters made in 1908 (*et seq.*). (5.) Yes, if correctly fitted. (6.) Five amps. is certainly excessive, but we do not suppose your coil will work with two volts; you can try it by using one cell of the accumulator.

EXPERIENCES WANTED.

"M.W." (Cheltenham).—1911 or 1912 3½ h.p. Rex with two-speed gear, speed and wearing qualities.

"G.F.O." (Bassingbourn).—6 h.p. Rex-Jap 1912 model.

"Todavia" (Glasgow).—8 h.p. chain-driven Chater-Lea or Bat-Jap, tyre cost and petrol consumption with sidecar.

"S.H." (Durham).—3½ h.p. Quadrant three-speed, also Bowden and N.S.U. two-speed gears with 3½ h.p. and sidecar.



During the recent labour strike in Brisbane a number of members of the Queensland Motor Cycle Club offered their services to the police as a dispatch corps. They are depicted above.



A GREAT contrast to the unfortunate fiasco in the South, the re-run spring one day trial in the Midlands, was a great success. The course was a good one, and if it erred at all it was on the side of leniency, but it was almost as stiff as one could find in the district in which the trial had to be held. For the next event we shall have to go to Wales or some mountainous district to find hills of sufficient severity.

The yard of the Railway Hotel, Oxford, was not large, but of just sufficient size to accommodate the forty-five riders. The evidence of the A.C.U. assistant secretary's good organising powers was at once apparent. The machines were all arranged in numerical order, No. 1 being near the exit, so that there was no trouble about starting, and the judges could easily get at the machines to examine them.

At an early hour confusion slowly became transformed into order. Mr. Hart, assisted by willing helpers of the Oxford M.C.C., who were of valuable assistance through the trial, took charge of the scales. Mr. Beasley kept a watchful eye on everything, the judges set to work on their task of inspecting the competing machines, and route cards and armlets were distributed. Captain Davidson and Captain Nicholl worked with a will. The former, it may be remembered, is secretary of the Mechanical Transport Committee of the War Office, and as he superintends the purchasing and testing of machines used by the Army Service Corps he is thoroughly *au fait* with the industry. Captain Nicholl is himself a practical rider, who is not only a keen user of a 5-6 Clyno and sidecar, but keeps it in top notch tune in his private workshop.

Interesting Items on the Machines.

There were several interesting machines in the trial. Rothwell's Scott was fitted with an extra oil tank, W. E. Cook's A.S.L. had an injector form of extra air inlet, C. T. Newsome's smart-looking Rover had a gilled silencer, and was very quiet. The Morgan runabout was a particularly pleasing looking turn-out resplendent in its newness. Bischoff rode a glorified Triumph fitted with Armstrong three-speed gear, and a foot-controlled decompressor which he pronounced to be very near to absolute perfection. Mrs. Hardee, the gallant lady rider who made such a plucky performance in the last trial, was there on her P. and M., Johnson (3½ Triumph) used a Stewart-Precision carburetter, which appeared to work very well.

A veteran rider whom we were pleased to see on the road again after his recent accident was T. Silver. He was badly injured some little time ago by a machine which he was testing catching fire. The G.W.K. was another very smart runabout, an ingenious feature of which was the speedometer fixing. The dial of the latter was set flush with the dashboard, and very neat it looked. On a conveniently placed board in the hotel yard was placed a Bartholomew's map with the route marked thereon in red ink, and a notice



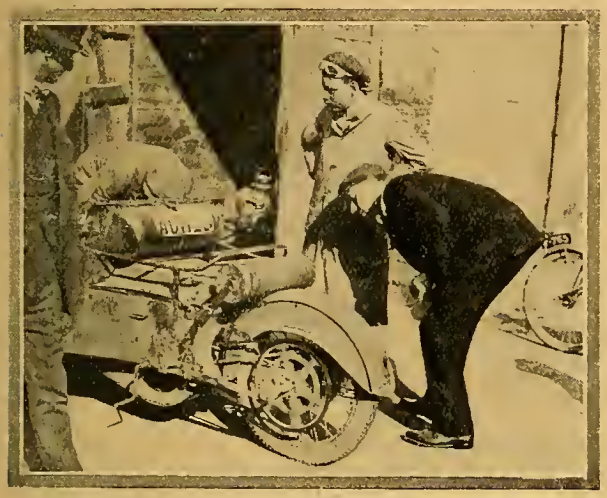
Scene in the yard of the Railway Hotel, Oxford, at the start of the trial.

The Re-run One Day Trial.—

that fifteen minutes would be allowed for *The Motor Cycle* tea stop. These marked maps were also supplied to the principal officials.

The Start from Oxford.

The first man left punctually at 8.30. The motor bicycle riders were got smartly away in pairs at one minute intervals, while the passenger machines were despatched singly. F. Smith (Clyno and sc.) could not compete owing to pressure of business. It was a glorious morning when the competitors left Oxford. First there came a ten-mile limit, which the Oxford City Fathers have imposed for reasons best known to themselves on an absolutely straight and safe road,



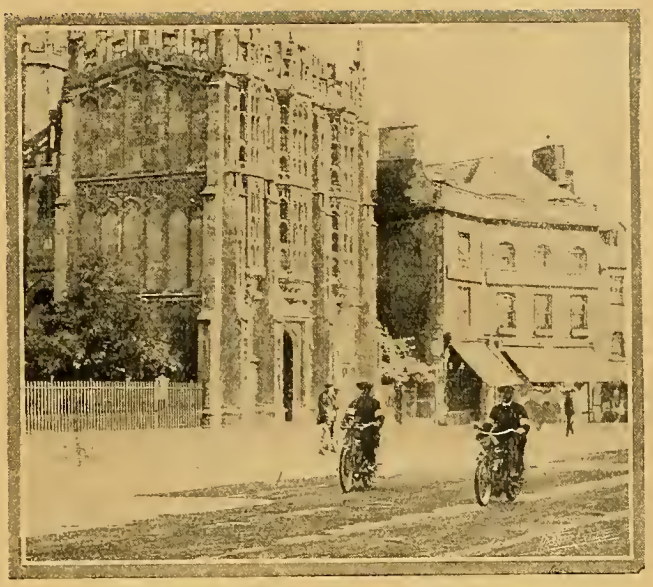
Judges examining machines before the start. The silencer on the new model A.C. sociable will be noticed.

which is practically open country, and then the ascent of Cumnor Hill, which the modern machine hardly feels. A cool breeze was blowing across the course which soon carried away what little dust there was. The route was particularly well marked; in fact, one official suggested it was too well done, and this excellent marking was particularly noticeable in Farringdon, which is a tricky little town to negotiate.

Up to Cirencester the road is good and presents no difficulties. In this fine old town we stopped and watched the competitors go by. A point policeman rendered valuable service at the cross roads, regulating the traffic and directing the men. The most conspicuous machine in the trial was Woodman's Bat, which was offensively noisy. No silencer of any kind was fitted, and the straight through exhaust pipes caused a deafening din. It is reasonable to suppose that even if this machine had not been put out of the running for various causes it would have been disqualified for noise alone.

A Surprise Hill at Uley.

From Cirencester the journey was continued through Tetbury to Dursley, and at this point the route became hilly. There then came a long winding descent through the village of Uley, followed by a bad twisty hill, which was almost as steep as Birdlip. Here Webster (Hobart) was brought to a standstill. After Uley the roads became narrow and very dusty until Stroud was reached.

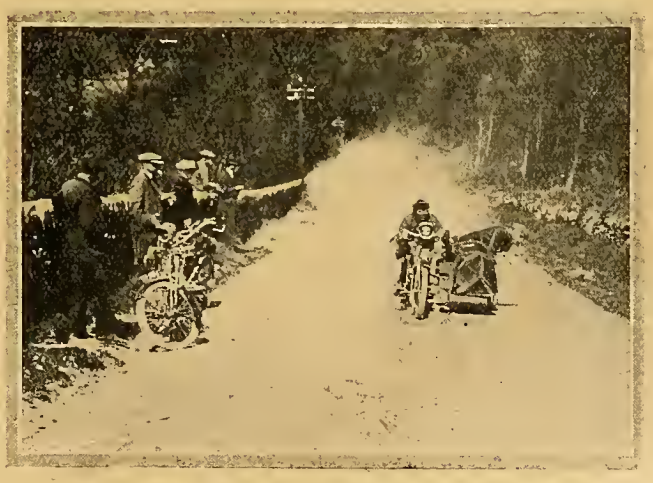


Two of the competitors passing Cirencester Parish Church.

The next interesting feature of the trial was the ascent of Birdlip, once the terror of the motor cyclist, now but an incident in a day's run. Birdlip lies on that fine old road, the Ermine Way, which the competitors joined by turning to the right at a point marked on the map as 220 feet above sea level. From here the road rises to 909 feet at the summit. The surface on the hill was excellent, but the wind blew gustily and seemingly in all directions during the ascent. While waiting for the competitors we saw an 8 h.p. Matchless and sidecar take three people up the hill without a falter.

Observations on Birdlip.

Most of our observations were made on the Knap—the steepest portion—which is 1 in 5½. F. A. McNab (3½ Trump), who rode as No. 1, came up first in excellent style. F. Begley (2¾ Hazlewood) changed up as he topped the Knap. The following riders appeared to come up particularly well: W. E. Rootes (3½ Singer), R. Mundy (3½ Alldays), P. W. Bischoff

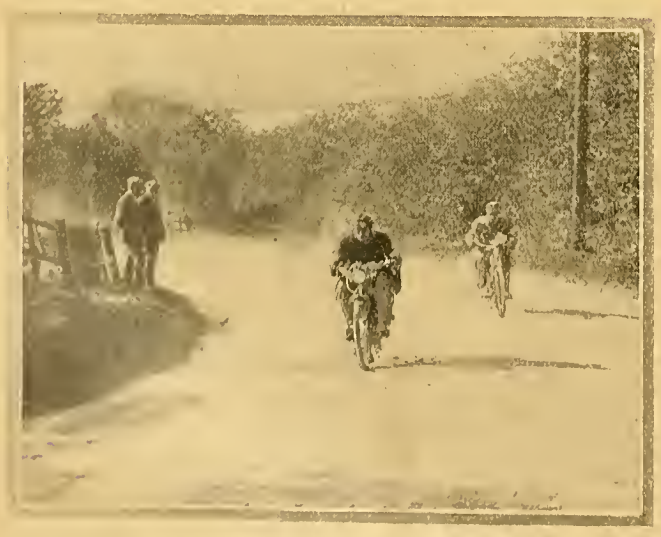


Alan Woodman (8 h.p. Bat and sidecar) making a good ascent of Birdlip.



The Autotrix cyclecar rounding the bend at the top of Birdlip Hill.

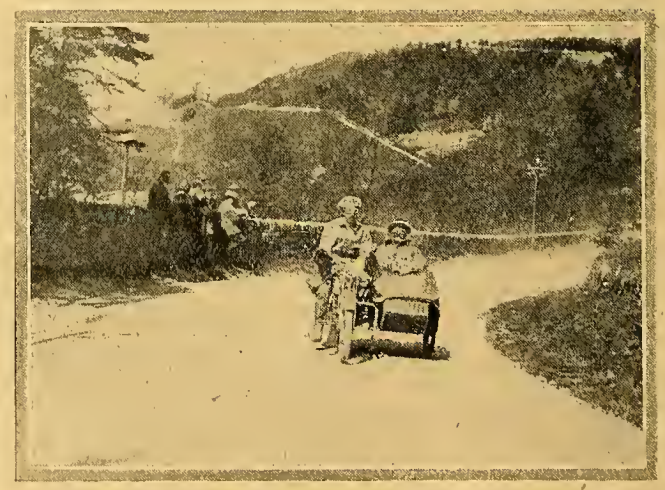
(3½ Triumph), L. Bees (3½ L.M.C.), D. H. Noble (3½ Rover), L. Cass (4½ Quadrant), W. E. Cook (3½ A.S.L.), R. A. Bishop (2¾ Enfield), R. Lord (6 Rex), T. R. Trotter (3½, B.S.A.), P. J. Evans (3½ Humber) who was travelling on top speed, J. St. John (3½ Quadrant), J. Slaughter (3½ L.M.C.), W. B. Gibb (2¾ Douglas) who made a splendid ascent, R. H. Viggers (3½ Macbeth-Precision), A. V. Deacock (3½ Alldays), H. Johnson (3½ Triumph) a very fine performance, J. S. Holroyd (2½ Motosacoche, which was the lightest machine in the trial) came up without pedalling, C. R. Collier, H. A. Collier, and R. E. Guest (all on 8 h.p. Matchless machines and sidecars) came up in excellent form. J. Chater-Lea, jun. (8 Chater-Lea and sc.), also made an excellent ascent. J. T. Wood (8 G.W.K.) made a splendid climb which should go far towards dispelling any prejudice which may exist against friction drive. The Morgan came by us at a splendid pace, but almost on the crest of the hill it stopped, ran back, restarted, and finished without difficulty. The Autotrix came up well, as also did the A.C. Hill, the driver of the latter, stopped to change a faulty plug, and arrived late. Mrs. Hardee (3½ P. and M.) came up slowly, but made a clean ascent. Poor Silver climbed the hill on a flat tyre, which troubled him several times again during the day. J. H. Kerr (3½ N.S.U.) failed through a broken belt fastener. R. R. Rothwell (4 Scott) missed his change and stopped on the Knap. W. B. Whitaker (3½ Rudge), H. Beal (3 N.S.U.), and H. J. Woodgate (3½ Macbeth-Precision) dismounted, while Applebee had to stop owing to a sooted plug. The minimum hill speeds were: Up to 350 c.c., 10 m.p.h.; over 350 c.c., 15 m.p.h.; passenger machines, 7 m.p.h. The following competitors climbed the hill at less than minimum speed: Mrs. Hardee (3½ P. and M.) and F. Hill (5-6 A.C.). T. E. Seear (Motosacoche) arrived too late to be timed.



Two Motosacoche competitors on Sunrising Hill.

Along the Ridge of the Cotswolds.

After the hill-climb there followed a fine drive along the ridge of the Cotswolds, from which there was a glorious view, and then came the descent of Leckhampton Hill into Cheltenham, where lunch was served, and the machines were stored in Steel's garage.



C. R. Collier (8 h.p. Matchless sidecar) coming up Birdlip. A similar machine (not in the trial) ascended the hill with three up.

Several incidents had happened by lunch time. Tessier (Bat and sc.) had chain trouble and a puncture, and ran into the wall coming into the garage. He retired eventually. Tillman (6 Zenith and sc.) gave up at Cirencester owing to belt trouble, and the G.W.K. had suffered a puncture. Woodman (Bat and sc.) had trouble with a stretched valve and sooty plugs, and gave up at Birdlip.

After lunch came the long, trying ascent of Cleeve Hill out of Cheltenham, which was all the more troublesome owing to a strong head-wind.

We noticed that W. E. Cook (3½ A.S.L.) made a very fine ascent of this hill. Here Kerr (N.S.U.) again had trouble owing to a slipping belt, and had to dismount. After Cleeve Hill the road was good, but winding, to Broadway, and rather intricate; but thanks to the splendid arrowing—which, we understand, was carried out by Mr. A. H. Priestly—there was no difficulty in finding it.

Saintbury is a pretty ascent—long, rough as to surface, and of a gradient not much worse than 1 in

The Re-run One-day Trial.—

6 to 1 in 11. It was more difficult to negotiate than Birdlip, but not nearly so severe as any one of the timed hills in last year's Six Days' Trial. Most people climbed it without difficulty, and most of the bicycles hardly noticed it.

Gibb (Douglas) again made a fine ascent, while the following other performances stand out pre-eminently in our memory: C. T. Newsome (Rover), W. E. Cook (A.S.L.), J. S. Holroyd (Motosacoche), L. Cass (4½ Quadrant), J. Chater-Lea (Chater-Lea and sc.), J. T. Wood (G.W.K.), H. F. S. Morgan (Morgan), the Autotrix, and the three Matchless side-car machines. F. W. Applebee, sen., was still troubled with misfiring, but made a clean ascent; Kerr (N.S.U.) stopped and hampered St. John (Quadrant); Whitaker (Rudge) and Woodgate (Macbeth-Precision) dismounted; Webster (Hobart) pedalled.

Sunrising Hill.

The run to Sunrising Hill was through beautiful country, and part of it followed another famous Roman Road, the Fosse Way, to Ettington, there joining the Stratford-Banbury road which leads to Sunrising. Here again most people made a clean ascent. Gibb got up on top speed—no mean performance for a lightweight. Those who dismounted were Mrs. Hardee and H. Woodgate. We were told that the stop for tea, provided by *The Motor Cycle* at "The Tower," Edge Hill, was much appreciated, and certainly the proprietor carried out his part of the programme very well, while Mr. A. H. Priestly did excellent work at that place as marshal.

The Organisation.

The remaining 30 miles to Oxford was through practically flat country and over excellent roads. All that can be said against the trial was that it was a trifle too easy. Yet although this was said pretty freely, 21 competitors out of 45 starters failed to secure an absolutely clean sheet. The trial was a great success, and those responsible for its organisation deserve to be warmly congratulated. The time-keepers were Messrs. F. T. Bidlake and A. V. Ebblewhite, who were conveyed from point to point by Mr. J. R. Nesbit. Other officials were Messrs. F. G. Barton, E. C. Cooper, R. C. Davis, John Gibson, W. A. Matthews, W. Pearson, A. Ross, F. Salter, H. E. Steel, and members of the A.C.U., Oxford M.C.C., Coventry and Warwickshire M.C.C., Bristol M.C.C., Bristol B. and M.C., Birmingham, Worcester, and Gloucester M.C.C.'s.

Mr. Oswald Cole, chief constable of Oxford City, was an interested spectator at the start and finish. The Oxford county police did excellent work in directing the traffic at cross and side roads on the course during the afternoon over that part of the route which traversed Oxfordshire.

CERTIFICATES OF PERFORMANCE. MOTOR BICYCLES.

Rider and Machine.	No. of Cyls.	Bore and Stroke.	Cubic Capacity.	Gear.	Weight of Machine	Remarks.
		mm.			lbs.	
F. Begley (2¾ Hazlewood)	1	70 × 76	292	Armstrong 3-speed	168	Non-stop. 1st class certificate.
J. H. Slaughter (4 L.M.C.)	1	89 × 92	572	Roc 2-speed	230	Non-stop. 1st class certificate.
L. Bees (3½ L.M.C.)	1	88 × 88	499	L.M.C. variable	216	Non-stop. 1st class certificate.
*Rev. P. W. Bischoff (3½ Triumph)	1	85 × 88	499	Armstrong 3-speed	200	Non-stop. 1st class certificate.
W. E. Cooke (3½ A S.L. Precision)	1	85 × 88	499	N.S.U. 2-speed	205	Non-stop. 1st class certificate.
Leslie Cass (4½ Quadrant)	1	87 × 95	564	Armstrong 3-speed	228	Non-stop. 1st class certificate.
*T. R. Trotter (3½ B.S.A.)	1	85 × 88	499	B.S.A. 2-speed	233	Non-stop. 1st class certificate.
*R. A. Bishop (2¾ Enfield)	2	54 × 76	340	Enfield 2-speed	170	Non-stop. 1st class certificate.
D. H. Noble (3½ Rover)	1	85 × 88	499	Armstrong 3-speed	220	Non-stop. 1st class certificate.
C. T. Newsome (3½ Rover)	1	85 × 88	499	Armstrong 3-speed	232	Non-stop. 1st class certificate.
P. J. Evans (3½ Humber)	1	84 × 90	499	Humber 2-speed	260	Non-stop. 1st class certificate.
W. B. Gibb (2¾ Douglas)	2	60 × 60	340	Douglas 2-speed	164	Non-stop. 1st class certificate.
R. H. Vigers (3½ Macbeth Precision)	1	85 × 88	499	Armstrong 3-speed	218	Non-stop. 1st class certificate.
J. S. Holroyd (2½ Motosacoche)	1	64 × 90	289	Motosacoche variable	138	Non-stop. 1st class certificate.
*Rex Mundy (3½ Alldays & Onions)	1	85 × 88	499	Alldays 2-speed	218	Non-stop. 1st class certificate.
*F. A. McNab (3½ Trump)	1	85.5 × 85	499	Single gear	192	Non-stop.†
*H. Johnson (3½ Triumph)	1	85 × 88	499	Single gear	192	Non-stop.†
*Fred Dover (3½ Premier)	1	85 × 88	499	Armstrong 3-speed	228	Non-stop. Wheel bearing loose
*W. E. Rootes (3½ Singer)	1	85 × 88	499	Armstrong 3-speed	228	Non-stop. Pedal loose.
*J. St. John (3½ Quadrant)	1	85 × 88	499	Armstrong 3-speed	235	Non-stop. Engine very oily.
F. W. Applebee (2¾ Centaur)	2	60 × 60	340	Armstrong 3-speed	168	Plug tr'ble Birdlip, engine dirty
*J. H. Kerr (3½ N.S.U.)	1	85 × 88	499	N.S.U. 2-speed	240	Failed Birdlip, Cleeve, Sa'bury
*R. R. Rothwell (4 Scott)	2	74 × 62	446	Scott 2-speed	245	Failed Birdlip, engine dirty.
*Mrs. M. Hardee (3½ P. & M.)	1	82 × 88	475	P. & M. 2-speed	225	Failed Sunrising, engine dirty.
A. Webster (2½ Hobart)	1	70 × 78	299	Sturmey 3-speed	148	Failed Uley and Birdlip.
R. Lord (6 Rex)	2	77.5 × 95	896	Rex 2-speed	290	Puncture.
*H. Beal (3 N.S.U.)	2	58 × 75	396	N.S.U. 2-speed	183	Failed Birdlip, leaky oil tank.
H. J. Woodgate (3½ Macbeth Precision)	1	85 × 88	499	Armstrong 3-speed	210	Failed on observed hills.
		NO AWARD.				
A. V. Deacock (3½ Alldays)	1	85 × 88	499	Roc 2-speed	218	Timing adrift, tyre troubles.
*T. Silver (3½ Quadrant)	1	85 × 88	499	Armstrong 3-speed	212	Tyre troubles, outside maximum time.
*W. B. Whitaker (3½ Rudge)	1	85 × 88	499	Rudge variable	230	Retired, failed observed hills.
T. E. Secar (2½ Motosacoche)	1	64 × 90	289	Motosacoche variable	136	Belt troubles, finished outside maximum time.

* Private owners. The weights given are with petrol, oil, tools, and spares.

† Would have qualified for first class certificate if change-speed gear or clutch had been fitted.

The Re-run One Day Trial.—

CYCLE CARS AND SIDECARS.

Rider and Machine.	No. of Cyls.	Bore and Stroke.	Cubic Capacity.	Gear.	Remarks.
C. R. Collier (8 Matchless & sidecar)	2	85.5 × 85	964	V.S. 2-speed	Non-stop. 1st class certificate.
*George Wadden (8 Autotrix cyclecar)	2	85.5 × 85	964	Autotrix 3-speed	Non-stop. 1st class certificate.
*R. E. Guest (8 Matchless & sidecar)	2	85.5 × 85	964	V.S. 2-speed	Non-stop. 1st class certificate.
J. Chater Lea, jun. (8 Chater Lea & sidecar)	2	85.5 × 85	964	Chater Lea 3-speed ..	Non-stop. 1st class certificate.
H. A. Collier (8 Matchless & sidecar).....	2	85.5 × 85	964	V.S. 2-speed	Non-stop. 1st class certificate.
J. T. Wood (8 G.W.K. cyclecar)	2	86 × 92	1070	Friction gear.....	Puncture.
F. Hill (5-6 A.C. Sociable)	1	95 × 102	723	A.C. 2-speed	Plug trouble, outside time Birdlip.
H. F. S. Morgan (8 Morgan Runabout)....	2	85 × 85	964	Morgan 2-speed	Stopped on Birdlip.
NO AWARD.					
S. T. Tessier (8 Bat & sidecar)	2	85.5 × 85	964	Bat 2-speed	Broke chain, tyre troubles, retired.
*Alan Woodman (8 Bat & sidecar)	2	85.5 × 85	964	Bat 2-speed	Valve, plug, and sidecar trouble; disqualified for excessive noise.
*Ernest Vallis (5-6 Clyno sidecar)	2	76 × 82	774	Clyno 2-speed	Finished outside maximum time.
*F. R. Tillman (6 Zenith & sidecar)	2	76 × 85	862	Gradua gear	Retired, belt trouble Cirencester.

* Private owners.

JUDGES' REPORT.

The postponed Spring One-day Trial was held on Wednesday, April 24th, starting from the Railway Hotel, Oxford. The distance was 152½ miles, and the route followed was Faringdon, Fairford, Cirencester, Tetbury, Dursley, Stroud, Birdlip Hill, Cheltenham, Broadway, Saintbury, Moreton-in-the-Marsh, Sunrising Hill, Banbury, Deddington, to Oxford. The timed hills were Birdlip and Saintbury, and, in addition, several hills were included at Uley, Cleeve, and Sunrising. The route for the most part was over main roads, and although not so severe as the one selected in March last, it formed a very good test of the capabilities of the machines, as shown by the comparatively small percentage of first-class certificates obtained.

WEATHER.—The weather conditions were as good as could be desired, although there was a strong wind blowing against the competitors for some miles after the luncheon stop.

ROADS.—The roads were in very good condition throughout, but in a few places they were dusty.

ENTRIES.—Thirty-two single and thirteen passenger machines were entered. Of these only one, a passenger machine, did not start. Only two of the machines were fitted with fixed gears.

AWARDS.—Fifteen first-class certificates were awarded to single machines, and five to passenger machines. In addition to these, two machines would have obtained first-class certificates but for the fact that they had not complied with the regulation requiring a free engine clutch or variable gear, and four machines lost first-class certificates through tyre trouble.

FAILURES.—Birdlip accounted for seven failures, but the other hills did not appear to present any great difficulties. The speeds attained on the timed hills were in most cases well above the minimum required.

CLEANLINESS.—There is still room for considerable improvement under this heading. The very clean condition of two similar machines showed that this end can be attained. Some machines were particularly bad in this respect, more than one first-class certificate being lost through this defect. The oil leakages were not confined to any one particular part of the machine, but often appeared to be general.

SILENCERS.—Many of the machines are still too noisy, and considerable improvement is required in this respect. Here again the presence of quiet machines showed that it is possible to achieve silence without loss of efficiency. One machine was disqualified for excessive noise.

GENERAL CONDITION.—There appears to be a tendency with some riders to neglect the cycle parts, such as the head and hubs. The front wheel brakes in some cases did not free themselves well when released. In one instance the two brakes acted independently on the belt rim, a system which does not appear to be altogether desirable.

TYRE TROUBLES.—As already stated, four first-class certificates were lost through this cause. It would appear to be highly desirable, in view of the greatly increased horse-power developed by modern engines, that heavier tyres should both be made for use on motor cycles and actually fitted to them as standard.

(Signed) { D. F. NICHOLL, Captain R.A.
H. E. DAVIDSON, Captain R.E.



H. S. Meen (three-speed New Hudson), winner on formula of the touring single cycle class in the Middlesbrough and District Hill-climb at Castleton on the 20th ult. (See Club News pages).

MOBILISATION DAY AT DAVENTRY.



A group of some of the motor cyclists who responded to the call to mobilise in Daventry on Saturday last. The men rode from all parts of the country. The average speed of the participants in the test works out at 30.1 miles per hour.

CONSIDERING all things the mobilisation test of Saturday last must be considered fairly successful. Out of 173 who sent in their applications 99 put in an appearance at Daventry, the rendezvous, before the lists were closed at 5 p.m., and some 37 others arrived after that hour, including one rider from Glasgow. Before I proceed to discuss the military lessons of the test I will give the results as compiled from the official register.

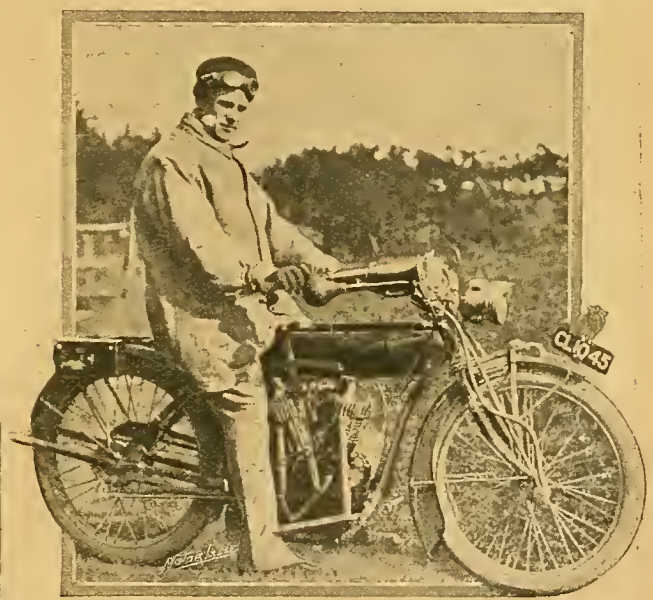
From the following cities and towns two or more riders arrived before 5 p.m.: London 11, Coventry 7, Birmingham 6, Manchester 6, Liverpool 4, Shrewsbury 4, Northampton 4, Nottingham 4, Hull 3, Southampton 3, Sheffield 2, Doncaster 2, Swansea 2, Cardiff 2, Leamington 2, and Bradford 2.

The rider who came from the furthest point away from Daventry was R. P. Chester, 33, Leicester Street, Southport (3½ h.p. Triumph), who rode the 160 miles in 5h. 48m. The best run of the day, and the first actual man to arrive was R. A. Milligan, Laxfield Hall, Suffolk (7 h.p. Indian); he accomplished the 130 miles in 4h. 1m., starting at 4 a.m. on Saturday. W. E. Rootes (3½ h.p. Singer) rode the nineteen miles from Coventry in 27m.



Captain A. H. Trapmann, the organising officer of the mobilisation test, receiving competitors' cards as they arrived at the rendezvous.

The all-round average speed of competitors works out at 30.1 miles per hour, and the average distance travelled at 69.8 miles. The only counties in England not represented were Northumberland, Cumberland, Devon, Cornwall, and Durham. During the afternoon hill-climbing tests were carried out on Newnham Hill. No single machine failed to make the first ascent, but no times were taken, as this was not considered of



R. A. Milligan (7 h.p. Indian), the first competitor to arrive at Daventry. He left his home in Suffolk at 4 a.m. on Saturday, and was in Daventry soon after 8 a.m.

military importance in the hill-climb itself. At the second test, where machines were called upon to restart on the stiffest portion of the gradient, only one of those who tried failed to reach the summit.

The variety of machines employed was almost as varied as the places the riders hailed from, and none of the best known makes was unrepresented. Triumphs, P. and M.'s, Rudges, and B.S.A.'s head the list, and amongst others there were three big Indians.

These are the facts and figures which we have to go upon. The next point is what do they teach us?

Mobilisation Day at Daventry.—



General Thorneycroft (right), Captain Trapmann (centre), and Major Symons (left).

Lessons of the Test.

Firstly, we find that in peace time under peace conditions and speed limits the average keen motor cyclist can be counted upon to ride at a speed of 30 miles an hour over long distances, and judging by the reports handed in the modern motor cycle is practically accident-proof. This means that under war conditions any service of motor cyclists that was organised could be scheduled to run at 35 miles an hour on relays, and when it is remembered that unless permanent ways are guarded and patrolled throughout their length railway trains in war time are not scheduled to do over 15 miles an hour, it will be seen that even where railways exist between two given points the motor cycle is more than twice as swift.

As compared with telegraphic communication, the motor cycle has already in repeated tests been proved superior for any distance under thirty-six miles, whilst for distances up to sixty it is largely a matter of congestion of messages on the one hand and of weather conditions on the other.

Address by General Thorneycroft.

These are some of the basic conclusions on which to form our judgment. In the address given at the conference by General Alexander Thorneycroft, C.B., commanding the South Midland Division, very great stress was laid upon the value of the motor cycle in modern warfare, and the plain fact of the matter is this, that although we have thousands of excellent motor cyclists in the country, there is at present no suitable provision in the regulations for them to serve in the Regular or Auxiliary Forces. In the course of a few weeks doubtless the regulations will be amended, and it will then remain to be seen whether they are of a nature likely to appeal to the sort of man who owns a motor cycle.

How to become a Recognised Military Motor Cyclist.

At present there are only two authorised methods of becoming an officially recognised military motor cyclist, either to join a Divisional Telegraph Company R.E. of the Territorial Force as a Territorial soldier (100 vacancies in all) or to join Section B of the Special Reserve (100 vacancies); in the latter case the motor cyclist should first join the Territorial Army and then be transferred so soon as he has accomplished his recruit drills. He will get a retaining fee of £4 per annum, engineer pay plus 6s. 6d. a day whilst called out for training, which will be for a period of fifteen days, with the Regular Army at manœuvres.

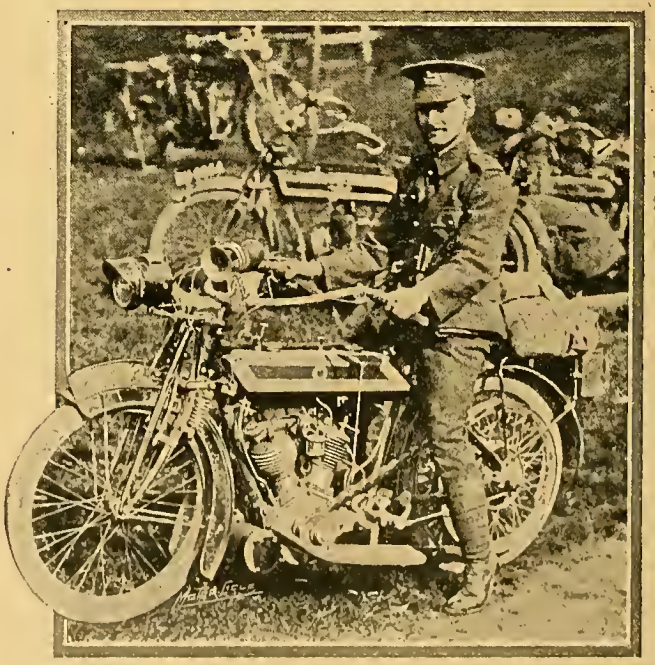
Doubtless this latter offer will prove attractive to those who are keen on military matters and who can undertake the liability to go abroad with the Regular Army if sent away on a foreign war.

Doubtless also in the course of the next few weeks the long-delayed authority will be promulgated permitting each of the existing thirteen cyclist battalions in the Territorial Army to enlist one officer and seventeen motor cyclists. These will draw the ordinary pay and allowance of their rank whilst at annual training and a petrol allowance, which, it is rumoured, will amount to 7s. 6d. a day.

Objects of the League.

That is exactly how matters stand at present. It is the object of the legion of cyclists to enrol 2,000 motor cyclists, who in the event of a national emergency would turn out to serve their country. Without a shadow of doubt, when that emergency arrives emergency regulations will be made to absorb that number—they will be urgently required.

In the meanwhile the legion wishes to organise them, teach them their duties, and prepare for war, whilst the military authorities are still chewing the cud of pensive reflection. CELERITER.



Private Schulton (6th West Yorks.), who rode his twin Rex from Bradford to Daventry to participate in the mobilisation test of motor cyclists on Saturday last.

CURRENT CHAT

TIME TO LIGHT LAMPS.

May	2nd	... ...	8.21 p.m.
,,	4th	... ...	8.25 ,,
,,	6th	... ...	8.28 ,,
,,	8th	... ...	8.31 ,,

Good News of Cheshire.

All motor cyclists will be glad to hear that E. W. Cheshire, who fell at Chew Hill, is progressing favourably, and it is hoped that he will be able to leave hospital before the end of this week.

The Cyclecar Movement.

Coventry is the centre of the motor cycle trade, and, therefore, it is hardly surprising to find that three large concerns are interesting themselves in cyclecars, and are making arrangements for large outputs in 1913.

Tourist Trophy Races.

The following have notified the A.C.U. that they intend to compete in the Tourist Trophy Races:

SENIOR RACE.—C. E. Murphy and J. A. Hoffmann.

JUNIOR RACE.—H. Huckley (Enfield).

Mr. T. W. Loughborough leaves for the Isle of Man on the 13th inst. to make preliminary arrangements for the race week.

A.C.U. General Committee.

A large number of nominations have been received by the Auto Cycle Union for the eighteen vacancies on the General Committee reserved for the representatives of the affiliated clubs. The ballot papers have been circulated to all the clubs, who are entitled to one vote in respect of each twenty-five members or portion thereof. The papers must all be returned to the Auto Cycle Union not later than Saturday next, the 4th inst.

Restarting Tests in Lyons Reliability Trial.

The Motor Cycle Club of Lyons held a touring reliability trial on the 28th ult. Great interest was taken in the class for variably geared machines. Among the machines which took part in this were Motosacoche, Terrot, Rivière, and Clément. The variably geared machines had to be stopped on two steep hills, viz., Cerdon and Serriers, and restarted by the aid of the clutch. Riders in this class had to weigh not less than 11 st. 11 lbs. The results were as follows:

CLASS I., 250 c.c.—1, Perrin (Peugeot).

CLASS II., 333 c.c.—1, Stoffel (Alcyon); 2, Ponti (Moto-Rêve).

CLASS III., 417 c.c.—1, Ludovic (Alcyon).

CLASS IV., 500 c.c.—1, Ex-officer (Magnat-Debon); 2, Pernette (Française); 3, Gabriel (Triumph).

CLASS V., 750 c.c.—1, Pouy (Moser).

CLASS VII., VARIABLE GEARS. — 1, Guignet (Motosacoche); 2, Gream Fenton (Clément); 3, Golaz (Clément).

A Police Trap on Watling Street.

We are informed that a police trap is in operation at Watling Street between the Four Crosses and Gailey Cross Roads.

C.T.C. Circular Tour.

The Cyclists' Touring Club announces a motor cycle circular tour.

The general idea is a twelve days' run with London for the start and finish, and taking in the following centres: Bristol, Birmingham, Manchester, Leeds, Newcastle-on-Tyne, Edinburgh, Glasgow, Keswick, Bradford, Leicester, and so back to London.

The tour will be in no sense a competition, or trial, it will be a demonstration pure and simple, nevertheless we hear certificates will be awarded.

Herts County A. and Ae.C.

At a meeting of the General Committee held last week, resolutions were passed revoking the appointment of the committee of the motor cycle section and its officers, and handing over the control of that section to the General Committee and officers of the club. The officers and members of the motor cycle section have, therefore, handed over the control of their section to the General Committee, as the former could not see their way to sign the indemnity required by the latter for 1912. It was further resolved that a sub-committee of the motor cycle members, to be approved by the General Committee, be formed for the purpose of organising competitions.

SPECIAL FEATURES.

Mobilisation Day.
Re-run One Day Trial.
Bristol B. and M.C. Hill-climb.
Making the Best of It (Illustrated).

Funeral of the late Mr. A. J. Moorhouse.

The funeral of the late Mr. A. J. Moorhouse, whose sad death was recorded in last week's issue, took place at the Dury Cemetery, near Manchester, on Wednesday of last week. Some idea of the late lamented rider's popularity may be gathered from the following list of names of individuals and bodies associated with the sport and pastime who sent wreaths: Mr. and Mrs. W. H. Wells, Mr. and Mrs. Broadhead (Northern Supply Co.), Mrs. Stenson Cooke, Messrs. Percy Butler, G. N. Higgs, N. D. Slatter, Ernest Frasetti, the committee of the M.C.P.A., The Motor Cycling Club, the Hendee Manufacturing Co. London Staff, *The Motor Cycle*, the A.C.U., the B.M.C.R.C., directors of Rudge-Whitworth, Ltd., Hutchinson Tyre Co., Staff of the Northern Supply Co., A. H. Horn, the Rex Manufacturing Co., Manchester M.C., Anglo-American Oil Co., Manchester, members of the Bradford M.C., members of the Stockport M.C., Imperial Boys' Manchester M.C., Britannia Lodge No. 3,005, workmen of the Rex Motor Mfg. Co., Coventry, staff of Motor Cycling, London, Streatham and District M.C.C., and Bristol B. and M.C.



The G.W.K. cyclecar on Sunrising. This machine unfortunately suffered a puncture, or it would have made a non-stop run in the A.C.U. One Day Trial.

Next Saturday's Brooklands Meeting.

Seventeen entries have been received for the Seventh Short Race on Saturday at the B.A.R.C. meeting at Brooklands, and fifteen for the Sixth Long Race. First race 2.25 p.m.

Fresh Identification Marks.

New identification marks have been allotted to Middlesex ("MX" in addition to "H") and to the County of London—"LF" in addition to those already allotted, which are A, LC, LN, LB, LD, LA, and LE.

A Stolen Machine.

A brand new T.T. Roadster Triumph with dropped handle-bars was stolen from the coach house of Mr. F. H. Cotterill, East View, Sutton Road, Walsall, on the night of Friday, the 19th ultimo. The numbers on the machine are: Frame No. 192539, engine 19011, magneto 984860. The owner offers £5 reward to anyone who will give information which will lead to the recovery of the machine.

The Late Mr. A. J. Moorhouse.

Mr. W. H. Wells, of the Hendee Co., wishes to express his very great appreciation of the many letters of sympathy received by him from numerous friends of the late Mr. Arthur J. Moorhouse. These are so numerous that he finds it impossible to answer them all. Mr. Wells also asks us to point out that any reference made in the last issue to records at Brooklands was done under a misapprehension.

The London-Edinburgh.

This important event will be held on the 24th to 26th inst. The meeting place is the Old Gatehouse, Highgate, on Friday evening, May 24th, where a hot supper will be served at 7 p.m. sharp. All machines must be at the starting place at 7.30, and competitors will be started at nine o'clock at suitable intervals, and in the following order: Motor bicycles first, sidecars second, cyclecars third, and cars fourth. The finish will be at the Royal Hotel, Princes Street, Edinburgh. The awards, which are numerous, are—single and return journey—gold medals in all classes, M.C.C. Challenge Cup for motor bicycles only, "Wells" Cup for sidecars single journey, "Clark" Cup for sidecars double journey, and "Fry" Cup for cyclecars double journey. Gold medals will be awarded to every rider (except the winner of the "Wells" Cup) reaching Edinburgh in twenty-three hours, silver medals within twenty-four hours, and bronze medals within thirty hours. Speedometers will be allowed this year.

Among those who have already entered are: W. Cooper (Bradbury), Geo. Brough (Brough), R. M. Brice (Brown), Southcomb May (Portland-Jap), and Owen Wells (Bradbury and sidecar), L. A. Baddeley (3½ Baddeley), N. O. Soresby (3½ Rudge), W. Pratt (3½ P. and M. and sc.), N. Greaves (2¾ Enfield), Gordon B. McKechnie (8 Dot-Jap), A. C. Robbins (3½ Humber), D. Gibbons (3½ Rover), J. Parnacroft (cyclecar), F. J. Watson (3½ Swift), Dr. Stanley (5 Indian), A. Mabon (3½ Rudge), E. Gwynne (7 Indian), J. R. Haswell (7½ Triumph and sc.), Harry G. Bell (5-6 F.N.), and J. Kerr (3½ N.S.U.) The president, Mr. Chas. Jarrott, will again drive through the run, and twenty cyclecars are expected to take part.

FUTURE EVENTS

May 4.—Coventry and Warwickshire M.C. Open Reliability Trial

" 4.—Mersey M.C. Open One-day Trial.

" 4.—Dublin M.C.C. Open Reliability Trial.

" 4.—Glasgow M.C.C. Open Spring Hill Climb.

" 11.—B.M.C.R.C. Race Meeting.

A special heading for competition announcements will be found at the end of the miscellaneous advertisement columns.

The Coventry and Warwickshire M.C. Open Reliability Trial.

Over sixty entries have been received for the above club's open reliability trial, which will take place on Saturday next, starting from Coventry at 8.30 a.m. The route, which is a secret one, and will only be made known to the competitors on the morning of the event, comprises a number of steep hills, and the performances of the machines on each of these will be observed by officials of the Coventry and neighbouring clubs. The event promises to be one of the most successful ever held by the club. The performances in the cyclecar class will be particularly interesting.

The First Motor Cycle Race.

The first hon. secretary of the Motor Cycling Club, Mr. George E. Roberts, wishes to correct the statement made in the article, "Ten Years' Experience of the Pastime," by Mr. F. Straight, and published in the last issue. Mr. Straight said that the first purely motor cycle race meeting was held on the Crystal Palace track in August, 1902, whereas Mr. Roberts points out that the first race meeting confined to motor cycles was engineered by the Motor Cycling Club, and was, he thinks, held in January or February, 1902.

Errors in Timing.

The following amended times in Classes 6, 7, and 10 in the Bristol M.C. open hill-climb have now been issued: Class 6—3rd, R. Holloway (Premier), 46⅖s. Class 7—3rd, F. P. Davies (Rudge and sc.), 1m. 13⅖s. Class 10—2nd, E. Kickham (Douglas), 53⅕s.

B.M.C.R.C. Race Meeting.

The third members' meeting will be held at Brooklands on the 11th inst. Racing will commence at 1.30 p.m. and will comprise the following events: The second 1912 time trial for the kilometre and mile flying starts. The 500 c.c. car challenge race for motor cycles of any type, distance (3 laps) 8 miles 269 yards. The second 5 lap cyclecar handicap, distance 13 miles 1,035 yards. The 750 c.c. car challenge race The 1,000 c.c. and the 50 mile senior T.T. race for heavy weight motor cycles complying with the T.T. regulations, except that mudguards, etc., may be removed. Entries close on the 4th inst.

Paris-Trouville.

A successful reliability trial was held on the 21st ult. by the Touring Moto Club of France from Paris to Trouville. Unfortunately several of the competitors suffered punctures owing to someone having strewn nails all over the road at one part of the course. There were a few tumbles, fortunately without injury to the riders, in the neighbourhood of Evreux and Lisieux. The event was divided into two classes. Those who arrived at Trouville and averaged 18½ m.p.h. were:

FIXED GEAR CLASS.—Brunet (2½ Griffon), Desitter (2 N.S.U.), Gabriel (3½ Triumph), Naas (3½ Griffon), Poulain (2 N.S.U.), Paul (2 N.S.U.), and Quatrenoix (2¾ Motosacoche).

VARIABLE GEAR CLASS.—O. de Carfort (3½ N.S.U.), Mme. Despaignes (2¾ Motosacoche), M. Despaignes (2¾ Motosacoche), Dubost (2¾ New Hudson), Gompertz (2¾ New Hudson), Portejoi (2¾ Motosacoche), De Vay (2¾ Clément), and Weill (2¾ New Hudson).



Sheffield and Hallamshire M.C.C. Speed Judging Contest. Some of the competitors waiting for the starting signal. (See Club News, pages 490-491.)

BRISTOL B. & M.C. HILL-CLIMB.

A MOST successful hill-climb was held by the above club at Clapron in-Gordano, near Portbury, and the club is to be congratulated on the thoroughness of its arrangements and the promptness with which the machines were got away. There was a slight delay at the start owing to one of the official timekeepers being late, but except for this everything went smoothly.

The hill was an excellent one for a climb—it is approximately two-thirds of a mile in length, and has an average gradient of 1 in 7. The start was on an upward slope, and almost immediately the competitors had to take a sharp right-handed turn and found themselves on a 1 in 6 grade; after this the hill eased somewhat and allowed the riders to get up speed. Not far from the top of the hill there is a right hand bend with a nasty hump on the road surface, but only the fastest machines had to be cut out here.

EVENT 1 (for single-cylinder lightweights) provided some wonderful performances. Berwick's New Hudson went up in fine form, as also did Barne (Zenith) and Slatter (Alcyon). Cocker's Singer came up well, but seemed to be over-geared. In this class Edmond's little Humber made a really wonderful climb for so small an engine.

EVENT 2 (twin-cylinder lightweights) was a Douglas success, Kickham's machine showing up wonderfully. His exhaust had the clean sharp bark of a perfectly tuned engine. We noticed several of the Douglases were fitted with Amac carburetters.

EVENT 3 (touring twins and singles).—Newman (Ivy-Precision) made fastest time, closely followed by Kickham (Douglas) and Harry Reed (Dot).

EVENT 4 (touring singles) was chiefly noticeable for the fact that Davies (Rudge), Kickham (Rudge), and Dixon (New Hudson) all made exactly the same times and tied for third fastest time. Newman and Reed again came up very fast.

EVENT 5 (for ladies) produced only two riders—Mrs. Simpson (Rudge) and Miss M. Hind (5 Rex). Both came up well, and the latter made a very fast climb.

EVENT 6 (the fastest times for racing machines) went to Dixon, Miss M. Hind, and Maurice (Premier).



Competitors waiting for their machines to be weighed at the foot of the hill.

Miss Hind rode extremely well, but by keeping close in to the side of the road encountered some nasty bumps. Haskins (Singer) and V. Taylor (Rudge) both showed up well in this class.

EVENT 7 (passenger machines).—Barnes made very fast time on his Zenith sc. W. W. Douglas brought up the Williamson sidecar in style and tied for second fastest time with Wade (Zenith).

EVENT 8 was for racing singles decided on time only. It was won by Newman on his Ivy-Precision. He had been improving his times at every ascent, and in this class made fastest time of the day. H. Reed (Dot) was second, and Tanner (Triumph) third. Webb (Premier) and Dixon (New Hudson) also made fast climbs.

EVENT 9 (for amateurs) provided the second and third fastest times of the day. They were made by



J. Cocker (2½ h.p. Singer) just entering the straight after rounding the first bend.



H. Read (3½ h.p. Dot), second on time in two classes, passing the finishing banner.

Vernon Taylor's Rudge and Kickham's Douglas respectively. After the climb both officials and competitors adjourned to the Full Moon Hotel, where a very excellent supper was prepared. Everything went with a swing, and toasts of "The Ladies," "The Club," "Competitors," and "Motor Cycle Press" were all duly honoured, and afterwards a concert was held.

Time results:

EVENT 1. (Lightweight singles, 315 c.c.)

H. Berwick (2¾ New Hudson)	48⅘s.
F. W. Barnes (2¾ Zenith)	52⅕s.
F. G. Edmond (2 Humber)	55⅗s.

EVENT 2. (Lightweight twins, 344 c.c.)

E. Kickham (2¾ Douglas)	47⅕s.
W. W. Douglas (2¾ Douglas)	45⅗s.
F. Ball (2¾ Douglas)	45⅗s.

EVENT 3. (Touring singles, 500 c.c.; twins, 650 c.c.)

H. C. Newman (3½ Ivy-Precision)	41s.
E. Kickham (2¾ Douglas)	43⅖s.
H. Reed (3½ Dot)	45⅗s.

EVENT 4. (Touring singles, 500 c.c.)

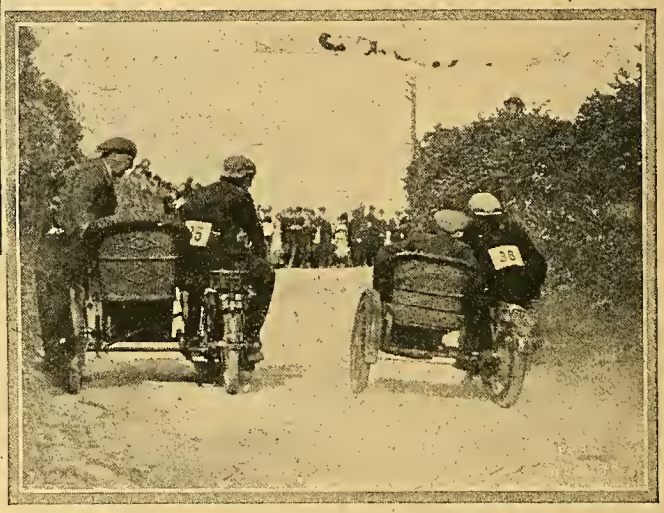
H. C. Newman (3½ Ivy-Precision)	40⅘s.
H. Reed (3½ Dot)	44s.
F. P. Davies (3½ Rudge)	47⅖s.
E. Kickham (3½ Rudge)	47⅖s.
H. G. Dixon (3½ New Hudson)	47⅖s.

EVENT 5. (Ladies.)

Miss M. Hind (5 Rex)	45⅖s.
Mrs. Simpson (3½ Rudge)	52⅖s.

EVENT 6. (Racing, 1,000 c.c.; time only.)

H. G. Dixon (3½ New Hudson)	44s.
Miss M. Hind (5 Rex)	44⅕s.
A. P. Maurice (3½ Premier)	45⅖s.



A. B. Wade (3 h.p. Zenith sidecar), who tied with W. W. Douglas (Williamson sidecar) for second place, starting in the passenger class.

EVENT 7. (Passenger, 1,000 c.c.)

F. W. Barnes (8 Zenith)	49⅘s.
W. W. Douglas (8 Williamson-Douglas) ...	54⅖s.
A. B. Wade (6 Zenith)	54⅖s.

EVENT 8. (Racing singles, 500 c.c.; time only.)

*H. C. Newman (3½ Ivy-Precision)	40s.
H. Reed (3½ Dot)	42⅖s.
F. J. Tanner (3½ Triumph)	43⅖s.

EVENT 9. (Amateur singles, 500 c.c.; twins, 650 c.c.)

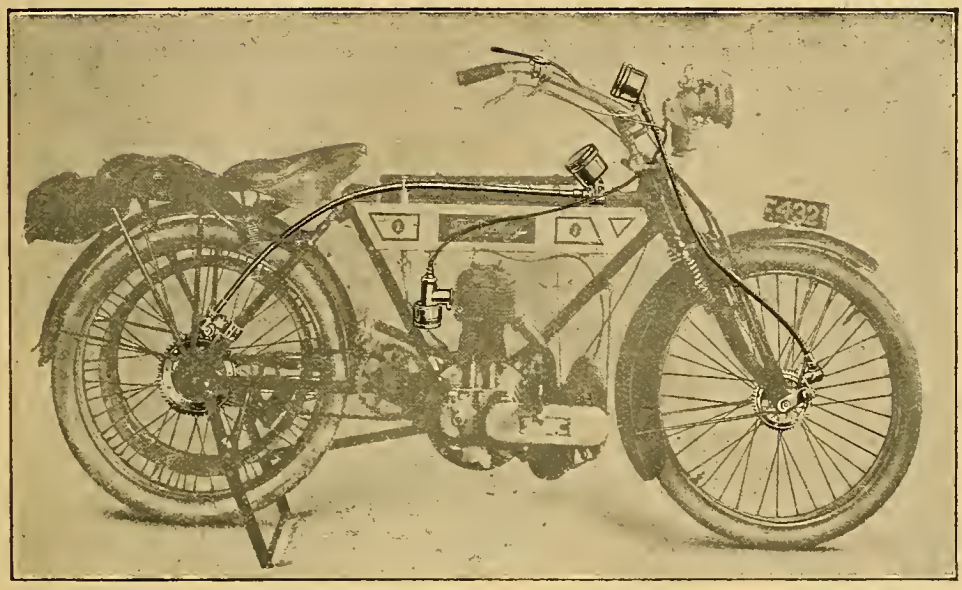
V. Taylor (3½ Rudge)	42⅕s.
E. Kickham (2¾ Douglas)	42⅖s.
H. C. Adams (3½ Triumph)	48⅖s.

* Fastest time of day.



Mrs. Simpson (3½ h.p. Ladies' Rudge) rounding the first bend after the start.

MAGNETIC SPEEDOMETERS



MOTOR CYCLE FITTED WITH STEWART SPEEDOMETERS, BOTH FRONT AND BACK WHEEL.

The BEST Speedometer at the LOWEST PRICE.

You can pay more, but you cannot get more.

Stewart Speedometers are made by skilled mechanics, the costliest materials, in the largest and best equipped speedometer factory in the world.

During the last three years, the average output from our factory has been **1,000 Speedometers per day,** and that is the sole reason for their low price. If we didn't sell so many we should have to charge more for them.

There are more Stewart Speedometers in use than all other makes combined —that's a good recommendation.

THE COOPER-STEWART ENGINEERING CO., Ltd.,

11, DENMARK STREET, CHARING CROSS ROAD, LONDON, W.C.

GAMAGES

STYLES & VALUES



FIG. 1.

The "Motor" Frieze Cycling Jackets.

Fitted with the "TRIPCOL" COLLAR. Double-breasted. Lined throughout body and sleeves with leather or fleece.

No. 1. Grey Frieze, lined Fleece (Fig. 1) **21/9**
No. 2. Do., Leather (Fig. 1) **23/9**
No. 3. Do., Superior quality, lined Fleece (Fig. 1) .. **30/-**
No. 4. Grey Frieze, Superior quality, lined Leather (Fig. 1) **35/-**
No. 5. Grey Frieze, Superior quality, lined detachable Leather (Fig. 2) **40/-**
No. 6. Real Irish Frieze, asst. colours, lined Fleece (Fig. 1) **40/-**
No. 7. Do., lined Leather (Fig. 1) **45/-**
No. 8. Do., lined Detachable Leather (Fig. 2) .. **50/-**



FIG. 2.

Extra Long Brown Chamois Waistcoat.

With Sleeves close fitting at wrist, excluding all draughts, **35/-** All sizes stocked.





The New Note in Motor Clothing.

OUR NEW

'DUAL-COAT' SUIT

JACKET & BREECHES (as illustration) in superior quality Tweeds and Homespuns.

Detachable leather linings, **45/-** SUIT, to order only.

Better quality Scotch Tweeds **63/-** SUIT, to order only.

Our Latest Speciality for Motor Cyclists.

Leather or Fleece Under-Jackets. These can be worn under an ordinary Jacket, and when not in use can be rolled up small and strapped to the machine.

The Fleece Jacket is double-breasted, and the Leather Jacket is fitted with a flap entirely excluding all cold winds.

In Tan Leather - **35/-**
Made in best quality selected Skins - **45/-**
In Camel Fleece - **26/-**



Patterns and Self-measurement Forms post free.

Our Motor List, No. 11, is post free on request.

A. W. GAMAGE LTD. HOLBORN. & BENETFINK & CO LTD. CHEAPSIDE. LONDON E.C.

Bristol B. and M.C. Hill-climb.—

The results on A.C.U. formula are as follow:

EVENT No. 1. (Lightweights.)

F. G. Edmond (2 Humber)	40.17
F. W. Barnes (2¾ Zenith)	45 59
H. Berwick (2¾ New Hudson)	51.25

EVENT No. 2. (Twin lightweights.)

E. Kickham (2¾ Douglas)	49 96
W. W. Douglas (2¾ Douglas)	51.92
P. Phillips (2¾ Douglas)	53.47

EVENT No. 3. (Touring, single and twin.)

F. G. Edmund (2 Humber)	38.45
F. W. Barnes (2¾ Zenith)	43.50
E. Kickham (2¾ Douglas)	50.19

EVENT No. 4. (Touring singles.)

F. W. Barnes (2¾ Zenith)	43.32
H. Berwick (2¾ New Hudson)	53.21
J. Cocker (2½ Singer)	55.14

EVENT No. 5. (Ladies.)

Mrs Simpson (3½ Rudge)	73.11
Miss Muriel Hind (7 Rex)	120.16

EVENT No. 7. (Passenger.)

H. G. Dixon (3½ New Hudson)	51.35
F. P. Davies (3½ Rudge)	58.76
V. Taylor (3½ Rudge)	61.88

EVENT No. 9. (Amateur.)

E. Kickham (2¾ Douglas)	49.03
F. C. Wasley (2¾ Douglas)	53.70
V. Taylor (3½ Rudge)	56.30

RACING AT PORTMARNOCK.



RACING AT PORTMARNOCK. Start of the four miles scratch race. F. J. Walker (3½ h.p. Rudge), the winner is the second rider from the left.

The second of the Dublin and District Motor Cycle Club's race meetings at Portmarnock Strand took place on Saturday last under very agreeable conditions, and with the sands in excellent order. The straightaway mile was won by P. J. Brady, on a 3½ h.p. Rudge, from T. E. Greene, similarly mounted. F. J. Walker had his Rudge tuned to perfection, and in the four miles scratch race for machines of unlimited capacity he beat the winner of the first race very easily, and also won the thirty miles handicap from the 1m. 20s. mark by over half a mile. Walker did the four miles in 4m. 38⅗s., and the thirty miles in 38m. 59⅘s.; which must be regarded as very fast times, bearing in mind that the races were run over an out and home course of a mile, with a turn at each end. Results:

Mile scratch (under 520 c.c.)—1, P. J. Brady (3½ h.p. Rudge); 2, T. E. Greene (3½ h.p. Rudge); 3, T. J. Dunphy (3½ h.p. Triumph). Won by 150 yards; 100 yards between second and third.

Four miles scratch (unlimited horse-power).—1, F. J. Walker (3½ h.p. Rudge); 2, P. J. Brady (3½ h.p. Rudge); 3, T. E. Greene (3½ h.p. Rudge). Won easily; a good third.

Thirty miles handicap (unlimited horse-power).—1, F. J. Walker (3½ h.p. Rudge), 1m. 20s. start; 2, P. J. Brady (3½ h.p. Rudge), 20s.; 3, J. J Parrell (2¾ h.p. twin Humber), 9m.

COVENTRY MOTORISTS v. BOY SCOUTS.

The manœuvres in connection with the above event, on Saturday, May 18th, will operate in the vicinity of Rugby. The idea of the scheme is that twenty cars and one hundred motor cycles will be used in an attempt to break through a cordon of scouts numbering with officers 250 strong. The motor force will be composed of members of the Coventry and Warwickshire M.C., and the scouts will be drawn from Rugby, Leamington, Warwick, Daventry, Southam, etc. The scouts will occupy the roads, etc., within a six-mile radius drawn from the Clock Tower, Rugby, but will not go outside this line, neither must the motorists attempt to cross it, before 3 p.m.

The rules are that at least five motorists must break through and leave evidence of their having done so at Mr. I. B. Hart-Davies's office, Bank Street, Rugby. A proportion of three to two on either side within twenty yards of each other captures. If the proportion be less than three to two, both retire 100 yards and await reinforcements. Motorists will wear white badges, which will be replaced with red when captured. Scouts will wear uniform, with a white band when captured. The motor force will make use of motor cyclist despatch riders to communicate with their base, *The Midland Daily Telegraph* Offices, Coventry, but must not use telephone or telegraph, which are to be considered as "lines cut." The general rendezvous will be the George Hotel, Rugby, at 5.30 p.m.

THE ARTHUR MOORHOUSE MEMORIAL FUND.

A representative meeting of motor cyclists was held at 89, Pall Mall, S.W., on Monday evening last to consider the question of a memorial to the late A. J. Moorhouse. Mr. Otto Thomas presided. It was agreed that an effort should be made to raise a sufficient sum to endow a bed in the Weybridge Cottage Hospital. This will require about £1,500, and it is hoped that something approaching this sum will be received. Donations should be sent to Mr. T. W. Loughborough, 89, Pall Mall, S.W.

	£	s.	d.
Hendee Manufacturing Co.	26	5	0
The Motor Cycle	10	10	0
The Hutchinson Tyre Co.	10	10	0
W. H. Wells	5	5	0
S. F. Garrett	5	5	0
The B.A.R.C.	5	5	0
Phelon and Moore	3	3	0
B. Marians	2	2	0
T. H. Tessier	2	2	0
O. C. Godfrey	2	2	0
G. N. Higgs	2	2	0
F. A. Applebee	2	2	0
W. Pratt	1	1	0
H. Karslake	1	1	0
H. Foote	1	1	0
H. C. Mills	1	1	0
H. P. Beasley	1	1	0
W. H. Browne	1	1	0
E. St. C. Duncan	1	1	0
Percy Butler	1	1	0
N. D. Slatter	1	1	0
A. H. Priestley	1	1	0
J. T. Madesley	1	1	0
G. Hillsdon	1	1	0
W. Cooper	1	1	0
W. Grew	1	1	0
E. M. P. Boileau	1	1	0
Otto Thomas	1	1	0

F. A. Hardy and J. R. Nisbet have notified their intention of subscribing.

Coventry & Warwickshire M.C. Open Trial.

The following entries have been received for the 150 miles open reliability trial of the above club which will start from Coventry over a secret course on Saturday next at 8.30 a.m.

MOTOR BICYCLES

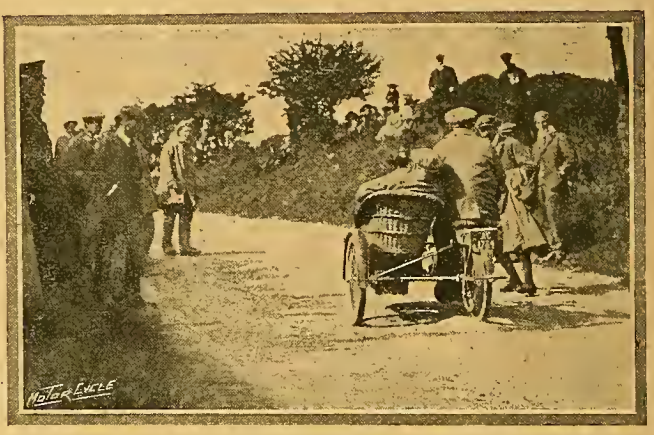
A. Walsgrove (2¾ Hazlewood)
H. R. Whitmore (3½ Rudge)
J. H. Pountney (3½ Rover)
C. T. Newsome (3½ Rover)
M. Anderson (3½ Swift)
T. Pollock (3½ James)
H. G. Hill (2½ Calcott)
A. G. Fenn (2¾ Humber)
F. G. Edmond (2 Humber)
P. Moss (3½ Premier)
H. Milledge (3½ Premier)
D. Elson (3½ Triumph)
R. Holloway (3½ Premier)
A. N. Barrett (3½ Rudge)
S. A. Rowlandson (3½ Rudge)
W. G. Blatch (3½ Rudge)
W. McMinnies (3½ Triumph)
T. Silver (3½ Quadrant)
J. Slaughter (4 L.M.C.)
H. M. Carter (2¾ Douglas)
G. E. Cuffe (7 Indian)
S. C. Perryman (3½ Ariel)
L. Newey (3½ Ariel)
S. R. Cooke (3½ Rudge)
R. N. Corah (4 Corah)
K. Clark (3½ Corah)
C. Q. Roberts (3½ Rover)
W. F. Newsome (3½ Triumph)
H. Greaves (2¾ Enfield)
R. W. Walker (3½ New Hudson)
H. G. Dixon (3½ New Hudson)
T. Carpenter (2½ Calcott)
Miss N. Hough (2¾ Douglas)
F. Whitworth (2¾ Douglas)
C. O'Connor (3½ Rudge)
C. Bailey (3½ Rudge)
W. D. South (3½ Rudge)
M. H. Simpson (3½ Rudge)
Mrs. M. H. Simpson (3½ Rudge)
H. Spanton (3½ Rudge)
A. J Sproston (3½ Rudge)
H. A. Crane (3½ Hercules)
R. Viggers (3½ Macbeth-Precision)
P. W. Pumphrey (3½ Arno)

CYCLECARS.

G. N. Keiller (G.W.K.)
—— (8 Rollo)
J. W. F. Crouch (6 C.M.C.)
F. Hill (6 A.C.)
H. F. S. Morgan (8 Morgan)

SIDECARS.

J. R. Haswell (3½ Triumph)
F. Smith (5-6 Clyno)
A. D. Arter (3½ James)
S. Wright (3½ Humber)
E. A. Gorton (6 Rex)
Miss Berend (4½ O.K. Precision)
B. Alan Hill (7 Indian)
S. T. Tessier (5-6 Bat)
V. Taylor (3½ Rudge)
H. A. Collier (8 Matchless)
C. R. Collier (8 Matchless)
R. E. Guest (8 Matchless)



Mobilisation Day. During the hill test at Newnham, J. R. Haswell (3½ h.p. two-speed Triumph and sidecar) took Captain Trapmann to the summit.

CLUB NEWS.

Foleshill and District M.C.

A reliability trial *via* Kenilworth, Barford, Kineton, Edge Hill, Sunrising Hill, to Stratford-on-Avon, was held on the 27th ult. W. Brandish (Triumph) was first, R. Edgar (Triumph) second, and A. Broad (Triumph) third.

North Middlesex M.C.C.

A speed-judging contest was held on the 21st ult. at Ivinghoe. Each competitor was required to ride a measured course four times at different specified speeds without the aid of watch or speedometer. Results:

		Total error.
1.	H. Boocock (Enfield)	2½s.
2.	T. R. Williams (Premier)	9½s.
3.	P. Dangerfield (Premier)	17½s.

North-west London M.C.C.

The Service Cup has been awarded to the N.W. London club in respect of the Easter inter-club competition to Harrogate and back combined with the hill-climb at Leathley Bank. The individual awards were as follows:

Silver cup.—C. Rose (Rudge) and H. J. Pooley (Premier), total marks lost on the three sections 7, tie for prize for best performance.

Silver medals.—J. W. Thomas (Douglas), 17 marks lost; E. D. Rose (P. and M.), 19 marks lost.

Bronze medal.—P. H. Goddard (Douglas), 109 marks lost.

Flexibility hill-climb, held at Northaw on Saturday, the 20th ult. Results:

Lightweight.—1, G. H. Hollis (Douglas); 2, H. H. Berlandina (Douglas); 3, F. Thomas (Douglas).

For engines less than 500 c.c.—1, E. D. Rose (P. and M.); 2, E. Lawrence (Rudge), fastest single; 3, H. J. Pooley (Premier).

For engines over 500 c.c.—1, F. C. Newbury (6 h.p. Matchless); 2, S. King Smith (5 h.p. Bat).

For passenger machines.—1, C. M. Down (7 h.p. Indian sc.); 2, E. North (3½ h.p. Premier sc.); 3, J. B. Haylor (7 h.p. V.S. sc.)

The side by side racing resulted in wins for Berlandina (Douglas) and Lawrence (Rudge) in their respective classes.

Open passenger machine trial to Coventry and back, May 18th.—Entries are coming in well for this event.

Cardiff M.C.

A hill-climb will be held at Rhubina Hill, near Cardiff, on Saturday the 11th inst., at 2.30 p.m. sharp.

The competition is open to members of the South Wales A.C., Welsh A. and A.C., Newport M.C.C., Aberavon, Port Talbot and District M.C.C., and the Cardiff M.C.

The competition will be divided into eight classes.

Dublin and District M.C.C.

The club held a flying half-mile time trial on a quiet road in the early hours of Thursday morning last. Although the road was slightly uphill, some very fast speeds were attained. Most of the owners of big motor cycles did not compete, and consequently nearly all the motor cycles were of the favourite 3½ h.p. type. The results were as follows:

CLASS A.—Engines under 520 c.c. Mean Time.

1.	R. Dunphy (3½ Triumph)	29.9s.
2.	F. J. Walker (3½ Rudge)	31.3s.
3.	T. E. Greene (3½ Rudge)	31.9s.

CLASS B.—Unlimited.

1.	R. Dunphy (3½ Triumph)	29.8s.
2.	F. J. Walker (3½ Rudge)	30.9s.
3.	T. E. Greene (3½ Rudge)	32.6s.

Streatham and District M.C.C.

A members' hill-climb was held at Titsey Hill on the 27th ult. The formula used was $\frac{W}{C \times T^2}$, as recommended by *The Motor Cycle*, with weight limits for each class. Results:

Class I. To 350 c.c. Weight limit 140 lbs.—1, R. G. Mundy (2½ h.p. Singer); 2, H. G. Ayres (2½ h.p. A.J.S.).

Class II. 450 to 550 c.c. Weight limit 190 lbs.—1, B. Pattison (3½ h.p. Zenith); 2, J. W. Ayres (3½ h.p. Zenith).

Class III. 550 to 1,000 c.c. Weight limit 240 lbs.—1, S. T. Tessier (5 h.p. Bat); 2, H. Hunter (5 h.p. Corah).

Class IV. Any type machine to 500 c.c.—1, W. O. Oldman (3½ h.p. Bat); 2, R. G. Mundy (2½ h.p. Singer).

Class V. Any type machine to 1,000 c.c.—1, S. T. Tessier (5 h.p. Bat); 2, G. F. Hunter (7 h.p. Zenith).

Class VI. Passenger machine.—1, G. F. Hunter (7 h.p. Zenith and sc.); 2, P. H. Garner (8 h.p. Zenith and sc.)

Club News.—

Herts County A. and Ae.C.

The open hill-climb which was arranged to take place on the 4th inst. is cancelled.

Manchester Amateur M.C.C.

This club will hold a 100 miles rel ability trial in Derbyshire on Saturday next. The start will be from headquarters, the George and Dragon Hotel, Cheadle, and the first man will be despatched at 2 p.m. The competition is for a cup offered by Mr. Ed. Broadhead, which is to be competed for in three trials of 100 miles each, of which this is the first.

Western District M.C. (London).

The ladies' day run to Burnham Beeches on the 28th ult. was well supported.

After a picnic lunch, an impromptu breakdown competition was held. The machine on which members tried their skill was E. S. Ritter's 2¾ h.p. Douglas. Four attempts were made, each competitor being allowed five minutes. The only one to succeed in getting the machine to start was W. F. Ritchie, who took 3m. 50s.

Essex M.C.

The above club held a reliability trial of 200 miles in twelve hours, in glorious weather, on the 21st ult.

An out and home course was chosen to King's Lynn and back, *viâ* Stanstead, Cambridge, and Ely. Of eleven starters only one failed to finish, the following qualifying for the club's silver medal: C. F. Michell (3½ P. and M.), A. E. Uffleman (3½ Humber), A. P. Howard (2½ Singer). H. J. Beal (3 N.S.U.), C. Pearson (2¾ Douglas), A. da Silveira (7 Indian), G. E. Revill (6 Zenith), W. C. Hemy (3½ Bradbury and sc.), D. S. Parsons (6 Rex sidette), and D. S. Kapadia (8 Rex-Jap and sc.).

PAPERCHASE.—Members are reminded that the paperchase will take place on Saturday, the 4th inst., starting at headquarters at 3.0 p.m. There will be a supper at the Eagle Hotel afterwards.

Bradford M.C.C.

The fourth annual open climb is to take place on Saturday, the 18th inst. The timing will be by the same accurate electrical apparatus, which proved so satisfactory at last year's climb. The hill chosen (for which permission has been obtained) is Leathley Bank, near Pool, and not far from Otley. The climb will be about threequarters of a mile in length. There will be altogether eleven events, including a class for sidecars and cyclecars. Entry forms and fees must be in the hands of Mr. Sheard Grange, trials hon. sec., Bradford Motor Cycle Club, Albert Buildings, Victoria Square, Bradford, by noon on Tuesday, the 14th inst. The hill is of excellent surface.

Surrey M.C.C.

The results of the members' hill-climb which took place on the 24th ult. are as follows:

CLASS II.

		Time.	Formula.
1.	E. Cox (3½ Zenith-Gradua)	X+19.	... 163
2.	H. Mitchell (3½ Premier)	X+16.2	... 158
3.	F. J. Houghton (3½ Trump-Jap) ...	X+16.2	... 149

CLASS III.

1.	F. W. Barnes (6 Zenith-Gradua) ...	X+ 3.8	... 165
2.	T. G. Meeten (5 Matchless) ...	X+12.6	... 103

CLASS IV.

1.	E. Cox (3½ Zenith-Gradua)	X+16.8	... 171
2.	F. W. Barnes (6 Zenith-Gradua) ...	X+ 3.8	... 165
3.	G. Meredith (3½ Triumph)	X+11.2	... 159

CLASS V.

1.	F. W. Barnes (6 Zenith-Gradua sc.)	X+13.8	... 195
2.	E. Cox (3½ Zenith-Gradua sc.) ...	X+44.	... 173
3.	W. G. Wells (5-6 Clyno sc.) ...	X+52.2	... 111

CLASS VI.

		Time.
1.	F. W. Barnes (6 Zenith-Gradua)	X+ 2.8
2.	T. G. Meeten (5 Matchless)	X+ 5.6
2.	G. Meredith (3½ Triumph)	X+13.6

Class VI. was decided on time. The other classes were decided on the formula: $\frac{W}{c.c. \times (T - \frac{1}{2}t)}$, where t = fastest time of the day.

Motor Cycling Club.

A members' hill-climb will be held on May 11th on a hill to be announced later. All machines must be standard touring types. There will be five classes for motor cycles, one for sidecars, one for cyclecars, and one for cars.

Cumberland County M.C.C.

This club held a reliability trial on the 25th ult. over a distance of eighty-five miles. The course selected was a tour in Eskdale and Dumfriesshire, and included an ascent of the Eskdalemuir Hills, on which the surface is vile. There were three checks on the outward journey and a secret check on the return, and, despite the latter, four members tied for first place, each completing the course without losing a single mark. These were: W. S. Clark (Rover three-speed), R. L. Williamson (T.T. Bat), E. T. Scoll (T.T. Triumph), and W. B. Little (T.T. Rudge).

Crossgates and District M.C.C.

This newly-formed club opened its competition season on Saturday last, with speed trials over a flying half-mile, there being classes for solo and sidecar machines. The handicapping was in the hands of the captain, Mr. J. Stuart-White, and valuable assistance in marshalling and timing was rendered by members of the Leeds Motor Cycle Club. Results:

Solo Class: 1, J. Tattersall (3½ Bradbury), 9s. start, figure of merit 22½; 2, G. Botterill (3½ Triumph), figure of merit 23; 3, S. Kirk (2½ Singer), figure of merit 26.

In the sidecar class, H. Whitfield (3½ Triumph), with 20s. start, just beat F. Crosthwaite, scratch (8 Matchless).

The club will hold a hill-climb next Saturday.

Middlesbrough and District M.C.C.

Brilliant weather favoured the hill-climbing competition held on Saturday, April 20th, at Castleton Bank. A goodly crowd of spectators was present, and some excellent riding was witnessed. The results, which were decided on A.C.U. formula, were as follows:

Class I. (Lightweights not exceeding 140 lbs.).—1, J. Nivens (2¾ h.p. Enfield).

Class II. (Touring Single-cylinder Machines).—1, H. S. Moon (2¾ h.p. New Hudson); 2, C. Smith (3½ h.p. Precision).

Class III. (Twin-cylinder Machines).—1, H. Beckwith (2¾ h.p. Douglas).

Class IV. (Variable Gear and Free Engine Machines).—1, P. Williams (3½ h.p. f.e. Triumph); 2, J. Gilchrist (3½ h.p. Zenith Gradua).

Class V. (Open to any machine).—1, J. Dale (3½ h.p. Triumph); 2, E. Goult, Doncaster (3½ h.p.p Rudge).

Harrogate and District M.C.C.

In fine but dull weather a speed-judging competition was held on the 27th ult. over a give and take course of twenty-two miles, the route having been kept secret and the distance being unknown: 1st, J. J. Day (3½ Bradbury), 2m. 58s. slow; 2nd, E. Maynard (3½ Triumph), 3m. 11s. slow; 3rd, M. Kitchin (3½ New Hudson and sc.), 3m. 46s. slow.



Harrogate and District M.C.C. Speed Judging Competition. Scene at the start. The first motor cyclist in the picture—J. J. Day (3½ h.p. Bradbury)—ultimately proved the winner.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street E.C., and should be accompanied by the writer's full name and address.

Gradient of Knocksaughey Hill.

Sir,—The gradient of Knocksaughey Hill is 1 in 4½, the length only 1,500 yards. The high speed on Easter Monday was due to a very strong gale blowing up the hill.

ALEX. GALBRAITH.

Sir,—Regarding your query as to gradient of Knocksaughey Hill, where the Belfast and District M.C. hill-climb was held on Easter Monday, I know the hill thoroughly, the steepest part being, I feel sure, 1 in 3. As to the average for the whole hill I make it 1 in 4 to 1 in 4½. It is by a long way the steepest hill in this country on a principal road. The information which I have given you is on the authority of a civil engineer. I should say that the top of the hill is most certainly more than 1,000 feet above the sea level.

WM. YORK.

The Tragic Accident at Brooklands.

Sir,—With regard to the tragic accident which occurred at Brooklands on the 20th ult., I must say the various explanations that have been put forward seem to me far from convincing; in fact, there is no explanation at all, except that a thoroughly experienced Brooklands rider lost his balance in the first fifteen minutes of a race.

I think we may take it that Mr. Moorhouse was just before the accident steering with one hand; the other was probably doing something to the carburetter (surely not the hot silencer, as some seem to think). I suggest that, while trying to make an adjustment, the rider's hand came in contact with a high-tension wire terminal. This would fully explain the sudden swerve, which, to the regret of all, he was too late to rectify.

V.A.G.

Clashing of Dates.

Sir,—In your issue of the 25th ult. you publish a letter from Mr. Pooley, in which he claims that his club is not to blame for the clashing of dates. My committee did not draw up their fixtures for this season until late in December, and when drawing up the fixtures had in front of them the list drawn up by other clubs at Olympia, and, as a result, fixed the cyclecar trial for May 18th, which at that time was open except for a speed trial organised by another London club which was not likely to be affected by or to affect the cyclecar trial.

My club applied to the A.C.U. for a permit for an open passenger trial on May 18th as long ago as December 30th, 1911. On March 6th I had a letter from the A.C.U. mentioning certain conditions that would have to be embodied in our rules for a cyclecar trial and promising us a permit on these conditions. Naturally, with this letter in front of them my committee considered the permit as good as granted. On hearing of the North-West London trial for May 18th I was instructed by my committee to write the A.C.U. pointing out that as we were in the field first with the suggestion to hold an open passenger machine trial, it must cancel the North-West London Club's permit.

I have now heard from the A.C.U. that it will not cancel this permit. This is not all, however. I learn this week, for the first time, that a permit has been granted to the Liverpool M.C.C. for an open hill-climb on June 1st, this being the same date as our open hill-climb, which was arranged as long ago as December, and a permit promised on February 10th.

R. VERNON C. BROOK, hon. sec. Birmingham M.C.C.

How to Carry a Camera.

Sir,—I quite agree with your editorial note to the effect that a camera should be carried on the rider's back, and should not in any circumstances be strapped anywhere on the machine. Perhaps it would interest Mr. Wilson to know that I carry my Klimax *under* my macintosh, which I always wear when motoring, and the dark slides (six) are hardly noticeable in an inside pocket of the jacket. I never carry a stand, and can always use the machine or sidecar for time exposures, and have found this method very satisfactory.

F. J. WOOD.

Unofficial Records.

Sir,—I am pleased to find, according to your leaderette in last week's issue, that these unsatisfactory unofficial trials are to be discountenanced by the powers that be. Last year I called attention in your columns to the unsatisfactory nature of these unofficial trials, only to raise the wrath of certain riders, who concluded, erroneously, that I deprecated the sporting phase of such rides, when, in reality, I made it clear that I admired the ride, as a ride, but in the interests of prospective purchasers of machines condemned the "bunkum" with which such rides abounded in respect of reliability, since there was no method of making the general public cognisant of the repairs and adjustments needed, how many times belts, etc., were attended to, petrol consumed, and so on. One day we shall doubtless see the A.C.U. "observing" trials, like the R.A.C. in the car world. However, it is some satisfaction to have my views of last year vindicated.

HARRY P. BELL.

MOBILISATION DAY AT DAVENTRY.



General Thorneycroft chatting with a group of the Legion of Motor Cyclists at Daventry (see page 483).

Wanted, a Hub Cone Locking Device.

Sir,—I was rather surprised to notice "Ixion's" remarks regarding the necessity for a new hub cone lock. On my Premier, which is a 1910, the usual loose cone is screwed into position, after which a D washer is placed up to same, the spindle having a flat to accommodate this, and then a further locking cone is screwed up against the washer. In taking wheel in and out of the forks, the adjustment is not interfered with. D. RICHARDSON.

Are Open Hill-climbs being Overdone?

Sir,—Of what use are the present motor cycle hill-climbs? Do the trade riders really care for them? I have attended some of the big hill-climbs, and I always come away with a feeling of disgust that such competitions are allowed on what are often extremely dangerous hills, dangerous not only for the competitor, but also for the spectator. Each week one sees one or two poor trade riders have bad spills. Does it do any good to the industry? As far as I can see it is breeding a type of machine and man that are not wanted on the road.

One has to go far to find a hill that is a real test for the modern motor cycle, and surely the hill-climbs at present become a farce as such, and merely a speed test over a tricky course for those riders who care to risk their necks.

The Royal Automobile Club has suppressed the open car hill-climb on the road, and, if it does its duty, will put a stop to the present motor cycle hill-climbs that are often run with poor organisation on dangerous hills where high speed are attained. ERIC W. WALFORD.

The Trade and the T.T.

Sir,—I should like to write a few words against the attitude which has been taken up by the maufacturers towards the T.T. Races. Now, it must be fairly evident to the majority of motor cyclists that the Tourist Trophy Races have done an incalculable amount of good to motor cycles, and as the motor cycle of to-day is by no means perfect, why do the makers of present day motor cycles make this unwise boycott? I notice, moreover, that the firms who were in favour of the bond being abolished are firms who have benefited enormously by their racing experience and enterprise, and this leads one to the conclusion that other makers are afraid of risking their new features, the whole machines for that matter, to this rigorous test.

On the other hand, I notice that the cause of the formation of this bond is that manufacturers do not wish to spoil amateurs' sport by entering their trade machines and riders.

If this be so, how is it that firms send specially picked machines and riders to open hill-climbs week after week practically to sweep the board?

Surely this attitude is scarcely consistent.

One can see in the machines made by makers who have had a great deal of racing experience the results of this experience.

One has only to inspect the Matchless, Scott, Triumph, and Rudge machines to prove this, and as an admirer (nothing more) of these machines, I can see on every hand where racing experience has been incorporated, and, I think, the above firms will admit that their experience on track and road has been invaluable. This race has been the means—no other race could be so exacting—of giving us engines reliable and efficient, good, sound, strong, and serviceable fittings, and, of late years, the variable gear. This latter part needs more and more perfecting, for it is scarcely in its ideal form on any motor cycle at present. Freak hill-climbs serve no useful purpose, save that of enhancing the driver's reputation. Short spurts with "competition" engines on a short gradient of 1 in 10 serve the only purpose of providing a spectacle for onlookers; the majority of reliability trials only serve to show how accurately a man can gauge his speed between controls, so I think that the Tourist Trophy Races stand out as the supreme test for a motor cycle—a test that all makers are not willing to subject their machines to. I only hope that these manufacturers who submit their machines to the great test will receive their due reward, and that other makers will lose owing to their efforts to produce a stagnation in the trade. Distinct departures from standard are now almost a rarity, so let us have the T.T. Races to encourage and help the enterprising manufacturers. MERE RIDER.

Sidecars and Single-cylinder Engines.

Sir,—Scarcely a week goes by without some of your correspondents enquiring whether a 3½ h.p. sidecar combination is really satisfactory. I think it would interest novices or hesitating purchasers to know another novice's experience. Mine is a 3½ h.p. 1912 New Hudson, with Millford sidecar, having extra seat for child. This machine was delivered at the end of February, and since then has been driven just under 1,000 miles in journeys varying from thirty to sixty miles, the petrol consumption being rather over 75 miles per gallon. As regards trouble, though almost a novice, I have had very little—the belt pulled through in 208 miles (a Dunlop 1in.), both exhaust and inlet valves springs broke (cause unknown) during the next 100 miles, and then the exhaust valve head smashed, probably, I am told, owing to my using a spring of wrong strength whilst waiting for the manufacturers' replacement. The tyres (Dunlops) have given no trouble, though they have had rough usage. The worst hills round here ("flat" Essex has some hills, *e.g.*, Colchester, "Clingoe," etc.) have no terror for the machine, thanks to the Armstrong three-speed gear, which is absolutely satisfactory, and has needed practically no adjustment so far. I write this, as I firmly believe that these minor points are of vital interest to many would-be motorists, as well as



The "family coach" referred to in letter from Leonard Fenn.

old hands. On one occasion alone, doing shopping in a neighbouring town, no less than three absolute strangers, seeing my machine outside shops, approached me with many apologies, followed by many queries as to the machine and gear.

Needless to say I have not the slightest interest in these firms beyond that arising from the satisfaction of ownership of one of their products. I enclose a photograph of my "family coach." I rode exactly as illustrated for a mile or so to test the power of the machine. She ran beautifully, though I did not risk top gear. LEONARD FENN.

Consumption Comparisons.

Sir,—I was much interested in your recent articles and letters on petrol consumption comparisons, and my opinion is that the heavy comparative consumption of a motor cycle is not due to what the engine itself consumes, but what the carburetter and its connections WASTE (in big letters please). I am a novice, and bought a 5-6 h.p. Rex twin, second-hand, in 1911, which ran about forty-eight miles per gallon when I bought it. Seeing that the engine and bicycle parts were in good condition, I fitted a 1911 B. and B. carburetter, shortened the lift of the inlet valves from $\frac{5}{16}$ to 82 thousandths of an inch, took springs out of the inlet valve that would open with ½ lb. weight, fitted 3¼ lb. springs (I have found the knack of making a spring that will always keep its strength), and large extra air

pipes over both extra air and main inlets pointing upwards.

The reason for being pointed upwards was that petrol vapour, being heavier than air, lies in the bottom of the pipes when standing, is drawn into the engine, and makes starting very easy. When the air pipes were fitted I found more extra air could be given, so I fitted a smaller jet, No. 30. As thus fitted I ran 400 miles on three and a half gallons of petrol, 150 miles of this with a 10½ stones passenger on the back. The 400 miles was done from Birmingham to Aberystwyth and back and various trips out every day to Aberayron, Devil's Bridge, and other places, so that, as remarked by Mr. Alex. Rogers, I had some big hills and the roads were not picked.

I may say I always ride with the spark well advanced, throttle nearly closed, and as much extra air as engine will take without misfiring. Average riding speed twenty-five miles per hour, gear 3⅞ to 1, Bosch magneto ignition, fixed engine. The engine thus fitted with small jet is not apparently in racing trim, but I can get the engine running so quickly that it merely hums. No exhaust can be heard; in fact, as fast as I care to ride, as I have only one neck. I cannot give the speed, as I have no speedometer.

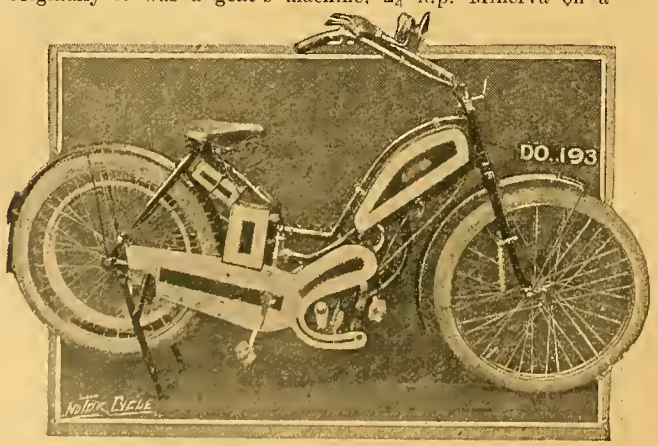
It has always been my opinion that the efforts of makers should be in the direction of economical running, as ample power is now got out of the ordinary bicycle engine, and instead of trying to get 10 h.p. out of an engine fitted with bearings that a stationary engine maker would fit to a ½ h.p. engine, the makers should try and improve the running costs. It makes a considerable difference to the pocket in 5,000 miles with petrol at 1s. 6d. per gallon.

The ordinary carburetter appears to waste more petrol than it feeds to the engine, and on all carburetters, if examined round the extra air inlet, evidence can be seen of the wastage, especially if the carburetter be dusty. In a perfect motor cycle not a drop should be wasted or blown out, and, if blown out, should be caught and taken into the engine on the next suction stroke. If Mr. Alex. Rogers will take a little trouble with his power plant, no doubt he will get equally good results, especially keeping his float chamber in order, so that nothing is wasted when standing. It will be seen that with the same engine I improved the running consumption from 48 to over 120 miles per gallon (proof absolutely that petrol was being wasted, not consumed), with better running into the bargain.

ROBERT W. BILL.

Rejuvenating Old Pattern Machines.

Sir,—As regular readers of *The Motor Cycle*, we thought it might interest you to let you see how we have converted an old motor cycle, of which we enclose a photograph. Originally it was a gent's machine, 2¾ h.p. Minerva on a



An old pattern Minerva which has been converted for lady's use.

Chater-Lea frame. This we have cut down and re-assembled as a lady's machine. We may say it runs splendidly. Perhaps this will solve the problem of what to do with the obsolete motor cycles.

BROWN BROS.

Interference with Competitors in the Liverpool A.C.C. Trial.

Sir,—During the Liverpool Auto Cycle Club trial on April 13th it was my duty as a marshal to stop all the competitors at the approach to Cilcain Hill, and to send them up singly.

During my wait there I was approached by the constable placed on the hill and informed that he had heard rumours of a plot by certain members of a chapel congregation in the vicinity to drive a horse and cart down the hill in order to baulk all the competitors on the hill, in spite of the fact that we had made arrangements to send them up separately, to cause no obstruction.

Now a cart did turn up, and got in the way of Miss Baxter and others, and just as it was passing me the driver lashed out with his whip, intentionally striking Mr. Pollard across the shoulders.

I was just going to run after the cart, and obtain the name and address of the driver, when seven or eight competitors turned up, and, as I had no assistance, I was unable to leave my post, but several of the competitors saw the man's action, which I think most dastardly.

My object in writing is that if any reader of your paper who happens to be driving through the district and meets with similar treatment will communicate with me, I will see that the matter is placed in the proper quarter to have a stop put to it.

LIONEL C. BARTON,
Vice-president Liverpool A.C.C.

Washing Shower-proof Overalls.

Sir,—My overalls are dirty, and I should like to know if you or any of your readers have had any experience in washing proofed woven material and the best methods of retaining or regaining the "shower-proof" qualities.

J. L. HOFFMANN.

Deposit in Petrol Tank.

Sir,—I find that after two years' use my petrol tank, made of brass, is lined inside with a fluffy, sticky deposit some of which often clogs the wire gauze of the carburetter. It is no use to swill the tank with paraffin. Swilling it with paraffin and some balls has only removed part of the deposit. Perhaps some of your readers can tell me how I can best remove this objectionable deposit and prevent formation of a new lot.

L. W. J. DEUSS.
Fort Johnston, Nyassaland.

Pillion Seats.

Sir,—I notice with interest a letter from Mr. W. B. Turner supporting the above method of carrying a passenger, and can endorse his remarks *re* safety and comfort of this practice, provided reasonable care is taken to see that the carrier is sufficiently strong, all nuts secure, and tyres and tubes in good order.

I have carried a friend several thousand miles in this manner—our combined weight is twenty-two stones—on a 1910 Triumph with Mabon clutch. My friend sits upon a "Michell" seat, and is perfectly comfortable even on the roughest roads; in fact, I think the spring cushion is more luxurious than the saddle.

We have toured from Wanstead to Wye Valley, South Coast, and East Coast, generally using a gear of about 4½ to 1, and have very rarely come across a hill which the machine would not romp up with its double load.

In my experience the steering (even round corners) is improved by the extra weight, which, as Mr. Turner says, has a steadying effect, and it is obvious that as the dead weight of a sidecar is dispensed with, and wind resistance is not increased, this method of passenger carrying puts far less strain upon the engine, and allows a higher average speed than a sidecar combination with the same power.

The Mabon clutch is a great boon, always getting us away without trouble, and proving very useful in traffic, turning in the road, etc.

I had some trouble with rubber belts, but since fitting a "Service" belt all worry has disappeared, except for occasional slip on steep hills.

Tyres have also stood up very well. I am at present using a Clincher Dreadnought on the back, which, after 1,100 miles, shows very little sign of wear.

One objection to pillion seats is the fact that the passenger is just in the right position to catch the dust thrown up by the back wheel, but this objection can be washed away with a little soap and water.

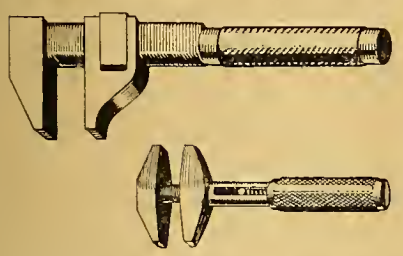
ROBERT T. H. ADAMS.



Two New Gears AND Some Accessories.

Two Useful Spanners.

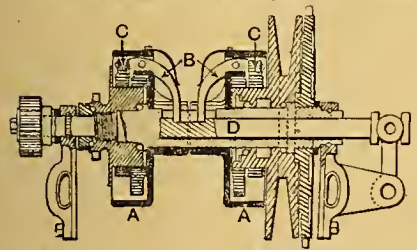
Messrs. A. W. Gamage, Ltd., Holborn, E.C., are always to the fore with useful accessories for motor cyclists. The two spanners which we illustrate are decidedly handy and interesting. The bigger of the two is known as the Crawford, and



is provided with a spring and screw controlled movable jaw enabling one to adjust the jaws instantly to any size nut. The smaller one is, owing to the shape and size of the jaws, exceedingly handy for small nuts and inaccessible parts of a machine.

Lincoln-Elk Two-speed Gear.

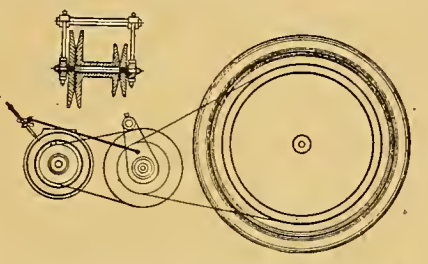
An interesting counter-shaft two-speed gear has been brought out by Mr. James Kirby for the Lincoln Elk motor cycles. There is an enclosed chain-drive from the engine to the counter-shaft. The counter-shaft runs on ball bearings throughout and carries two contracting clutches C contained in the clutch boxes A and operated by the fingers B. These



fingers are normally held in the free engine position by leaf springs attached to the clutch-boxes, but are caused to actuate their respective clutches by sliding the centre spindle D. This is done by a change-speed lever fixed on the bottom tube of the frame. In the forward position of the lever, the low gear clutch is engaged, and the final drive is by chain; the middle position gives free engine, and the backward position gives the high gear when the final drive is by belt. An engine clutch, of a similar type to the gear clutches, can be fitted if free engine only be required. Both clutch and two speed have undergone extended road tests before being put on the market, and have proved satisfactory in every way.

The Crofton Hunt Transmission.

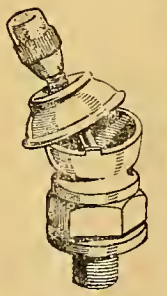
This method of varying the gear ratios, which hails from Johannesburg, has enabled the inventor to climb Mulder's Drift Hill on a 3½ h.p. Precision with sidecar and passenger, total weight 614 lbs., a feat previously considered impossible. The gradient varies from 1 in 5 to 1 in 11, and the hill is considered the stiffest in the Transvaal, consequently it will be seen that the performance redounds to the credit of both gear and engine. The ratios obtainable without altering the adjustable pulley are from 4½ to 11 to 1.



The principle of the gear is already well known to our readers, being similar to the J.A.P., Differo, and others, with the difference that one belt is on each side of the machine. However, we understand that provisional protection has been granted, and that Mr. Crofton is shortly leaving for England to interview manufacturers. The method of operation will be easily seen on reference to the accompanying diagrams.

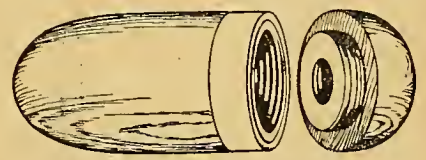
An Ingenious Compression Tap.

Mr. A. C. Davison, the well-known accessory manufacturer, of 163, Arlington Road, Camden Town, N.W., has lately placed on the market an ingenious compression tap which is of quite novel design. The tap consists of two main portions, a spindle forming a ball valve (this spindle is provided with a square situated in its centre and a fibre handle) and a cup, consisting of an upper and detachable portion or lid provided with two recesses on its inner periphery. These engage with two keys on the edge of the cup itself. The keys and slot simply serve to prevent the two from turning. A spring is employed which serves the double purpose of keeping the ball valve close against its seating and pressing the lid against the cup. To open the compression tap it is only necessary to depress the spindle. This releases the ball valve from its seating, and if the spindle be turned and depressed, the square is allowed to pass through the slot in the hole in the lid. The square thus holds the lid close up against the fibre handle, and the spindle can be tipped to one side and sufficient room is left for the injection of petrol, etc. To close the compression tap, it is only necessary to hold the handle between the fingers, turn the lid until the key on the cup engages with the recess in the former, give the handle a half-turn and the spring returns the spindle to its normal position. By means of the spring the ball valve is kept up against the seating, and there should be no possibility of leakage. It possesses the advantage of being neat, dust-proof, and compression tight.



A Neat Plug Case.

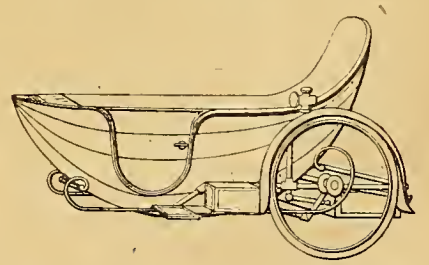
Mr. Parnaby, 319, Fletcher Road, Preston, is making a speciality of a neat sparking plug case, an exceedingly useful accessory made of turned wood. It is adapted to take plugs of almost any



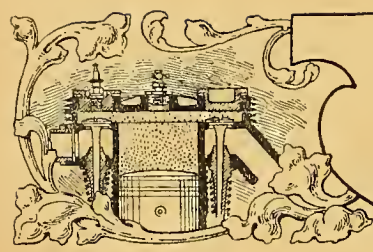
size, and ensures them being carried safely and being kept clean. Such an accessory should find a place in every motor cyclist's tool bag.

A Dropped Frame Sidecar.

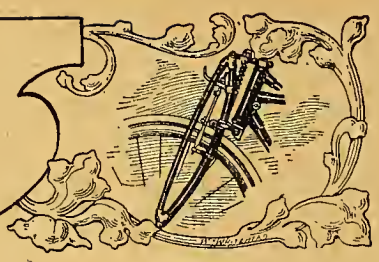
A new boat-shape sidecar is being introduced by Messrs. W. Hastings and Co., motor engineers, Huddersfield. One tube of the dropped frame is beneath the axle, to this is attached the diagonal



stay to the saddle pin, giving great rigidity. A six inch car mudguard is fitted with footboard on which is placed a small locker to contain generator or battery. The body is of reed cane sprung from three points. There is ample tool and luggage carrying capacity, combined with a pleasing appearance. Our illustration is from a line drawing of the sidecar sent to us by its makers



MAKING THE BEST OF IT.



A TREATISE ON TUNING-UP. By W.G.A.

THERE is no motor user in the world keener than the average motor cyclist in getting the utmost power from a small engine, and it is only fair to say that, generally speaking, there is no one more successful. One and all, from him who bestrides a 1912 T.T. model, down to the humble follower of the sport who jogs along on an antediluvian 1¼ h.p., are actuated by the same desire, that of wanting a little more power out of the engine, and many and various are the ways in which they set about this business. There are several methods of tuning-up an engine, and these may be divided into two classes, first, that which requires mechanical alteration and re-designing of certain parts, and second, that which is obtained by the mere adjustments of existing parts.

Mechanical Alterations.

Than the former there is certainly no more fascinating hobby to those who do not mind having their machine off the road for perhaps a few days at a time, and who likewise possess or have access to workshops in which the necessary machining can be done. To tune an engine in this manner is practically to reconstruct it, all of which requires time, a certain amount of money, and a great deal of knowledge if the results are in any way to be proportional to the outlay of each. To carry out this class of work with any chance of a satisfactory result it is absolutely necessary that the operator be a fairly shrewd engineer, and he would, therefore, require no special hints and tips to guide him on his way.

The second class of tuning-up is one that can be carried out by anyone who uses a little commonsense and possesses enough skill to use the few homely tools which are required.

Adjustments.

Provided the motor cyclist restricts his attention to mere adjustments and very minor alterations, which after all is a fairly wide field of activity, he is at least sure that no lasting harm can be done even should he make some foolish mistake. I have often seen it stated that to encourage amateurs to interfere with their engines is entirely wrong, since makers may be counted upon to have them adjusted to give the best possible results. With this I do not agree. In the first place, there is nothing so informative and useful as the knowledge which can be gained in tuning-up an engine intelligently, and if a reasonable programme of operations be followed nothing but good can result. On the other hand, it is perfectly absurd to suppose that any manufacturer of motor cycle engines, turning them out at a competitive price for the open market, can possibly afford to spend upon each one the time and trouble necessary to bring it up to the very highest pitch of efficiency. The designer sets himself a certain minimum limit of power output for each type of engine, and as a rule no engine leaves the works until it has passed this standard. At the same time, every engine maker knows that, by some happy chance, an occasional engine comes along, which, though apparently exactly similar to all the others, gives under test a very notable increase of power.

Beyond a certain point, the adjustments required for improvement and efficiency become very very fine indeed, and these occasional super-engines may be considered to take advantage of minute differences occasioned in course of machining. Whilst one would not be so bold as to say that equally good results

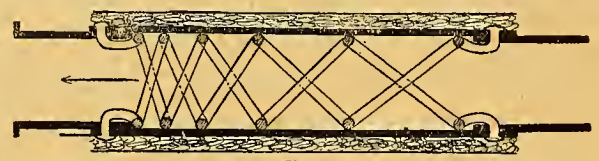


Fig. 1.

could be obtained out of any other engine, provided sufficient pains were taken upon it, this much at least is absolutely certain, that the average engine, as turned out from the factory, is always capable of a certain amount of improvement.

Variation of Engines.

The amount of this improvement is, however, a varying quantity, for it is well known both in locomotive, motor car, or, indeed, any other engineering practice, that even when micrometrical measurements show that two engines are as far as humanly possible absolutely similar in all respects, yet there is always some almost psychological difference which may cause a marked variation in their behaviour. This is due to some very slight differences in the composition and "state" of the metals used, which differences are, of course, quite beyond deliberate practical control. This fact need not, however, worry the motor cyclist, for no one can possibly do *more* than get the highest *possible* results, and, if the fates have willed that his engine must at least be slightly on the inefficient side, he is not to blame. He has done his work when he has reached his limit.

The tuning-up, which can be done by mere adjustment of an engine, offers a sufficiently wide field for experiment for the most aspiring amateur record breaker, and this field may be classified as follows:

1. Carburation.
2. Ignition.
3. Compression.
4. Valve setting.
5. Gear ratio.
6. Silencer.

It is, perhaps, a little too much to say that they are all equally important, but it is certainly sure that they are far more equally so than has been imagined. For instance, how few give more than the scantiest attention to gear ratio. Yet, if the very best results are to be obtained, this must be adjusted to something more than one place of decimals, but it is rarely indicated to more than the nearest half, that is to say, the rider will only know that it is somewhere between perhaps four and four and a half to one. If there is one section, however, which is more important than any of the rest, it is the carburetter, for there is no doubt that the mean effective pressure upon the piston, or in other words, the power of the engine is more dependent upon the heat value of the mixture supplied than upon any other factor.

Carburation.

The average carburetter is open to improvement, principally in the manner in which the petrol is sprayed, and also in the lengths of air inlet and mixture inlet pipes. There is not the slightest doubt in my mind that the best of spray carburetters do allow the liquid petrol to pass into the engine, with the result that at the moment of combustion the gas is divided into a number of regions of varying mixture. The result is that in many of these, incomplete combustion takes place with a consequent increase in fuel consumption and a decrease in engine efficiency, and increase of carbon deposit in cylinder head. The more uniform and homogeneous is the mixture supplied to the engine the better the result, and, therefore, no pains should be spared to increase the vaporising qualities of the carburetter.

In this respect more can be done with the inlet pipe than many people imagine. In the ordinary machine the inlet pipe is practically absent, as the carburetter is generally clamped direct on to the cylinder. One reason why a longer inlet pipe is not used is that the mixture would be cooled thereby, also it is desirable that the carburetter should be kept reasonably warm. So far as vaporisation is concerned, a tolerably long inlet pipe is a great advantage; in fact, the longer the better, always provided that it can be kept warm.

Improving the Inlet Pipe.

This presents very little difficulty, and it is quite safe to say that if an arrange-

Making the Best of It.—

ment be made as described and illustrated herewith, an improvement in efficiency will be obtained.

Fig. 1 shows the idea. First of all, the inlet pipe is enlarged by means of an

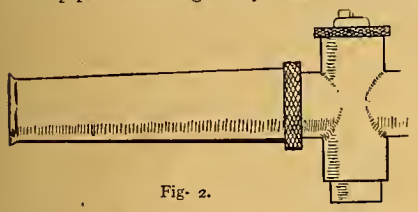


Fig. 2.

external liner as shown, and inside this a length of thick copper wire, wound into the form of a quick-pitch screw, is placed, the ends being passed through holes in the tube at each end and riveted over to prevent it coming loose. Round the outside of the inlet pipe is a wrapping of asbestos string, over which can be slipped a piece of thin brass Treblett tube. The length of the inlet pipe may be experimented with, but 6in. is generally about the best length. In the sketch *two* copper helices of decreasing pitch are shown, but three or four may be experimented with. The function of this device is two-fold, firstly, to assist in keeping the inlet pipe hot by conduction from the engine, and secondly, to increase the relative distance through which the mixture has to pass, and so increase the amount of heat which it can take up from the internal surface of the inlet pipe. It is true that the gas is given, to a certain extent, a whirling action, but this is, in itself, I think, a matter of no great importance. The asbestos string is, of course, simply to keep the heat in.

I have found this device of real value, and it will be recollected that an exactly similar arrangement, though without the asbestos lagging, is used on the inlet pipes of the Scott two-stroke engines, and on these it has clearly proved its worth.

The Long Inlet Pipe.

A fairly long air inlet pipe to the carburetter is desirable. I notice that when this idea is being discussed it is always regarded in an entirely wrong light. The idea is, according to most people, that the momentum of the air inside the tube helps to pump more gas into the cylinder than would otherwise get through. This, in my opinion, is an entirely fallacious explanation, because one can only gain from this momentum a little less than one loses in accelerating the volume of gas, and hence the device could only be of service if the inlet valve were caused to open much earlier than usual. The real value of the device comes in, not when the machine is running at a uniform speed, but when it is being accelerated.

Assuming that before the acceleration takes place the mixture is correct, then the petrol passing through the jet and the air passing round it, are flowing at definite speeds. Now, the inertia of the petrol is considerably greater than that of the air, and, accordingly, when the throttle is opened the air increases considerably in velocity almost immediately, whilst the petrol does so more slowly. This means that the mixture is weakened precisely when it is most required to be enriched. Now, by adding a long air intake tube, opening of the throttle has to accelerate the whole column of air, and, of course, the longer this is the greater is the inertia of it. If the correct length be found, then, when the throttle is opened, both the petrol jet and the air flow will accelerate to the increased speed in the same time, and the mixture will, therefore, remain of a constant quality. An even better effect can be obtained by so proportioning the length of the air intake tube that the inertia of the air becomes greater than that of the petrol, and in this case, when the throttle is opened for acceleration, the engine induces a mixture which is slightly richer than usual. By this means the utmost degree of acceleration can be obtained. The length of this intake pipe varies with the dimensions of the engine, its ordinary running, and the design of the carburetter, and it is, therefore, next to impossible to calculate the best possible dimensions. This can only be arrived at by experiment.

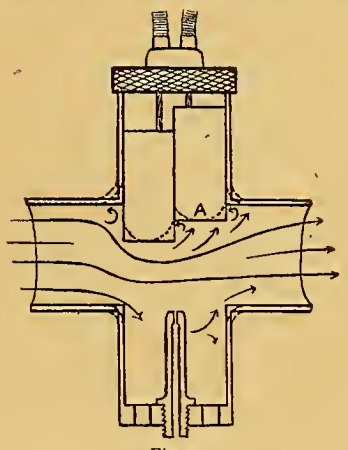


Fig. 3.

I believe that the best possible shape for this tube would be as shown in fig. 2. The tube is perfectly straight, but very slightly tapered towards its mouth where it is turned over a little, the area at the mouth being equal to the area of the air orifice.

Motor cycle carburetters are not, as a rule, distinguished by great perfection of design, and this is not surprising, considering the price at which they have to be turned out. They are, in fact, only really efficient when the throttle is wide open and the induced gas takes a straight-through course right across the jet. When the throttle is half opened the gas has to pass a sharp cornered constriction somewhat as shown in fig. 3, which gives rise to a great many eddy currents as indicated in the sketch. The formation of these leads to a decrease in volumetric efficiency of the engine, that is to say, on its induction stroke it does not get as much gas as it ought to.

Some improvement can be gained by rounding off the corners of the two slides as shown by dotted lines in the figure, and also by rounding off the edges at the junction of the vertical tube and the horizontal one. It must also be pointed out that when a solution of petrol vapour and air meets, in its flow, what is known as a "surface of discontinuity," such as is shown in fig. 3 at A, the velocity of the gas in this region at once drops very rapidly, with the result that the petrol has a tendency to come out of solution and deposit itself in liquid form on the wall of the carburetter, giving rise in doing so to a mixture which is not uniform. This is best stopped by removing the likelihood of such surface of discontinuity forming, in lieu of which the next best cure is to warm the carburetter so as to enhance the vaporisation of the spirit.

Variable Jets.

Since the engine is obviously most efficient when working at full throttle, in which case, of course, the compression is at its highest, and the carburetter behaves best, it is important to have a jet which is exactly the right size, and there is no doubt in the writer's mind that if this end is to be accomplished properly the only means of doing so is to have a jet which is mechanically variable without dismounting the rest of the carburetter. Different sized jets may, of course, be tried and the results with each noted, but the probability is that the best results would be given by a jet of intermediate size, which, of course, it is not always possible to obtain. In a good many carburetters, however, there is no difficulty, or, at all events, very little in fixing up a mechanically variable jet.

A good type of such a device is that shown in the sketch. Underneath the jet support is sweated a small brass collar, which is tapped with a fine thread. Needless to say the drilling is done from the top so as to ensure the lower hole being in register with the upper one, in the latter of which the jet is screwed as shown. A plug to fit the tapped hole is now made, and in this is sweated an ordinary bright brass pin with the head removed. A needle can also be used, but it is likely to get rusty. The length of the pin is made so that it is just clear of the actual jet orifice when the lever, which is attached to the plug, is in a normal position. On screwing up the latter the pin enters the jet, and, of course, slightly reduces it in area to any desired extent. For experimental purposes a fairly large jet is used, and the orifice reduced to that at which the

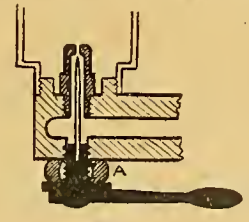


Fig. 4.

best results are obtained. The position of the lever can then be noted so that it can always be returned to the same place. A small section of stiff rubber tube, placed as shown at A in fig. 4, serves to prevent vibration from turning the lever round and also any leakage in petrol.

Needless to say the threads of the plugs should be as good a fit as can be made. A well-made electric binding-screw can easily be converted into a plug and into a collar, care being taken as before to line up the holes correctly.

(To be continued.)

Trade Announcements.

Kemp's Vulcanising Co., 19, Hardman Street, Manchester, have been appointed wholesale stockists for Gaulois and Hutchinson tyres.

Change of Address.

In consequence of largely increasing business, the Service Co., Ltd., have been compelled to remove their pedal cycle department to 302, High Holborn. Extensive alterations are being made at 292 and 293, High Holborn, to give greater accommodation for motor cycles.

Lightweights as Aids to Other Sports.

The 2 h.p. Humber lightweight introduced eighteen months ago is now, we understand, selling in large quantities. This popular model is admirably adapted for the use of those persons indulging in golf, tennis, cricket, etc., enabling them to reach and return from their venue with the greatest of ease and a minimum of trouble. The figure at which this machine is now retailing is a very low one indeed, considering its efficiency.

Prevention Better than Cure.

Prevention is better than cure, but often it is easier to cure than to prevent. For instance, it is not easy to prevent motor cycle tyres leaking through punctures. The Self-sealing Rubber Co.'s air tubes, however, render all ordinary small punctures made by thorns, pins, and nails absolutely harmless, the layer of rubber in compression instantaneously and permanently closing the puncture made in the tube.

Renovating Rusty Cylinders.

Mr. P. E. Massey, of Alderley Edge, has submitted us a sample of his Pem cylinder black which we have used for renovating the appearance of a somewhat rusted cylinder with complete satisfaction. The only possibility of bad results lies in careless cleaning of the radiators. If the cylinder be carefully purified of dirt and oil, and a little Pem be thinned down with petrol or turpentine and applied with a brush, the resulting effect is quite satisfactory, and the hue and surface procured are reminiscent of a clean iron casting.

SPARKLETS



Silencer Test.

Messrs. J. C. Lyell and Co., Ltd., 113, Great Portland Street, London, W., the makers of the Clair silencer, are naturally rather disappointed at the cancelling of the M.C.C. silencer trial. They had entered a 7-9 h.p. twin fitted with one of their silencers, and will be pleased to demonstrate its silence to any callers.



This piece of flattened metal tubing entered the cover of a motor cycle tyre and embedded itself between the rubber and canvas without puncturing the air tube, until it gradually wore its way through.

Lightweight Deliveries.

The Enfield Cycle Co., Ltd., Redditch, inform us that they have recently enlarged their motor department, and none of our readers who may be contemplating the purchase of a Royal Enfield lightweight need have any doubts as regards the question of delivery.

The Popularity of the Sidecar.

A. L. Middleton and Co., makers of the Middleton sidecars, advise us that, owing to the increase in their business, they have been compelled to take additional premises at 27, Stroud Green Road, Finsbury Park, N.

Hobarts in London.

Norris, Russell and Co. have removed from 45, Hatton Garden, E.C., to a larger building at 6, Great Eastern Street, E.C., where a speciality will be made of Handy Hobarts for which the firm are sole agents for London.

Lubricants for Racing.

One of the latest successes to be credited to Sternol is the dual win by S. T. Tessier in the flying kilometre and the flying mile—Class D, 750 c.c.—at Brooklands on the 20th ult. A great point about this oil is that with it the engine starts quickly from cold.

Three and Four Wheeled Cyclecars.

With respect to the discussion that is taking place in our columns on the relative advantages of three and four wheels for cyclecars, it is worthy of note that the G.W.K. four-wheeled cyclecar has been placed in every event in which it has taken part. Among its successes are Streatham and District and Surrey joint trial, silver medal highest award; Herts A.C. reliability trial, gold medal; and Oxford M.C.C. hill-climb, first and second on formula.

Catalogues Received.

The latest catalogue of H. Taylor and Co., 21a, Store Street, Tottenham Court Road, W., is one of the most comprehensive accessory catalogues we have seen this season. A speciality is made of motor cyclists' clothing.

The catalogue issued by Mr. Leoline Edwards, 81, St. Margaret's Road, Twickenham, contains descriptions and illustrations of the Quidos cork stuffed sidecar foot muffs and camping mattresses.

We are in receipt of the latest catalogue published by James Grose, 4, Old Jewry, Cheapside, E.C. This contains every known type of motor cycle accessory; also complete engines.

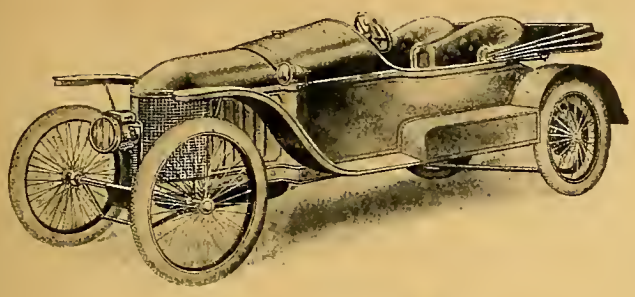
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Scene at the starting point.



B. Joffreys (3½ h.p. T.T. Triumph) winner of the Quirk Cup.



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REMARKS.—I have used your Two-jet Carburettor throughout 1911 with eminently satisfactory results, and intend fitting your Two-jet Carburettors on both my 1912 motor cycles. I also used it in the four following events, when I was awarded four medals, viz :—

June 3-5. THE MOTOR CYCLING CLUB'S Run from London to Edinburgh and back, 800 miles.....Gold Medal.

May 9. THE NORTH-WEST LONDON MOTOR CYCLE CLUB'S Run from London to Coventry and back, 215 miles Silver Medal.

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If further proof is needed we give the latest of hundreds of complimentary letters.

BRETTARGH HOUSE,
LANCASTER, *April 17th*, 1912.

Dear Sirs,—The carburettor arrived by post this morning, and I put it on at once, and have to-day had the most enjoyable run I have ever had on my 8-h.p. "Matchless." I could not believe a carburettor could make such a difference. It works most beautifully when running slowly and picks up in the most wonderful way. I put 4 jet in the pilot and have kept the 6 in the main jet, and could not wish for better results.

However, I will try various jets, and if I can make an improvement will be more than satisfied. I shall certainly recommend them to my various friends. Believe me, yours faithfully

W. HERBERT SATTERTHWAITE.

The original of this entirely unsolicited Testimonial, together with others, will be shown at the works.

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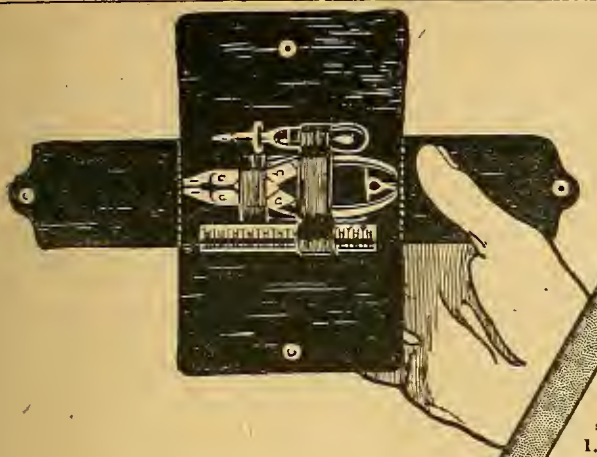
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All letters relating to advertisements should state distinctly under what heading and in what issue . announcement appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

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For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

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4546.	3½ h.p. 1911 **KERRY-ABINGDON**	£32	10
4628.	3½ h.p. 1910 **TRIUMPH**, Mabon variable gear	£38	0
4631.	3½ h.p. 1909 **J.A.P.**	£22	0
4602.	4½ h.p. 1909 4-cyl. **F.N.**	£20	0
4701.	2¾ h.p. 1909 Twin **N.S.U.**	£18	0
4727.	3½ h.p. 1911 **KERRY-ABINGDON**	30 Gns.	
4729.	2¼ h.p. 1910 **ROYAL ENFIELD**	£22	0
4735.	3½ h.p. 1910 **QUADRANT**	£25	0
4752.	2¼ h.p. **J.A.P.**	£7	10

9, SHOE LANE, FLEET STREET, LONDON, E.C.
Wires: Opificer, London. 'Phone: Holborn 5777.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. ooo, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

1912 Scott for immediate delivery; accept best offer over £65.—Archdale, Bishopton Lane, Stockton-on-Tees.

1911 Rudge, free engine, T.T. bars, machine and tyres excellent, lamp, and spares; £41, no offers.—Dixon, 58, Victoria Rd., Darlington

5-6h.p. Bat, extra heavy Kempshall 2½in. back, Dunlop front, spring frame, magneto, lamp, tools; £35.—Emerson, Evenwood, Bishop Auckland.

1912 Phelon and Moores, free engine Triumphs, Douglases, Bradburys, B.S.A.'s, Enfields, in stock.—Phone: 1X2. Stout's Garage, Egremont, Cumberland.

FOR Sale, 3½h.p. motor cycle, will take sidecar, spring forks, h.b.e., tyres as new, foot brake, no repair required; inspection invited. Thos. Doherty, 145, Stricklandgate, Kendal.

3½h.p. Chater-Lea-Fafnir, magneto, Cowey speedometer, new Dunlop back, low machine, done 4,500 miles, perfect condition; £27; sociable wanted.—Lang, St. George's Sq., Sunderland.

ARNO, the ideal machine.—3½h.p. T.T. model, £45; Tourist model, £45; 2¾h.p. medium, 39 guineas; 3½h.p. 2-speed and free engine, £55; sidecars to fit any machine in stock.—Myers, Neville's Cross, Durham.

TRIUMPHS, Humbers, B.S.A., Royal Enfield motor cycles, lightweights, 2 speeds, free engines; write, wire, or 'phone for immediate deliveries.—Turvey and Co., The Motor House, Sunderland. Tel.: No. 626.

SECTION II.

York and Lancashire.

PICKLES for Lincoln Elks.—3½h.p. £34, 2 speeds £42.

PICKLES for sidecars from 5 guineas, in stock; B.S.A., Chater-Lea, Royal Avena, J.A.P.; Michelins 17/6; machines sold on commission, 5%; no sale, no charge.—Pickles, Church St. Garage, Bradford.

THE Great Douglas Agent, Douglas Gourlay, Fallowfield, Manchester.

A.S.L., 1911 5h.p. Twin, lamp, horn, spares; £40.—Curson, 76, Horsedge St., Oldham.

1912 Rudge, free engine, little used, grand machine; £45.—Coupe, 7, Pilot St., Accrington.

1911 Bradbury, 2-speed, 40 guineas, or near offer.—May, Isalee, Copnice Drive, Harrogate.

1912 F.N. Tricycle, not ridden 5 miles, perfect; £50, or nearest offer.—Embro Cycle and Motor Co., Hull.

REX, 3½h.p., 1911, B. and B. carburetter, new, under 60 miles; £33.—A. Mantle, 62, York Place, Harrogate.

1911½ 3½h.p. Speed King Rex, comfortable position, condition almost as new; £30.—93, Wallgate, Wigan.

In answering these advertisements it is desirable to mention "The Motor Cycle."

The Halifax Motor Exchange

Largest Rex Dealers, 16, WESTGATE, HALIFAX.

'Phone, 766 Telegrams, "Perfection."

£3 to £5 DOWN and 5/- weekly secures prompt despatch of

2½ h.p. **MINERVA,** spring frame, h.b. control.... £9 10
Twin **REX,** spring forks £16 10
3 h.p. **QUADRANT** £10 10
2¾ h.p. **KERRY** £10 10
3 h.p. **HUMBER,** chain drive £8 10
3½ h.p. **WOLF,** spray, smart, h.b. control £12 10
3½ h.p. **BRADBURY** £12 10
2¾ h.p. **DE DION** £10 10
2½ h.p. **J.A.P.,** spring forks..... £8 10
3 h.p. **M.M.C.,** torpedo tank..... £10 10
3½ h.p. **REX,** h.b. control £8 10

£7 deposit and 10/- weekly secures—

2¾ h.p. Mag. **MINERVA,** chain drive £16 10
3½ h.p. Magneto **SINGER** £15 10
Four-cylinder **F.N.,** magneto £19 19
3½ h.p. Magneto **REX** £19 19
Twin **MOTO-REVE** £19 19
2½ h.p. **REX** Magneto Lightweight £16 10

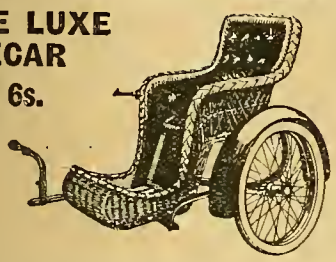
1911 REX BARGAINS. Makers' price. Ours.

3½ h.p. Rex Tourist ..... 43 guineas 34 guineas
3½ h.p. Free-engine ..... 48 guineas 39 guineas
3½ h.p. 2-speed de luxe ..... 57 guineas 46 guineas
5 h.p. 2-speed de luxe ..... 60 guineas 51 guineas

All new and guaranteed. Exchanges liberally dealt with.

1912 DE LUXE SIDECAR

£6 6s.



"Exchange," with Continental motor cycle tyre £5 5 0
"De Luxe" with best tyre, apron, foot mat .. £6 6 0
Ditto, with reversible child's seat £7 0 0
Ditto, with best coach-built body..... £7 12 6

Improved Quick Detachable Joints, cranked extra strong back axle and spindle, tip up body, and caged ball races to all models. Prompt delivery to suit Rexes, Triumphs N.S.U.'s, Indians, and any other make.

Discount to trade Exchanges entertained.

GUARANTEED IN RUNNING ORDER.

1912 3½ h.p. Standard **BRADBURY** NEW £43 0
1912 Twin **REX** Sidette. In stock, NEW £75 0
1911 2¾ h.p. **MOTO-REVE,** soiled only..... £29 10
1912 Two speed **REX** Junior £45 0
1911 3½ h.p. Tourist **REX,** done 100 miles £32 10
SCOTT 2-speed, Aug., 1910 ..... £37 10
1911 3½ h.p. 2-speed **HUMBER** £38 10
1911 3½ h.p. **REX,** clutch model, as new £34 10
1911 5 h.p. Two-speed **REX DE LUXE** £47 10
1910 7 h.p. Twin **REX,** HOT STUFF £37 10
1910 5 h.p. Twin **REX,** NEW £34 10
1910 5 h.p. **REX,** very fast, special machine £29 10
1910 **ROYAL ENFIELD,** smart £22 10
5½ h.p. Two-speed Twin **ROC,** magneto, Druids.. £29 10
Brand New 3½ h.p. **REX** £29 10
3½ h.p. Two-speed **N.S.U.,** smart £21 0
1908 3½ h.p. Magneto **REX,** spring forks £22 10
3½ h.p. **REX,** h.b. control £15 10
Four-cylinder **F.N.,** magneto, spring forks £18 18
3½ h.p. **WOLF.** Stevens engine, h.b. control £12 10
3 h.p. **QUADRANT,** low frame £10 10
2¾ h.p. **KERRY** £10 10

Easy Payments at Special Rates.

SUNDRIES.

F.R.S. Lamp 16/6
Mabon Free-engine Clutch, fits Triumph 35/-
Mabon Free-engine Clutch, fits Rex 35/-
Rexette Chassis, with body and tyres £7 10
Monocar Frame, 4-wheeler, with axle and tyres .. £6 10
Backrest, to fit XL-ALL saddle 7/3
Triumph Pattern Horns, New 4/6
New Cane Sidecar Body..... 17/6
Brook's B100 Saddle 9/6
New Large Lycett's MOTOR SADDLE..... 9/6
Wicker Sidecar Body 10/6
Cane Sidecar Body, New 17/6
New Sidecar Aprons with studs 7/6
Plated Rex Pattern Handle-bars 6/6
New 20-amp. Fuller Accumulator 11/-
New Harrison's Backrest, usual price 12/6, ours 9/6
Myers' Motor Cycle Stand..... 3/-

MOTOR BICYCLES FOR SALE.

NORTHERN Depot, Ltd., "Everything Motorish," Leece St., Liverpool. T.A.: Depend. Tel.: Royal 5029.— Machines in stock. 8h.p. Rex-Jap, 2-speed, also 4h.p. ditto, clutch; Kerry-Ahingdons, 4h.p. clutch and Cob models; 2h.p. Humber lightweight; clutch Rudge and Millford, done 700 miles. Sidecars in stock—Millford, Herald. Northern special cane torpedo, door, and storm apron complete, £13; Northern special, 5 gns., with cranked back axle. Book for delivery in 1 week 2-speed Clyno and Cancelet sidecars; A.C. Sociable for May 7th; first deposit secures either: Northern warbling whistle, h.b. Bowden control, suit single or multi-cylinder engines, 21/-, post free; Garner whistles, brass or plated, 12/6, post free. The best motor cycle suit made, absolutely guaranteed, and contains no rubber, post free 35/- and 47/6; send chest measure. Avon tyres, all patterns post free per return. Lyso belts, all sections and lengths, post free; X'all saddles in stock; Cowey speed indicator, with special brackets for A.C. Sociable, 90/-, post free; lined heavy gloves from 5/6, with gauntlets; chamois gloves from 1/3; dust jackets and overalls; special display of sidecar and carrier luggage cases; Northern sidecar dust screens, 7/6; everything for motor cyclists in stock.

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

MATCHLESS-J.A.P., 4h.p., 2-speed, with accessories; £36.—Fithon, Parrs Bank, Sandbach.

ZENITH, 3½h.p., 1912, run 500 miles, £51; new sidecar, £5/10.—Spaven, South Normanton.

TRIUMPH, 1911, standard, new June, in splendid condition; £35, no offers.—Murray, Rugeley.

ENFIELD, 1911, shop soiled, 2¾h.p., 2-speed, free engine; 45 guineas.—Oakley, Station Rd., Hednesford.

1911 3½h.p. N.S.U., 2-speed gear; accept £29, cost £54/10; guaranteed.—Mills, Salter Gate, Chesterfield.

TWO Second-hand Triumphs, standard and free engine, first-class condition, also two sidecars.—J. Cooke, Sandbach.

MOTOSACOCHE, spring forks, h.b.c., tyres perfect; £12/10.—Davies, Alma Cottage, Micsgwyn Rd., Wrexham.

1907 Triumph, recently overhauled by makers, new parts fitted; best offer.—Simmons, Clungunford, Shropshire.

5h.p. Indian, 1911, free engine, fast machine, per feet order, complete; £40.—Wade, Shaw Heath, Knutsford.

1911½ 2-speed Humber, just overhauled and guaranteed fully; lowest £30, worth £40.—Millard, Chesterfield.

PEUGEOT, 2½h.p., h.b.c., torpedo tank, Clincher tyres, low position, good order; £12.—Davies, 11, Wood St., Crewe.

3½h.p. Automoto, 1911, B. and B., h.b.c., good tyres; £7/10, bargain.—No. 375, *The Motor Cycle* Offices, Coventry.

3½h.p. N.S.U., 1911, £23; 3½h.p. Rex, £20, or exchange for boots, drapery, or clothing.—Warren, Eckington, Derbyshire.

NEW Rover, used one day only, complete, new outfit, new spare belt, tube, valves.—Enquire, 75, Westminster St., Crewe, Cheshire.

LADY'S 2h.p. Moto-Reve, free engine clutch, little used, nearly new, complete with all accessories; £36.—Rowland, Belvedere, Bangor.

3½h.p. Triumph, late 1907, B. and B., h.b.c., Palmer and Kempshall, splendid condition; £23.—Holden, Peasehill Farm, Ripley, Derby.

BRADBURY, standard, 42 guineas; Humber, standard, 2-speed, 44 guineas; both brand new; first cheque.—Watson, Motors, Ripley, Derby.

3½h.p. Triumph, 11/1907, in perfect running order; £20.—Tagg, Ashfields, Newcastle, Staffs.

DOUGLAS, 2¾h.p., standard, end 1910, P. and H. lamp, horn, new tyres, spares, splendid condition; £29; appointment.—Shone, 70, Watergate St., Chester.

3½h.p. Kerry-Ahingdon Motor Cycle, free engine, in perfect condition, late 1911, and not done 1,000 miles; £35.—W. Beard, Cadley Hill, Burton-on-Trent.

IMMEDIATE Delivery 1912 Models, actually in stock, Scott, Triumph, Clyno, Rudge-Whitworth, and Douglas, etc.; also early delivery of any other make.—Moss, Wem.

SELL or Exchange for Lightweight, 5h.p. Vindec, just spent £9 on overhauling engine and new tyres, Bosch, B. and B., tools.—Pierce, Tanyclawdd, Johnstown, Ruabon.

1911 F.E. Triumph, new in October, used 1,000 miles, perfect condition, complete with lamp, horn, etc.; £46; owner going abroad; must sell; new 3½h.p. Zenith Gradua, 53 guineas.—H. Marston, Rock Ferry.

REY

5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.
Telegrams: "Rey, Hampstead."
Telephone: 2678, P.O., Hampstead.

EXTENDED PAYMENTS

Taken on any Machine or Runabout.

NO EXTRA CHARGE ON MOST MAKES.

Following 1912 Machines for

IMMEDIATE DELIVERY.

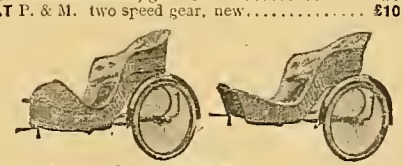
TRIUMPH Standard Model £48 15
TRIUMPH 1912 F.E. Model £55 0
RUDGE Standard Model £48 15
RUDGE T.T. Model £48 15
RUDGE F.E. Model £55 0
CLYNO 5-6 h.p. 1912 2-speed Model ..... 65 Gns
P. and M. 3½ h.p. 1912 2-speed Model £65 0
B.S.A. 3½ h.p. 1912 2-speed Model £60 0
B.S.A. 3½ h.p. 1912 Standard Model £50 0
BRADBURY 3½ h.p. 1912 2-speed Model £55 0
ZENITH. 6 h.p. Model ..... 67 Gns
ZENITH 3½ h.p. Model..... 53 Gns
DOUGLAS L Lady's Model £52 0
DOUGLAS J T.T. Model £47 0
DOUGLAS G Standard Model £41 0
BRADBURY Standard Model £48 0
BRADBURY F.E. Model £54 10
BRADBURY T.T. Model..... £48 0
SINGER 3½ h.p. 3-speed Model £58 10
LINCOLN ELK 3½ h.p. Standard Model £34 5
HUMBER 3½ h.p. 2-speed Model £52 10
BAT 6 h.p. Standard Model £58 0
SINGER 2-speed 4 h.p. Sidecar Model £65 0
ZENITH 8 h.p. Model ..... 69 Gns
DOUGLAS Model K £50 0
BRADBURY 2-speed Model £55 0
B.S.A. F.E. Model £56 10
G. and N. Runabout in four weeks.

Any other makes on application.

TRADE SUPPLIED WITH VARIOUS MAKES. LIBERAL DISCOUNTS ALLOWED.

Machines at Bargain Prices to Clear.

2011. **F.N.** 1911 4-cylinder 6 h.p., splendid order £35 0
2049. **BAT** 5-6 h.p. Twin T.T., 1911 engine £35 0
2047. **F.N.** 2¾ h.p., 1911, 2-speed gear..... £26 0
R.D. **TRIUMPH** 3½ h.p. 1911 T.T. Roadster .. £35 0
1968. **REX** 1910½ 3½ h.p., good order £26 0
1955. **F.N.** 4-cylinder, 1911, good order £35 0
1906. **F.N.** 4-cylinder 1911 Model and Sidecar .. £38 0
1966. **F.N.** 2¾ h.p. Magneto, good order, low .. £15 0
1967. **RUDGE** F.E., 1911, splendid order £39 0
1859. **DOUGLAS,** 1910, splendid condition £24 0
1802. **BRADBURY,** 1911, nice machine £29 0
1785. **BRADBURY** T.T., made 1911 ..... £30 0
1640. **ZENITH** 1911 3½ h.p. Model £41 0
1855. **BAT** 1911 8 h.p. Model £36 0
1823. **BAT** 1910 8 h.p. 2-speed Model £42 0
1858. **F.N.** 2½ h.p. 2-speed Model £26 0
1893. **REX** Twin 6h.p., good order £12 0
All Accessories included on S.H. at the price advertised.
Second-hand Sidecar, good order £4 10
BAT P. & M. two speed gear, new..... £10 0



THE £4 - 10 REY Sidecar £3 - 10

With Hutchinson or Michelin 26×2¼ tyre and tube, 30/- extra.

The famous "REY" EXHAUST WHISTLE now reduced to 12/6 each. Triumph standard type.
The "REY" LEATHER BELTING outlasts two of any other makes. Price 2/- per foot.

—— SPECIAL DISCOUNTS TO TRADE. ——

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY

REY

5, HEATH STREET, HAMPSTEAD.

Caught On ! ! !

— OUR —

REED CANE BODIES

have undoubtedly hit the mark.

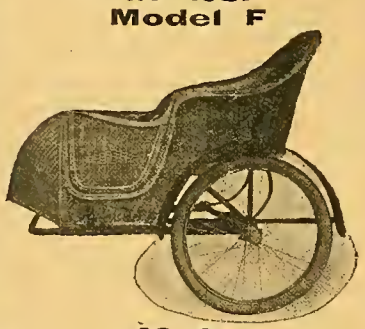
Undoubtedly this class of cane is far superior and more classy than ordinary cane or wicker work, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

Model E



£7 10s.

Model F



£8 8s.

OUR POPULAR MODELS ARE GOING STRONG.



Model de Luxe.—£6 5s.



Model C.—£7.



Model E.—£7 5s.



Model D.—£8.

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID.

MOTOR CYCLE FRAMES

We have a quantity of frames by well-known maker,
Price 32/6 each.
Rigid forks 7/6 extra. Druid forks, 45/- extra.
Enamelled and plated in first-class style.

MISCELLANEOUS BARGAINS.

4½ h.p. Aster Engine, water-cooled	£4 10
New 1912 Brooks B130 Saddle	14 -
New 1912 Brooks B104, padded	16/-
Nearly new B20r, padded top	14 -
New Screw-cutting Lathe, 4in. centres	£6 10
4½ h.p. Water-cooled Engine, vertical	£5 10
2 h.p. Stationary Engine, water-cooled	£5 0
Leamington Passenger Chair, new	£1 0
Albion Clutch, fits Triumph	65/-
Brooks B100 Saddle	9/6
Cocoa Fibre Sidecar Footmats	3/-

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane,

HALIFAX (Two minutes from G.P.O.)

Telephone 919.

MOTOR BICYCLES FOR SALE.

TRIUMPH, 1910½, excellent condition, complete with accessories, £34/10, or best offer; also twin Moto-Reve, magneto, £15.—Boulton, Waterloo Plating Works Newcastle, Staffordshire.

TRIUMPH, 1909, just been thoroughly overhauled, re-enamelled, and re-plated by Triumph Co., perfect condition; £32, or near offer.—Frank Dodd, Chelmondeley, Malpas, Cheshire.

TRIUMPH, new cylinder, 1911 Bosch, B. and B., h.b.c., touch 50; money urgently wanted; accept £16/10, cost £8/14 thorough overhaul by Triumph firm 1911.—Palmer, Staveley Town.

BRADBURY, 2-speed, free engine, July, 1911, and Bradbury model de luxe sidecar, excellent condition, many spares; £48; trial willingly.—H. Berth Jones, "Redcot," Rhos-on-Sea, Colwyn Bay.

LIGHTWEIGHT Moto-Reve, 1,000 miles, tyres as new, spares include belt, butted tube, exhaust and inlet valves complete; expert examination; £20.—Hibberd, Sunnyside, Newhall, Burton-on-Trent.

TRIUMPH, 1910, in absolutely perfect condition, little used, almost new, Palmer cord on back, original Clincher on front, usual spares, and spare Dunlop belt, horn, etc.; expert examination; £33/10.—6, Bloxwich Rd., Walsall.

TRIUMPH, Zenith, Singer, Rudge, Enfield, 1912 models, actually in stock. Following second-hands: Triumph T.T., 1911, £38. Triumph free engine, 1910, £39; Triumph standard, 1910, £32; Rudge, 1912, £38; A.J.S., 1911, £21; Bradbury free engine and sidecar, £35.—Oswald Parker, Melbourne, Derby.

THE North Wales Motor Exchange Rhosddu, Wrexham. Tel.: 283.—Careful and immediate attention given to all enquiries. Exchanges a speciality. 1912 F.E. Rudge, Sensprav, £55; 1912 3½h.p. N.S.U. de luxe, £48; 1912 A.J.S., lightweight, model A, purchased off the stand at Olympia, only done 200 miles, £35; 1910 N.S.U. twin lightweight, a beauty, done 500, £27/10; 1908 Triumph, fine mount, £26; 1907 Triumph, just overhauled, £22; 1909 3½h.p. ball bearing Rex, beautiful condition, £25; 1909 5h.p. Rex, 2 speeds, handle starting, fine goer, £30; 1909 3½h.p. Matchless, spring forks, Bosch, bargain, £16; 4½h.p. twin Minerva, modernised, new magneto, h.b.c., just been overhauled, beautiful condition throughout, only wants seeing, £27/10. To beginners, we have some splendid machines, cheap, send for lists.

SIDECARS.—We hold a large stock of these, and can give immediate delivery, excellent value, £5/5; accessories, etc.; let us know what you require.—Above.

SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

NEW 7h.p. Indian, 2-speed model; delivery from stock.—Main, 36, Perade, Leamington.

3½h.p. Rex, 1908, Bosch magneto, complete with lamp, horn, and tools; £15.—Main, 36, Parade, Leamington.

3½h.p. Rex, 1909, T.T., complete with lamp, horn, and tools; £20.—Main, 36, Parade, Leamington.

5h.p. Rex, 1909, Roc 2-speed, lamp, horn, etc.; £23.—Main, 36, Parade, Leamington.

ZENITHS, 3½ and 6h.p., in stock for immediate delivery.—Taylor, cycle agent, Kettering.

TRIUMPH, 3½h.p., new August, 1911, spares; accept low price £36.—23a, Coundon Rd., Coventry.

1911½ F.E. Triumph, ridden 2,200 miles, good condition; £45.—Kingston, auctioneer, Spalding.

DOUGLAS, new last September, splendid condition, all spares; £32/10.—Johnson, Accountant, Louth.

1912 Bradbury, 3½h.p., 2 speeds, practically new; offers.—Evans, 62, Northumberland Rd., Coventry.

TRIUMPH, 1909½, just overhauled, faultless, spare cover, belt, usual accessories, lamp; £28.—Eaden, Allesley, Coventry.

1912 Triumphs, Bradburys, Premiers, Humbers, Rudge, in stock.—Clifford's Motories, Eastwood, Notts.

MOTOSACOCHE, 2¼h.p., F.E., 1912 model; delivered Jan. 20th; ridden 500 miles; £32.—Horn, Bourne.

TRIUMPH, 1908, good tyres, tubes, lamp, horn, generator, tools; £24. — Johnson, 30, Long St., Atherstone.

1912 Bradbury, Rudge, B.S.A., Alldays, New Hudson, 2¼h.p. and 3½h.p. 3-speeds in stock.—Blackburn, Spalding.

3½h.p. Brown, magneto, fast and powerful, very good order; £16, or nearest.—5, St. George's Place, Northampton.

2½h.p. Minerva, h.b.c., good climber, low, splendid condition; nearest offer £9/10.—143, Cromwell Rd., Peterborough.

LADY'S and Gent's Clement-Garrards, perfect order; photos; £14 the two.—Stimpson, Broad Walk, Stratford-on-Avon.

PREMIER, 2¼h.p., Armstrong 3 speeds, free engine, only ridden few miles; £41.—Swan, Fieldgate Lawn, Kenilworth.

J.A.P., 2¼h.p., 1912, B. and B., Universal jet, good running order, tyres good; £14. — Oldham, 16, Albert St., Rugby.

MORGAN RUNABOUTS.

MAY DELIVERY.

We have two of these delightful vehicles for May delivery. What offers?

NEW 1912 MACHINES actually in stock.

3½ h.p. 3-speed NEW HUDSON	57 Gns
2¾ h.p. 3-speed NEW HUDSON	47 Gns
3½ h.p. RUDGE, fixed gear	£48 0
3½ h.p. HUMBER, 2-speed model	£52 10
1912 3½ h.p. BRADBURY, single-speed	£46 0
1912 3½ h.p. BRADBURY, 2 speeds	£55 0

SINGLE-CYLINDER REXES.

1910 3½h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p 1908 Featherweight Rex, Bosch mag.	£17 0

TWIN-CYLINDER REXES.

1906 5-6 h.p. Twin Rex	£16 10
5-6 h.p, Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, 2 speeds, M.O.V.	£48 0
5-6 h.p. de Luxe, 1908, 2-speed model	£28 0
5-6 h.p. de Luxe, 1908, 2 speeds, special	£29 10

OTHER MAKES.

3½ h.p. 1911 PREMIER (new) Millennium 2 speeds. Offers.	
3½ h.p. 1911 PREMIER (new), Armstrong 3 speeds. Offers.	
1910 P. and M., 2 speeds, fine goer	£32 0
1909 MOTO-REVE, twin engine, magneto, Druids	£20 0
1910 8 h.p. BAT, M.O.V., 2 speeds	£45 0
1¾ h.p. WOLF, magneto, spring forks	£15 0
1911 Lady's HOBART, Armstrong 3-speed	£36 0
4½ h.p. N.S.U., Bosch magneto, h.b. control	£21 0
3½ h.p Twin PREMIER, fine machine	£25 0
3 h.p. TRIUMPH, M.O.V., h.b. control	£17 0
1911 2¾ h.p. MOTOSACOCHE, magneto	£27 0
3½ h.p. L.M.C., 1910 model	£25 0
3½ h.p. MINERVA, Bosch magneto, Amac.	£22 0

SIDECAR COMBINATIONS.

8 h.p. BAT, 2 speeds, Millford sidecar	£50 0
5-6 h.p. 2-speed 1908 REX and sidecar	£33 0
7-9 h.p. 2-speed REX and sidecar	£53 0

All fitted with magneto and spring forks.

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3 h.p. MINERVA, vertical, M.O.V.	£12 0
3½ h.p. EXCELSIOR, Amac, h.b. control	£10 0
3 h.p. REX, vertical engine	£9 0
3½ h.p. BROWN Bicar, M.O.V., 26in. wheels	£12 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

3 h.p. 1908 REX, Bosch magneto	£17 0
5-6 h.p. Twin REX, spring forks, h.b. control	£16 10
4½ h.p. Twin N.S.U., Bosch magneto	£21 0
Twin-cylinder MOTO-REVE, magneto, Druids	£20 0
3½ h.p. MINERVA, Bosch magneto, M.O.V.	£22 0
1¾ h.p. WOLF, A.J.S. engine, magneto	£15 0

CARS AND TRICARS.

4½ h.p. HUMBER Tricar, 2 speeds, wheel steering	£19 0
5 h.p. HUMBER Car, 2-seater, good goer	£22 0
5 h.p. REXETTE, Oppermann 3 speeds	£18 0
Duocar, Bosch magneto	£45 0

MISCELLANEOUS BARGAINS.

1912 B. and B. Carburetters, variable jets	28/6
1912 B. and B. Carburetters, single jet	27/-
1912 Sensprav Carburetters	28/6
Camel 1in. Rubber Belting per foot	1/3
Frame for vertical engine	7/6
Fulford Castor Wheel Sidecar	£5 0
Fulford Rigid Sidecar, 26in. wheel	£4 10
Montgomery Sidecar, 26in. wheel	£2 10
N.S.U. Sidecar, coach-built, 26in. wheel	£4 10
Rex Pattern Belt Rim Brake (new)	6/6
Lycett's Carrier Toolbags (new)	7/6
Sidecar Lamps, show red light behind	7/6
Trailer, 26in. wheels	25/-
New Toolbags, 9 × 6 × 3½in.	4/6
Sidecar Aprons, green or red, with studs	7/6
New Lycett's Tubular Carriers	4/11
Longuemare Carburetters	5/-

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THE MOTOR CYCLE

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Modern Hill-climbs.

REFERENCE to our correspondence columns will show that the Manufacturers' Union at their meeting last week adopted an important resolution respecting competitions which include hill-climbs. The opinion of the members of the Union is that there are too many of these events which they are practically compelled to support with trade entries, and that instances have occurred where their trade riders have risked life and limb in negotiating dangerous bends on unsuitable hills.

It has been resolved that in future the members of the Union will not support these competitions where the positions are decided on time, and that no prizes will be allotted to the organisers unless they can prove to the satisfaction of the Competitions Committee that proper precautions have been taken to safeguard the riders from accident, either by the selection of a suitable hill without dangerous bends or the adoption of a form of contest which does not necessitate undue risks being taken for the sake of a win.

The resolution not to support hill-climbs which are decided on time might have just as well included similar events where a formula is used to decide the positions, because time enters into the calculation of all formulæ, and a competitor who wants to win on formula has to take just the same risk as one who wishes to win on time.

There is no denial to the fact that great risks attend fast speed up some of the hills selected for hill-climbs, and it is a great wonder that more accidents have not occurred recently; this can only be explained by the good luck and skill of the majority of expert riders.

No sport, however, is without danger, nor would it have any attraction for many if the element of risk were altogether absent. It is inadvisable, however, to court injury by the selection of tortuous hills, but the difficulty of organisers is to find hills steep enough to slow the modern motor bicycle without one or more corners which are either so sharp that the riders have to slow down to such an extent that their engines cannot pick up again or the corner is of a tempting radius which entices them to ride too fast with the hope of getting round, and then accidents occur.

Riders of variably-geared machines have not to take the same risk as those on fixed geared machines, because if the former slow down at a bad corner they have no difficulty in picking up again by using one of the lower ratios, but they are unfairly handicapped because the rider of a fixed gear standard machine seldom uses a standard gear ratio in a hill-climb, but one that is best suited to the particular hill he has got to climb. A solution of the difficulty might therefore be found in fixing a gear ratio for each fixed gear class and making that ratio sufficiently high to prevent dangerous speeds being attained, yet bringing out the capabilities of the machine as a hill-climber on a standard gear and the skill of the rider to a more marked degree.

To our mind the question resolves itself into one query. Are hill-climbs held to prove the best rider or the best machine? The maker sends his men to these events to advertise his machine, the clubman competes to show his skill in driving. It therefore rests with organisers to devise means whereby the best rider and machine may be determined without the risk being more than a fair sporting one.



ALTHOUGH a contemporary takes to itself all of the credit of last week's mobilisation, and refers to the hon. secretary of the Legion of Cyclists in quite a *de haute en bas* manner, the majority of motor cyclists, who are a justice-loving lot, will feel inclined to give credit where credit is due, and incidentally in the same quarter to which the military authorities are also throwing such small crumbs of thanks as can be snatched from the table at Whitehall, viz., to the Legion of Cyclists.

Without a shadow of doubt the Legion is greatly beholden to the papers devoted to the sport—*The Motor Cycle* amongst others—for the publicity given to the event, but after all that is only what could be expected, and what the Legion had a moral and justifiable right to expect. However, I think the matter can wisely be left at that.

The Legion is a self-supporting body which is at present in hands well able to support and look after its prestige. Moreover, it is well deserving of the support of all motor cyclists, and doubtless that support will be given ungrudgingly.

All those who took part in the recent mobilisation received certain papers from the hon. organising secretary setting forth the objects and organisation of the Legion, and since these are of universal interest I have ventured to suggest they might advantageously be reproduced in these pages. I am informed that the press of work on the hon. secretary is enormous, and correspondents are requested to possess their souls in patience. There are some districts in which gentlemen who have an hour or so of spare time in the week would be very welcome if they would undertake the work of organising officer and of recruiting twenty-five motor cyclists in the vicinity.

As to the effect the mobilisation has had upon the authorities it is yet early days in which to venture a prophecy, but the omens are most propitious.

Objects of the Legion of Motor Cyclists.

(1) To organise into corps of twenty-five men (or more) those motor cyclists who, though now unable to join the Territorial Army, would be willing in the event of a foreign invasion to

(Group 1) Enlist in a Territorial Cyclist Battalion,

or (Group 2) Fight as irregular cyclist "Francs Tireurs."

or (Group 3) Serve as mobile town-guard in their own town or village.

(2) To train these men in elementary military knowledge so as to fit them for these duties.

(3) To obtain recognition for the Legion as an authorised force of the Crown.

(4) To assist corps to form voluntary summer encampments.

(5) To stimulate patriotism and recruiting for the Territorial Force both in peace and war.

There is no subscription, but every member who can afford it is expected to become an annual subscriber to the official magazine of the Legion.

Every member must be in possession of the Legion badge, which can be obtained either from his own organising officer or from the hon. secretary (price 1s. 4d. post free). When a corps attains twenty-five members a corps badge will be struck (price 9d.).

Every corps will be placed in touch with the nearest military authority so that members can attend lectures, field days, and instruction in scouting, demolitions, etc. These are not compulsory.

Members of the Territorial Army can become members of the Legion, and are very welcome.

How to Join.

Fill in the application form below and send it to the nearest organising officer, with a stamped and addressed postcard.

Those willing to act as organising officers should apply direct, enclosing a penny stamp, to the hon. secretary of the Legion, Captain A. H. Trapmann, 117, Piccadilly, London, W.

The under-mentioned, having signified their willingness to receive the enrolment of motor cyclists, are appointed organising officers:

LONDON LEGION.—S.E. District: R. D. Brown, 9, Brockley Road, London, S.E. N. District: F. W. King, 148, Culford Road, Southgate Road, London, N. Suburban Districts: G. P. Barham, 347, Kingston Road, Wimbledon.

ESSEX LEGION.—W. T. Austin, 39, Huddart Street, St. Paul's Road, Bow, London, E.

SUFFOLK LEGION.—F. W. Sear, Broughton House, Royston, Herts, and F. Milligan, Laxfield Hall, Framlingham.

NORFOLK LEGION.—P. Crowther, The School, Fulmodestone, Guist, S.O.

NORTHERN LEGION.—J. Wilson, 101, Sydney Grove, Newcastle-on-Tyne, and L. F. Jones, Wold Newton Vicarage, Hunmanby, R.S.O., Yorks.

SCOTTISH LEGION.—H. A. Ritchie, 38, Falfield Street, Glasgow.

PALATINE LEGION.—G. K. Goulding, Homeleigh, Cromer Road, Aigburth, Liverpool, and M. Oberdorfer, 30, Atwood Road, Didsbury, Manchester.

MIDLAND AND WESTERN LEGION.—A. H. Hill, 31, Colmore Row, Birmingham; J. Fawkner-Tideswell, York House, Old Allesley Road, Coventry; and J. T. Wilkinson, 4, Swanscombe Road, Aylestone Park, Leicester.

APPLICATION FORM.

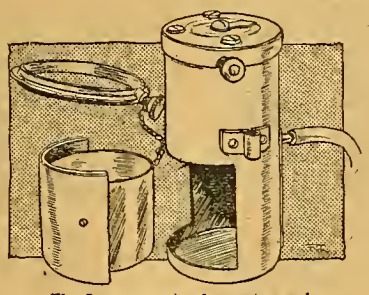
Full Name .....
Full Address .....
In which Group do you wish to serve—1, 2, or 3? .....
Age .....
H.P. of Machine .....
Previous Military Service, if any (Rank, Corps, duration) .....
Will you act as Local Organising Officer? .....

Oath: I, the undersigned, do sincerely promise and swear that I will bear true allegiance to His Majesty King George V., his heirs and successors, and that, in the event of a general mobilisation, I will take up arms and serve him, his heirs and successors, to defend the integrity of Great Britain against foreign invasion.

Date ..... 191... *Signature* .....

A NEW GENERATOR.

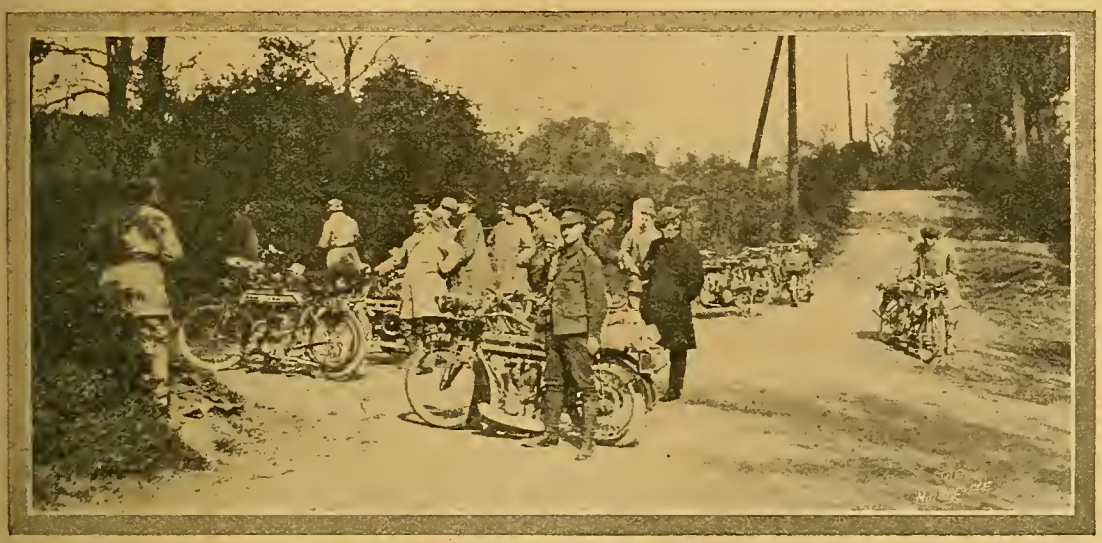
An acetylene generator for motor cycles, which is somewhat of a departure from the usual drip feed type, is the Lux, made by Mr. D. S. Campbell, Critchfield, Bosham, Sussex. The carbide container consists of a tray or drawer, which the illustration renders self-explanatory. That portion of it which comes in contact with the main body of the generator is lined with sheet rubber to render it gas-tight. It is held in position by a ring which encircles it, and is locked by a screw. The most interesting part of the generator is the water drip, which is controlled by a worm operated by a milled nut placed horizontally. The supply of gas is controlled solely by this drip. Usnally the hand on the dial found on the top of the apparatus need only be turned to the first point by means of the milled nut, if a 12½ litre burner be used.



The Lux generator for motor cycle acetylene lamps.

Owing to the delicate control of the water in this generator no more gas need be generated than is consumed, and the pressure may be varied at will. It is advisable to use large uncoated carbide, and the residual ash is, we are assured, always in the form of dust, and is not caked.

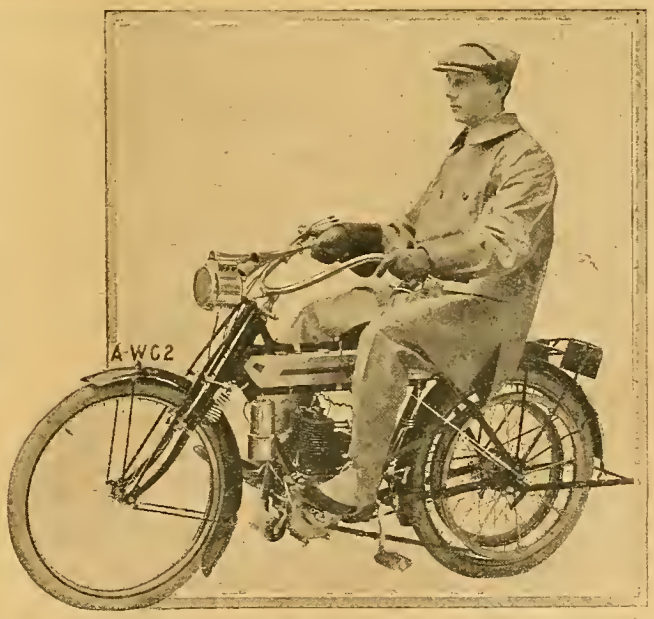
It is claimed that almost immediately after the water is turned off the gas ceases to be generated, consequently the generator may be used several times without refilling. No spring is used to keep the carbide in position, there is no central chimney as in most containers, and no filter is used. The generator is simple as to its construction and easy to clean, and a trial of it under road conditions would be interesting. A gas purifier is supplied separately.



MOBILISATION DAY AT DAVENTRY. Scene at the foot of Newnham Hill on which climbing and restarting tests were held during the day.

AN ALL-ROUND SPORTSMAN.

"On the Court and Off." Anthony F. Wilding. Methuen and Co., 5s. The name of Mr. A. F. Wilding is well-known to our readers. Those of them who are lawn tennis players will read his book with no less avidity than those who are interested in the pastime with which this journal deals. Lawn tennis may be said to be the author's first love, but motor cycle riding is his second, and a very good second at that. "The whole secret about practising lawn tennis," says Mr. Wilding, "is to concentrate on the work in hand. Don't wonder why the back cylinder of your motor cycle refuses to fire, or worry about your business." Dealing with his stay in Johannesburg, which, he says, was absolutely delightful, he tells how, "The motor cycle club escorted me over to Pretoria, where we all lunched together and made motor bike speeches to celebrate the occasion. Then we adjourned to the tennis courts and had some good doubles. To finish a fine day we raced back on our machines to Johannesburg." In a special chapter, entitled "On the Road and In the Air," nearly the whole of the matter is devoted to motor bicycle riding and its joys, and very good reading it makes. "For Continental transit, as a medium for getting from one tournament to another, and that often a thousand miles away, I have found the motor cycle invaluable. My friends persist in thinking it has affected my play; on the contrary, I believe it has improved it. At any rate, it has kept me moving in the open, and it has brought me experiences and introduced me to phases of life abroad that I would not have missed for all the championships in the world." The book is well illustrated. Pictures appear of Mr. Wilding on the faithful Bat on which he rode from Land's End to John-o'-Groat's in the A.C.U. six days' trial of 1908, and of Mr. G. W. Hillyard, also of lawn tennis fame, rider of an 8 h.p. Zenith and sidecar.



The 2½ h.p. lightweight Gamage, an up-to-date, well made little machine, fitted with Armstrong three-speed gear, wide mudguards, spacious luggage carrier, and strong stand.

Through the One Day Trial On a Sidecar.



SPACE does not admit of a description of the pleasant but uneventful ride to Oxford. The next morning we started out on the trial in perfect weather. As we rolled along smoothly mile after mile, "we shall all get first-class certificates at this rate," said H. A. Collier. The first part of the route was uneventful, but about 2½ miles from Dursley, after a long climb, the hills of the southern Cotswold district suddenly opened up before us. There was Dursley in the valley with Longdown overlooking it, while to the right rose Frocester and Selsley.

"I am not much used to this 20 mile an hour business," "H.A." confided to me, though from what I saw of his practised handling I should never have known it.

"How does it feel at speeds of 70-90 miles an hour?" I asked.

"I don't know that you feel anything much except the rush of the wind and the vibration; the only thing is to hang on to your machine like mad. It practically wants no steering at those speeds."

We dropped down into Dursley, and then turning eastward towards Uley began to feel the full force of the wind. It made itself especially felt after we had climbed from the valley up a very stiff bit of road from the village of Uley up on to Frocester Hill. It was a pity the weather was so hazy, for on a clear day the view from Frocester is very fine; still, there was little opportunity to admire it as we bumped over the very poor road along the top of the ridge and down into Stroud. Then up again to Painswick and through the beautiful Cranham woods, which in their new spring finery were looking as nearly perfect as anything on this wicked earth. Birdlip has been little used for climbing of late, but it is a very long and trying ascent.

Its length brought even the powerful 8 h.p. engine down on to second gear, though, of course, to a machine like the Matchless, Birdlip presented no real difficulty. But it was up Saintbury Hill that the machine showed at its best. We saw the white flag away in the distance, and rough surface as it was, the throttle was opened out and the ignition advanced, as Collier knows how to do it, and in a few yards we were rocking along at a healthy 45 miles an hour; naturally, it was not long before we flashed by the timekeeper. It took less than no time to climb the steepest part, and, when we had got by the judges, in my innocence I thought we had come to the end of the hill. But "H.A." knew better, and we continued our rapid career over a surface that must have seriously handicapped any less efficient machine. Then came another steep part, and on top of that the flag of the limit. I should not think the machine's speed ever dropped below 20, and by the time we had got to the limiting flag, where the steepness of the hill had somewhat eased off, we must again have been doing about 40 miles an hour. The hill was little more than a dream, it seemed to have been so easily negotiated, yet those who have failed on it or had to walk up it will not say so. After passing through Bourton-on-the-Hill the dust of about a dozen competitors hove in sight in front of us, and for some miles we were compelled to travel in this dust. At last it became so unbearable that six miles or so from Sunrising the machine was slowed down in good earnest. Sunrising was not a timed hill, and though round the bend we came down on to the second speed, it, of coûrse, presented no real difficulties.



H. A. Collier on the 8 h.p. Matchless motor cycle and sidecar which he drove through the A.C.U. one-day trial. This machine secured a first class award.

The worst of travelling on a machine like the 8 h.p. Matchless is that it renders a journey so uneventful. Hills that you have failed on in the old days and pushed up with frightful labour seemed hardly to exist, while even the worst hills in good weather cannot be taken very seriously. Thus it was that from the Edge Hill tower our journey into Oxford, and, indeed, its night continuation up to London once more, were quite without incident. Altogether the experience was most enjoyable.



OCCASIONAL COMMENTS

By "IXION"

The A.C.U. Six Days' Reliability Trials.

Once again I appeal to the organisers of the A.C.U. reliability trials to penalise bad tyres. I hear rumours that the before breakfast interval for repairs (often utilised for changing tyres) is to be abolished this year, and so far as this affects mechanical troubles, it is all to the good. But it is scarcely fair that good machines should be disqualified or heavily penalised because of bad tyres. Punctures are all in the day's work, and in these days of quick drying solutions and butt-ended tubes, I have no desire to see punctures selected for special allowances; indeed, it is practically impossible to allow for them. But a good machine deserves protection against bad covers. There has never been a Six Days' Trial in which good machines have not been hampered by radically bad covers. The rider cannot protect himself. He is bound to start the week on new covers, and even if he fit covers of a make that he has often tested, he cannot make sure that the particular samples supplied for the trial will not let him down by splitting or bursting.

In previous years there has been some protection. Unless the burst or split occurs in a short control, he could usually struggle on to the end of the day by inserting a gaiter, and on reaching the night stop he could either change a cover overnight under observation without penalty, or utilise the half hour or hour before breakfast next morning in changing the cover. This year, with the stiffening of riding times all round and the (probable) abolition of the morning interval, riders will be at the mercy of tyre makers; and our sole protection will be to ride fast on long controls, and so save half an hour for tyre changes if a cover gives way. This fast riding and the keeping secret of tyre makers' deficiencies are both highly undesirable, so I hope the ingenuity of trials' organisers will be devoted to penalising the tyre maker and not the motor cycle manufacturer.

The Design of Three-speed Hubs.

I want to make further reference to a practical point of controversy in the design of three-speed hubs. The direct drive of the Armstrong hub is the second speed; the advantage of this design is that the lowest gear is obtained with only one set of pinions in motion, *i.e.*, with the minimum of friction; its disadvantage is that whenever a very low gear is required, the engine pulley is small, and belt slip is not unlikely. On the Sturmey-Archer hub the direct drive is the top ratio, *i.e.*, the diameter of the engine pulley is the normal ratio. This arrangement permits of a very low bottom ratio, without screwing out the engine pulley to very small diameters, which is an advantage.

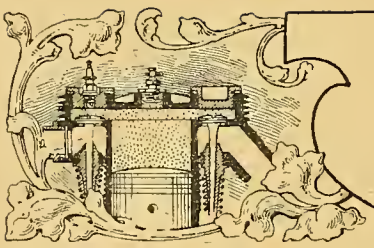
On the other hand, the bottom gear is obtained through two trains of pinions, *i.e.*, with additional friction, which must theoretically reduce its efficiency. Two points occur to me which may be kept in mind in studying future designs. The one is that the best place for a variable gear is on a counter-shaft, which enables the primary reduction to be obtained either by a chain or by a large pulley, thus obviating the tendency to increase the liability of belt slip at times when a gripping belt is most urgently required. Probably the future of evolution lies almost exclusively with the counter-shaft gear, which design further retains genuine accessibility for the rear wheel. Last year I could change a rear cover in fifteen minutes; this year (thanks to a hub gear) the same process occupies me threequarters of an hour.

The other point I should respectfully commend to hub specialists is that we should be grateful if they would manufacture their hubs with two sets of ratios. One firm at present sells a special sidecar hub, but it is identical with the solo hub, except that it has more plates in the clutch. Such a set of ratios as 3¾, 5½ (pulley), and 7½, serves admirably for a well-tuned, well-ridden 3½ h.p. solo, but the ratios are not low enough for a go-anywhere sidecar outfit, and if the engine pulley be screwed out far it is too small for sidecar work, and it is odds against the belt holding on a bad climb in dry weather, not to mention wet weather.

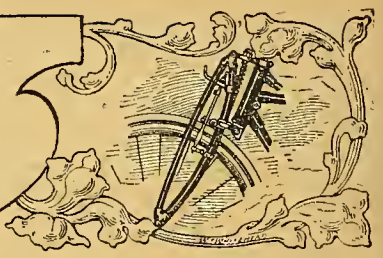
The 3¾ ratio is not of much value for sidecar work all the year round; it is often very pleasant in fine weather both on the level and on falling grades, but it could easily be dispensed with altogether. Now a sidecar hub with ratios of, say, 4, 7, and 10 would be infinitely preferable, and while hubs and sidecars are selling so very freely, a separate sidecar hub would repay manufacture, provided its design did not reduce the diameter of the engine pulley unduly.



A group of prominent New South Wales motor cyclists. The photograph was taken on the morning of the racing carnival at which W. Bearpark (marked with an ×) was killed through losing control of his machine. The mounted motor cyclists are W. Hillsden and J. Lucas of New South Wales, who both ride T.T. 3½ h.p. L.M.C. machines.



MAKING THE BEST OF IT.



A TREATISE ON TUNING UP. By W.G.A.

(*Concluded from page* 497.)

Short of rigging up a brake-test, which is quite necessary in tuning up a motor cycle, the next best method of testing the results of various adjustments is to take any even length of level road and time oneself over it, first in one direction and then in the other. This gets rid of variations in wind pressure, which may otherwise enter into calculation. The mean of the two times gives, of course, the nett speed.

Another way of applying tests is to affix the speedometer drive to the back wheel and run the engine for a few seconds on the stand, noting the highest speed which the indicator registers. This is quite a good test in its way for almost any adjustment, but is not calculated to lead to such good results as the previous one. For instance, when running light it is possible to have the spark advanced much further than one could have it when running the engine under load, so that the mere engine speed test is not perfectly reliable.

Twin Engines.

On twin engines some loss in efficiency is often caused by sharp corners in the



Fig. 5.

inlet pipe, especially at the bend at which the T-piece joins it which branches off to the carburetter. As has already been pointed out, it is important that the mixture supplied by the carburetter should not have to make any sharp turns in its course to the engine, because such sharp turns lead to surfaces of discontinuity being set up, in consequence of which the petrol vapour tends to come out of solution and to prevent the mixture from being quite uniform. Fig. 5 shows this idea, the surfaces of discontinuity being indicated by dotted shading.

In some inlet pipes the sharp corners at this point can be removed by filing the T lug, which, of course, has to be unsweated for this purpose. If this cannot be done an arrangement such as that shown in fig. 6 may be used, as by means of subsidiary diagonal tubes the speed of the mixture round the sharp corners is considerably increased. These diagonal tubes should be about ½in. in diameter, and may be sweated and wired on as shown. They do not make a particularly beautiful attachment, but in nearly all cases they do add to efficiency.

Where there is any suspicion of "choking," which is quite common in twin engines, which do not fire at even

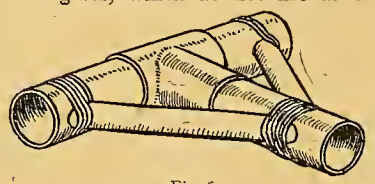


Fig. 6.

intervals, it is quite worth while to make a completely new inlet pipe such as that shown in fig. 7. The writer can testify to the effectiveness of this device, the only objection to which is that it sets the carburetter out a little further away from the cylinders than usual. Twin inlet pipes can, of course, be enlarged and furnished with helical copper heaters as applied to the single-cylinder inlet pipe described last week. Anything that will tend to make the power given off by each cylinder of a twin engine as nearly as possible the same, will inevitably lead to improvement in every respect.

Ignition.

The two matters which give the greatest scope for tuning-up the ignition system are the timing of the magneto armature and the setting of the plug points. A considerable amount of experimenting can also be done with the exact setting of the contact breaker platinums, but as a rule the gauge supplied with magnetos indicates an adjustment for this which one can hardly hope to better. It is not so, however, with the sparking gap of the plug, because the width between the two points for maximum efficiency varies with the speed of the engine and the compression, to say nothing of the make of magneto. For experimental purposes, therefore, a plug should be chosen in which the width of the gap can be adjusted readily, and in this case a single-point type will generally be found most convenient. The next thing to do is to make a gauge as shown in fig. 8. This is constructed of a strip of hard brass about one-eighth in maximum thickness. The length should be 3in., and for the half of this, that is to say, between the two points marked with arrows, the strip should be filed down to an even taper, the thickness of the point A being rather

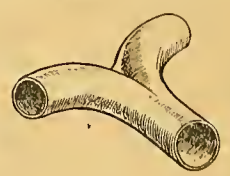


Fig. 7.

less than that of the ordinary magneto contact breaker gauge, viz., about one-third of a millimetre. The gauge so made can be roughly graduated, so that very careful and accurate settings of the pins can be made, their actual distance apart in millimetres or fractions of a millimetre being, of course, quite immaterial.

It is surprising the amount of difference in the running of an engine which can be obtained merely by plug point adjustment, although some engines are more amenable to this treatment than others, especially those in which the compression is not very high. I have also found a marked difference in the gaps which give the best results in engines of exactly the same type, whilst on the last engine I experimented with, a twin, the best possible gap for the front cylinder was decidedly larger than that giving the best results in the back cylinder. This was probably due to the increased wear, due to poor lubrication, on the front cylinder slightly reducing the compression.

Fig. 8.



Next with regard to the timing of the magneto armature in relation to the engine. It is easy enough to get this *nearly* right, but to get it perfect requires a good deal of manipulation. On some engines provision is made for giving a fine adjustment to the driving sprocket or pinion, but this is the exception rather than the rule. Where none is fitted it is easy to make a little jig which gives remarkably good results and is exceedingly easy to make.

Fig. 9 shows the device as applied to a gear-driven magneto pinion. A strip of brass or steel is bent round in the form shown in the sketch, the internal diameter being the same as that of the pinion carried on the armature-shaft. The end of the strip A is turned sharply inwards and filed until its shape enables it to fit into one of the teeth, which should be marked in some way. The other end of the strip is twisted and bent over as shown, whilst a small piece of brass is sweated to the turned-in end so as to form a clip whereby, with the aid of a $\frac{3}{16}$ nut and bolt, the whole can be clamped tightly on to the pinion. The extended arm B is used as a kind of dial. Into the end of the armature shaft, which in the drawing is shown with its nut, a diametrical nick is cut

Making the Best of It.—

with a fret-saw to the depth of about $\frac{1}{16}$in., or perhaps a little more, and to fit this nick a piece of old hack-saw blade is taken, softened and twisted over as shown at C. The end of it D is

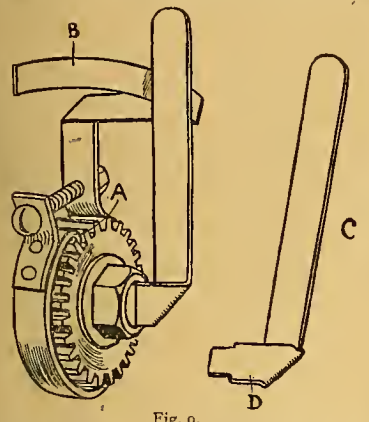
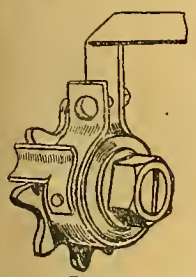


Fig. 9.

then filed until it is an easy fit into the end of the armature spindle nut, and when this has been done the blade is hardened again.

This simple little device enables the magneto to be timed with extreme accuracy, provided that the pinion or sprocket is not keyed to the armature. If it is the key must be removed. To use the contrivance a dot is made with a centre punch on B exactly opposite the edge of the blade C, when the pinion is in the normal position. This dot forms the starting point for further adjustments, as by making quite rough graduations on the brass arm an extremely fine adjustment can be made on the armature-shaft, using the blade C to set it in position relative to the pinion or chain sprocket. By this means it is possible to get the very best possible timing, and the setting can be done with absolute ease and certainty. The manner in which the device is arranged for a chain sprocket is shown in fig. 10.

Amongst other points which are worth experiment are the position of the plug or plugs in the cylinder and also the depth to which they extend, which is commonly known as the "reach" of the plug. In engines with side-by-side valves only short reach plugs can as a rule be used so as to prevent the likelihood of the inlet valves pushing the points together.


Fig. 10.

In other engines improved running is obtained, as shown in fig. 11, by using a long reach plug in the cylinder head so that the points come below the surface of the combustion head. By this means the inflammation of the mixture is made as rapid as possible, with the result that the engine can be got to run effectively at a higher speed.

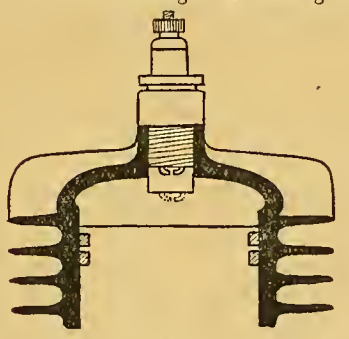
Compression.

The compression ratio of engines is decided upon by their makers with a view to the average work which they will have to perform, and it is, therefore, in most ordinary engines, slightly on the low side, so as to be suitable and comfortable to people who do not want much speed. Where capability of fast work is considered of more importance than a slight decrease of comfort when pottering, and an inability to run evenly at very low speeds, the compression ratio may be slightly increased with good results. In this respect it is hard to lay down any hard and fast rules, as the matter depends so much upon the design of the engine.

With a side-by-side valve arrangement, special valve caps can nearly always be obtained which project further into the cylinder and so decrease the compression space. In some engines they prove an advantage, whereas in others they make little difference. One reason of this is that whilst they tend to increase efficiency by increasing compression, they defeat their own ends by promoting a bad internal form of the combustion chamber as indicated in fig. 12. This is, unfortunately, the only easy way of altering the compression short of having a piece turned off the cylinder flange. It may, however, be *reduced* easily enough by placing packing plates, alternately of sheet iron and oiled brown paper, between the cylinder and the crank chamber.

Valve Setting.

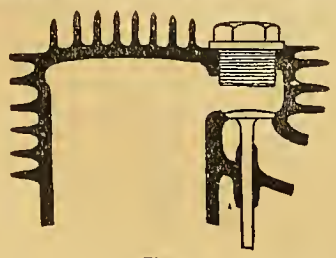
In most motor cycle engines the means allowed for altering the timing and


Fig. 11.

setting of the valves are very limited. The cams are nearly always in one piece with the half time pinions, whilst the timing pinion on the crankshaft is generally keyed or otherwise held immovable in position. This is certainly as well, because it prevents immoderate "playing about." Usually the timing of an engine can be taken as correct if it is set as it was when it leaves the maker's hands. If the machine is second-hand, however, it may easily happen that the previous owner has upset the valve timing.

Once the timing wheels have been marked with a centre punch so that they can always be put back into their original position, it will often pay the tuner-up to try the effect obtained by advancing or retarding them a single tooth, not forgetting that if the exhaust opening is moved it may upset the magneto timing.

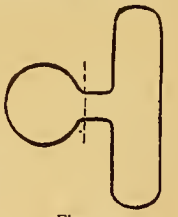
The period of opening and closing of valves varies quite considerably with different designs of engine, but the following figures represent an average of fairly high efficiency. The inlet valve should open exactly on the top of the stroke and should close when the crank has passed through an angle of 210°, that is to say the inlet does not close until the compression stroke has started. The firing point should occur, when fully retarded, about 5° before the piston is


Fig. 12.

at the top of the stroke. The exhaust should open about 45° before the end of the explosion stroke, and close slightly after the piston has reached the top of the cylinder.

Those engines which are fitted with adjustable valve tappets lend themselves most readily to precise tuning, as they enable the best possible clearance between the tappet and the valve stem to be arrived at and fixed with great ease. This clearance is a matter of considerable importance, and is best effected by a process of trial and error.

In engines in which there is no provision made for adjusting tappets, wear can only be taken up by lengthening the tappet itself or the valve stem. The latter is the easier. Special thimbles which fit tightly on to the base of the stem, and of various thicknesses, can sometimes be obtained, but in their place quite an easily made little dodge can be used. To construct it one requires three or four different thicknesses of mild steel sheet, which are cut out roughly with the snips and afterwards filed to the shape shown in fig. 13. They are then bent up to the form shown in fig. 14, and applied to the base of the valve stem, as illustrated. The two encircling arms should be bent round a piece of rod *smaller* than the valve stem, so that when applied to the latter they make a thoroughly tight fit. The edge of the valve stem which abuts against the upturned piece should be very slightly rounded off with a file, as shown in the sketch. This prevents the adapter breaking at the corner. By making different thicknesses the valve clearance can be nicely adjusted and the adapters can be slipped on and off.


Fig. 13.

On overhead valve engines in which there is an outside tappet rod the clearance of this should be adjusted *when the engine is hot,* for this reason: The cylinder when running is hot whilst the tappet rod remains practically stone cold, hence the clearance between the tappet and the valve stem increases the hotter the engine gets. When properly adjusted there should be, therefore, practically no clearance at all when the engine is cold. It will, of course, be realised that the smaller the clearance the earlier the valve opens.

Making the Best of It.—

Gear Ratio.

If appearances be not deceptive, the matter of gear ratio is one that, even if properly understood (which it seldom is), never as a rule receives more than scant attention at the hands of the ordinary amateur, as in most cases the deep-rooted fallacy is held that the higher the gear the higher will be the speed of the machine. There never was such a persistent misconception as this, for there is nothing so easy as to overgear a small engine, and it ought to be well known that very frequently to decrease the gear is to increase possible speed, to say nothing of improving hill-climbing abilities, etc. When the machine is running at its highest rate of speed on the road the engine should be turning pretty nearly as fast as its maximum number of revolutions on the stand.

Owing to the fact that the higher the speed of the engine the less becomes its volumetric efficiency—the h.p. curve does not go up proportionately with the revolutions, and it is for this reason that a careful choice of gear ratio is so important. It is not enough roughly to measure the diameter of the engine pulley. To ascertain the gear ratio correctly (and it is well worth while to do so with the utmost exactness) for future adjustments, both the back tyre and the engine pulley should be chalk-marked and the precise number of revolutions and fractions of a revolution made by the engine for one of the back wheel measured. In this matter belt fasteners which allow of two or three different adjustments are very useful.



Fig. 14.

On chain-driven machines the gear ratio cannot be altered with such exactness unless a whole stock of sprockets be invested in. The tuner up should, however, have no difficulty in seeing if the gear is in need of considerable alteration, and if so then the purchase of a single sprocket should be sufficient for improvement. They are, however, not cheap things to buy, so that the chain-drive enthusiast is restricted to other branches for his tuning up.

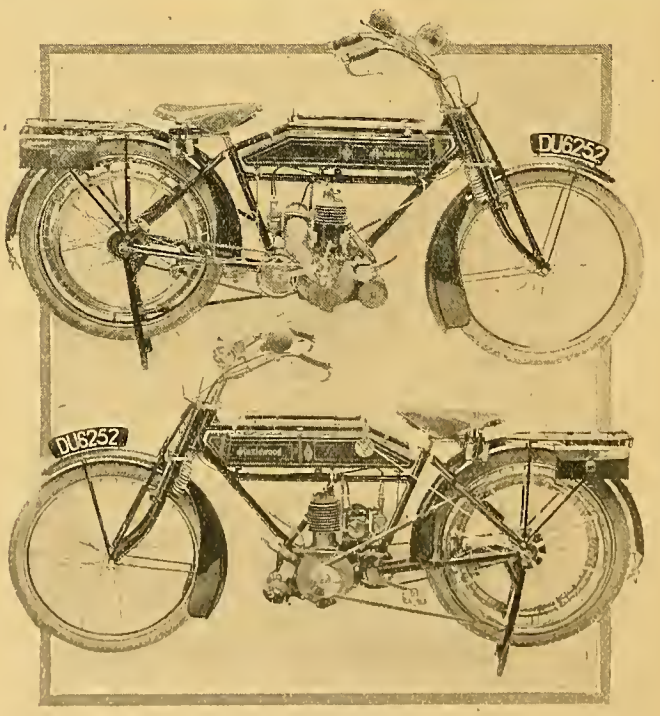
Silencer.

It is generally admitted that motor cycle exhaust boxes (one hesitates to call them "silencers") are not as efficient as they should be, but the point is not generally realised that often a few simple alterations will make them not only quieter, but better from the engine efficiency point of view. In quite a number of silencers the exhaust gases enter a box from which they can only emerge by passing through a number of very small holes. By blowing down the exhaust pipe one can of course detect no suggestion of back pressure in such an arrangement, but it is a very different matter when it comes to gases travelling at exceedingly high velocities. In these circumstances small holes offer a very high degree of resistance. Improvement, however, can sometimes be made by boring out these holes considerably larger and fitting internal baffle plates, the idea being to give the exhaust a fairly free passage, whilst cooling it as much as possible. By this means both increased silence and increased efficiency can often be obtained.

Two up Edge Hill on a Lightweight.

FOR some time past we have been promised a trial of the 2¾ h.p. Hazlewood three-speed geared machine, and quite recently Mr. Hazlewood telephoned us to say that a machine was ready.

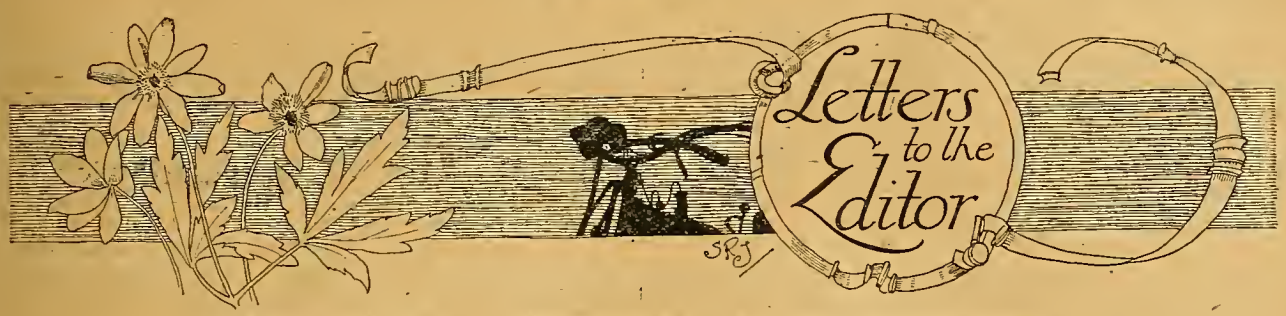
First of all we had a good look round and were struck by the excellent finish and attention to detail. Both mudguards are fitted with side flaps, the clutch rod is divided so as to prevent whip, and an excellent leverage is obtained. All control levers come in convenient positions, and almost every nut is castellated and cottered so that there is no chance of its working loose. We were accompanied on our trip to Edge Hill by Mr. Walsgrove, of the Hazlewood firm. The machine we rode was absolutely standard and quite new, but we were astonished at the power developed by the little 70 × 76 mm. engine. At our first attempt at the hill we got up comfortably on the low gear, and at a later attempt came up well on the normal gear of 6¾—1. We then went on to Sunrising and made two good climbs, both on the normal gear. When it is considered that a very short time ago Edge Hill and Sunrising were both considered severe tests for a 3½ h.p. motor cycle, it seems truly wonderful to be able to take a standard 2¾ h.p. machine over both these hills on the normal gear. Not content with this, Mr. Walsgrove suggested that we should come up on his carrier. At the first attempt we failed within about thirty yards of the top, but on slightly lowering the gear sailed over comfortably. Surely this is a magnificent performance for so small an engine. The low gear ratio when carefully checked was just 9—1. The weight of passengers totalled 21 stones odd, and Edge Hill is nearly three quarters of a mile long, having a maximum grade of 1—7, and an approximate average grade of 1—10. On the return journey we were troubled by two punctures, both caused by nails, but otherwise, with the exception of lowering the gear for our attempt with two up, the toolbags remained unopened. The mention of toolbags reminds us of the complete equipment of tools packed neatly in pannier bags, and the 2in. moulded Dunlop tyres supplied with all Hazlewood motor cycles. We are indebted to Mr. Hazlewood for a very pleasant run and an eye-opener as to the capabilities of a modern lightweight.



Two views of the 2¾ Hazlewood, which is fitted with a J.A.P. 70 x 76 mm. engine and Armstrong gear.

Open Hill-climb in Yorkshire.

The Bradford M.C.C. has selected Leathley Bank, near Pool (Otley), for its fourth annual open hill-climb on Saturday week, the 18th inst. There are eight classes on the programme embracing every type of motor cycle from the lightweight to the cyclecar. Stripped machines will be allowed in the racing classes. Electrical timing will be used. A competitor weighing less than 154 lbs. must provide ballast to bring his weight up to this minimum. The Eric S. Myers silver trophy will again be competed for. The annual open reliability trials will take place on Whit Monday and Tuesday, May 27th and 28th, to Edinburgh and back.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street E.C., and should be accompanied by the writer's full name and address.

Inside or Outside Flywheels.

Sir,—I would very much like to know readers' opinions on the following question: How is it that, although internal flywheels are obsolete in aeroplane, car, and motor boat engines, they are still retained on motor cycles? As the owner of a 2¾ h.p. machine with outside flywheel, I should like to point out that it climbs better and will run slower than any other motor cycle I have owned. As this is my fifth machine, I think I should be able to compare the two different types of flywheel. PASSENGER.

Sidecar Taxation in Scotland.

Sir,—I was rather interested in the query signed "Leith" in *The Motor Cycle* of April 25th. Your correspondent is evidently going by what he has heard, and not made enquiries at the revenue offices. I had occasion to fix a sidecar to my machine this week, and not knowing whether I was obliged to pay extra tax or not, I went to tax office in Waterloo Place, Edinburgh, and was most courteously informed that no extra licence was required, as a sidecar made the combination into a tricycle and £1 tax already paid covered bicycle or tricycle. I was further informed that an extra tax was required for a trailer, as this made a four-wheeler. EDINBURGH.

Disqualifications.

Sir,—After reading Mr. H. C. Newman's letter, *re* his disqualification in the touring single-cylinder class at Leathley Bank, one is forced to the conclusion that he has a very real grievance against the officials. The only reason given by them to Mr. Newman, *i.e.*, "that no touring single-cylinder could climb the hill in that time," would be ludicrous, were it not for the fact that he was actually disqualified on that account.

Would it not be advisable, to avoid misunderstanding and to make things quite clear, if the disqualifying officials made public, through *The Motor Cycle*, the actual facts leading up to the disqualification of the Ivy.

As the matter stands it is very unsatisfactory, and is liable to create wrong impressions. "IVEONA."



THREE PARSON BROTHERS WHO MOTOR CYCLE.
Rev. H. Stanley, Rev. Geoffrey, and Rev. P. G. Tibbs. Their mounts are a Triumph, Humber, and Douglas respectively.

Carrying a Camera.

Sir,—In reply to Mr. Gordon M. Wilson's letter published in the last issue, I would strongly recommend him *not* to carry his camera and lens in a box fixed to the top tube of his machine; even if the vibration were not sufficient vitally to harm his camera, it is yet well within the bounds of possibility that the "centring" of his lens might be seriously interfered with. The Ross anastigmats are really first-class lenses in every way, and it therefore behoves the owner of such an instrument to take every care of it and run no unnecessary risks.

I always carry my camera in a leather sling case with the strap passing over my right shoulder and under my left arm. The case contains loaded slides as well, and I have never noticed its presence except when actually needed.

E. G. EVEYARD, S.L.P.S.

Lubrication.

Sir,—I have a small twin, and the oil reservoir and pump are in the rear end of the tank, easily accessible from the saddle. I have removed the check valve and fitted a small tap on the oil pipe to engine, and to this tap I have soldered a thin sheet steel lever about six inches long, coming level with the top of the tank. I have marked on the tank when the tap is closed and when it is open for average running.

The long lever admits of the tap being opened or closed with great nicety, and the engine can be kept running without attention for many miles; the vacuum in the crank case appears to induce the oil, even with an aperture through the tap so small that movement of the pump plunger, when pressed hard, is imperceptible. By opening the tap, a pumpful can be passed through at any time, but in practice I find it quite unnecessary.

On long hills, I move the lever slightly forward until I see smoke at the exhaust, and then put it back to normal. In short, the arrangement seems to meet all requirements, and is so simple that anyone can fit it, and the running position of the long lever is easily found by experiment, once and for all. C.E.

The Holyhead Road at Corwen.

Sir,—Could you spare me a few lines in your paper to vent a complaint and give a warning to other motor cyclists.

It has been my misfortune, with two other friends, to traverse that last ten miles of the Holyhead Road into Corwen from Bettws. I shall not attempt to describe the awful state that this road has been allowed to get into—there is not a language that could do it justice and no imagination that could picture it—one has to go over it to realise how bad a road can be; the horrible gutters and terrible stones that are hidden by water, which in places reaches nearly to the hub of the wheel, form real death-traps. I might state that the damage done to my cycle was badly dented rim, cut tyre, buckled front brake, and broken back stand. I will not worry you with what I think of the powers that be for allowing a main road to get into such a state, but, in conclusion, let me advise any motor cyclist who intends touring North Wales not to touch that first ten miles out of Corwen, for a ploughed field is a paradise to it. H. M. WILLIAMS.

[Readers who wish to avoid this stretch of road on their way to the North Wales coast should travel *via* Ruthin, Denbigh, and St. Asaph.—ED.]

A Sidecar Tip.

Sir,—It may be of some use to the readers of *The Motor Cycle* to know that a two-gallon petrol tin is just the right height to be used as a sidecar stand. As many motor cyclists carry a spare tin with them, they will find it very useful for jacking the sidecar wheel to mend punctures when a sidecar stand is not obtainable.

Personally, I jack my cycle on the front and back stands, and put a petrol tin under the sidecar axle, thereby taking all wheels off the ground when the cycle is to be left unused for any long period. It is a good plan to place a soft rag between the axle and the can to prevent scratching the enamel.

Some people find difficulty in carrying a spare petrol tin on a sidecar. I used to carry it on a platform under the sidecar, but once when I came to require the petrol I found that a hole had been worn in the tin where it came in contact with the sidecar frame. I now fix it on the down slope of the sidecar seat, on the inside, under the passenger's legs, and I find it does not inconvenience the passenger in the least, and is out of the way and does not affect the appearance of the sidecar. R.G.E.

An Amateur Hill-climb.

Sir,—May I through your correspondence columns bring to the notice of amateur riders the open amateur hill-climb that is being organised by the Sutton Coldfield and Mid-Warwickshire A.C. to take place on the 18th inst.?

During the past year or two there have been a large number of complaints from private owners, who ask what chance they have of winning when competing against the trade cracks, such as one meets at every big hill-climb. The sport consequently suffers, as the same small coterie of expert riders are to be met with all over the country, and the prizes usually fall to them.

The Sutton Club, however, has attempted to fill the gap by organising an open hill-climbing competition in which no members of the trade will be eligible to compete. In addition, all amateurs who have won a first prize in any open hill-climb are also barred, and it is hoped that this will have the effect of attracting a large entry from amateurs all over the country.

The usual classes are provided, and good prizes are awarded, and as the climb will be conducted on the "knock-out" principle, where riders race up the hill in pairs, some most attractive and exciting sport is assured.

All particulars can be had from the trials hon. secretary, Mr. James St. John, 33, Fountain Road, Edgbaston.

HOWARD SMITH.

Hon. Sec. Sutton Coldfield and Mid-Warwickshire A.C.

Perished Air Tubes.

Sir,—I have had rubber inner tubes in use and in good condition for five years or longer. I have recently seen a piece of rubber that I played with as a child fifty years ago that still requires an expert and a wetted knife to cut. I believe this was natural rubber, unmanufactured. Oh, for a cover made of that!

I have recently had a tube from one of the best manufacturers that split beyond a mended puncture two days later, for four times in succession, and was as rotten as wet paper. I sent it to the makers for their report upon it. The next day they wrote "that they could find no fault with it."

In the meantime I put one piece of a new tube to soak in petrol and another in mineral naphtha that I used for cleaning the tube and patch before solutioning for patching. They were both as soft as wet paper. My second letter to the makers, explaining that I had found out the cause of the trouble, crossed their reply. In three days the rotten patches that I had soaked, which in the meantime had been exposed to the air, had returned to their natural, strong, and flexible condition.

Therefore the advice to the wise is: Don't use these cleaning mediums unless you give time and opportunity for the rubber to recover from the temporary damage, and remember that, although the outside of tube and patch soon recover, the inner side of the tube requires, for the same effect, that it should be filled with air and emptied many times prior to inflating hard.

These cleaning mediums enter the tiny puncture easily and run along the inside of the tube. I think this will account for trouble to the tubes of many of your readers.

W. H. ROWE.

Petrol Consumption.

Sir,—The importance of this subject to all motor cyclists is my excuse for asking for the insertion of this letter in your columns, in the hope of gaining some useful information for myself and doubtless many others whose experience coincides with my own.

I have observed that you have several times stated that the popular 3½ h.p. machine should run about one hundred miles to the gallon of petrol. I can only say that neither myself nor any motor cyclist I have enquired of has ever been able to get anything like that result from an ordinary 3½ h.p. model; and I find the general average seems to be somewhere about seventy miles per gallon.

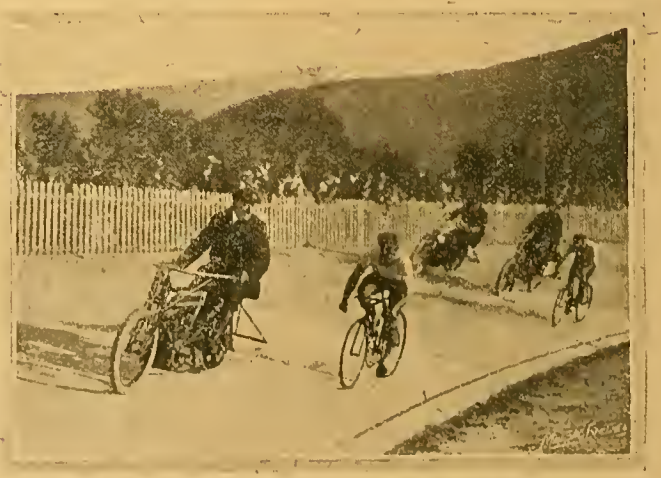
Personally I ride a 1911 pattern of a very popular mount, and over several thousand miles my consumption averages just sixty miles to the gallon. My carburetter is a B. and B., and the jets used are .030 and .032.

It would be interesting, and perhaps advantageous, to learn from a more general body of motorists if the consumption I name is really abnormal, or if the figure you and the makers give is only a "paper" one that cannot be borne out by actual touring experience. If the former is the case, perhaps some hints may be forthcoming to create an improvement. I am sure they would be welcomed by a large number of motor cyclists ENQUIRER.

Three and Four-wheeled Cyclecars.

Sir,—Mr. Stirling mistook my meaning. I did not assert that "the *summum bonum* of all self-propelled vehicles is embodied in a three-wheeler." Such an assertion would be ridiculous; it would imply that I preferred a Morgan runabout to a Rolls-Royce! My point was that, so far, the three-wheeler cyclecar has an advantage over other cyclecars. At present (I make no prophecy as to the future) the four-wheeler labours under this disadvantage, that it must be either belt-driven or be fitted with a differential. To the belt drive there are obvious objections, though I do not for a moment assert that a belt-driven car is "of no good whatever." On the other hand, if a differential be fitted the price of the car is increased, and another complication added. In point of fact, a cyclecar with a differential is practically a small car and nearly as expensive as some small cars. The cyclecar at £130 or £140 should be able to give points to the second-hand car costing £80 or £90 (though at present the cheaper car holds its own), but at that price it does not supply the need which the cyclecar is intended to supply.

For my own part, I think that the R.A.C. and A.C.U. would do well to add to its definition of a cyclecar, "and costing not over 100 guineas." Mr. Stirling, I notice, does not dispute my facts, though he tries to explain them away. I could explain his explanations, but I will not trespass on your space. Allow me, however, to add these additional "facts." In the handicap race at Brooklands on April 20th three-wheelers were first and second, and another three-wheeler made much the fastest time. In the A.C.U. reliability trial on April 24th only one cyclecar—a three-wheeler—obtained a first-class certificate. H. GEORGE MORGAN.



The 25 Miles Bicycle Championship of South Africa, held recently, was motor cycle paced. The pacers may be seen "picking up" their men at the start.

Clashing of Dates.

Sir,—I have read Mr. Brooks's letter in your last issue, and as he refuses to accept my assurances on the point of my committee's ignorance of his club's trial being fixed for the same date, I would ask you, at the risk of using more of your space than the subject probably merits, to place the following consideration before your readers. If my committee had known that another well-known club would be running a similar trial is it likely that they would have deliberately jeopardised the chances of securing a representative entry by selecting the same date?

I only asked you to publish my first letter on this matter in the hope that it would make clear to the Birmingham Club that we have no wish to interfere with anybody's sport, and I am convinced, Mr. Brooks's letter notwithstanding, that the appearance of my letter would have this effect with the average member of the Birmingham Club.

H. J. POOLEY,
Captain North-West London M.C.C.

The Trade and Competitions.

Sir,—I have pleasure to advise that at a meeting of the Motor Cycle Section of this Union, held on May 1st, it was resolved:

"That in future members of this section will not support, either by entries or by contributions to prize funds, any hill-climb, or any competition which includes hill-climbs, if such hill-climbs are to be

(1.) Won on time, and

(2.) Unless the personal assurance of the promoters is given that the hill selected is free from dangerous corners or hair-pin bends."

It is hoped that you will consider such a resolution to be in the best interests of the sport, and that you will give it the desired publicity in your columns.

ALF. BEDNELL.
Secretary, Cycle and Motor Cycle Manufacturers and Traders' Union, Ltd.

The Problem of the Automatic Carburetter.

Sir,—I cannot allow statements appearing in an article under the above heading to pass without comment. Your contributor says "it is essential that the petrol level must be exactly level with the top of the jet in all carburetters with one exception." I would like to say that in the "Binks" two-jet carburetter, when running on the small jet, no matter how slowly the engine is turning round, the velocity of the air up the small choke tube is so great that the height of the petrol is immaterial. This can readily be proved by shutting the petrol tap off, and the engine will run without misfiring until the float chamber be emptied. Then again he says that on opening the extra air port no more air is admitted to the cylinder. This statement is inaccurate. When the engine is revolving at a high rate of speed, the restriction of the choke tube causes friction, and when the velocity of air exceeds ninety feet per second, the flow is restricted, and the effect of opening an extra air port undoubtedly admits a greater volume, and, of course, reduces the velocity past the jet somewhat, consequently reducing the flow of petrol. I also suggest that a motor cycle does not work within wider speed limits than a motor car engine. Almost any well designed car engine will run at half the speed of a motor cycle engine and accelerate to an equal number of revolutions, and all this is obtained in a modern carburetter without having to fiddle about with extra air levers.

The principle on which a two-jet carburetter works seems to be altogether misunderstood by people who are otherwise well informed, and the satisfactory results obtained by these carburetters is due to the fact of one jet automatically correcting the other. So perfect is the action, that no matter at what speed the engine is running up to certain limits the opening of an extra air port makes no appreciable difference.

If your correspondent would care to call at my works with his machine some time, I shall be pleased to fit him a carburetter on, and explain the principle personally on which it works, and he can then corroborate all I say by a road trial.

CHAS. BINKS.

The Trade and the T.T.

Sir,—A good deal has been written criticising the manufacturers' action with regard to the T.T., but very little has been said in their defence.

The manufacturer has to look upon the T.T. race from a business point of view, and the first question which has to be considered is expense. No private owner can have any conception of the cost which such a race involves. The dislocation of a system which it has taken years to perfect, brought about by the necessity to make a special model in the middle of the season, means a loss which can hardly be over-estimated. The firm's most highly skilled riders and testers will be engaged for weeks on these special machines, instead of on their ordinary work of testing and improving the standard models. One or more depots must be established in the island and a huge stock of spare parts sent across. The so-called amateurs competing on the firm's machines will require continual attention, and the entry fees, fares, hotel expenses, etc., all go to swell the total.

Nobody denies that, as a sporting event, the T.T. deserves encouragement, but surely the manufacturer is the best judge of its value from a business point of view.

They are not up against the T.T. to spoil sport, but because they consider the costs and the risks too great; but frame the regulations so that the race is a genuine amateur sporting event, and the financial support which would be forthcoming from the manufacturers would open some people's eyes.

B. MARIANS.



MERSEY M.C. OPEN RELIABILITY TRIAL.

A scene near Cerrig-y-Druidon. The only sidecar survivor—R. Lord (6 h.p. Rex sidette) His passenger is asleep.

Mersey M.C. Twenty-four Hours Trial.

THIS event, which was held on Friday and Saturday last over a severe course partly in North Wales, was to decide the winner of the Butler Cup. Gold medals were also awarded to all who finished within maximum time allowed.



W. Davies (3½ h.p. J.A.P.) and R. Rees (3½ h.p. Rudge) checking in at Ruthin. These two were the first arrivals.

Long before 8 p.m. on Friday the competitors began to arrive on St. George's Plateau, Liverpool, this being the rendezvous, where numbers, armlets, etc., were distributed. From here a move was made to the landing stage and thence over to Birkenhead by a special ferry boat. At nine o'clock sharp the first man was despatched, but had not proceeded far before he skidded, breaking the foot rest and pedal clean off his Rover. As he had nowhere to rest his foot he promptly retired. The first part of the route lay through Chester and on to Worcester.

A Chapter of Accidents.

Before leaving Birkenhead we passed Chas. Murdock (3½ h.p. Singer), who had broken his lamp bracket, and was delayed so long that he retired. In Chester we overtook F. C. Jones (3½ h.p. Bradbury), who had lost his pulley locking nut. This caused the gear to be raised to 3 to 1; he was unable to obtain another nut, so proceeded as far as Hodnet, where rather a nasty accident occurred. Just after passing through the village a sharp corner to the left is encountered. A party were riding together, led by J. M. Lamb (2½ h.p. Premier), who skidded and fell. Fred Dover (3½ h.p. Premier) ran into him, and likewise came off, added to which an Overland car, which was competing, ran into them. Lamb was rather badly injured, and was taken back to Hodnet in the car. Fred Dover, luckily, only cut his eye and slightly hurt his ankle. After helping Dover to repair his rear tyre, which had burst, and generally straighten things out, we gave him a push off, his ankle preventing him from starting himself. After a few yards, however, he discovered that the front forks were badly bent and the tyre was rubbing. He was, therefore, compelled to retire.

At Wellington, the first check, supper was provided. The roads were dry until just before entering Worcester, where a great deal of rain appeared to have fallen, V. E. Horsman (3½ h.p. Singer) had from all accounts fallen asleep and skidded on the greasy tramlines. This brought him off, and as he was badly shaken he decided to retire, and was taken into Worcester on Mr. Percy Butler's Lancia car. The second check was at Worcester, and after partaking of hot coffee, the riders pushed on to Llandrindod Wells.

Breakfast was served at the Bridge Hotel, competitors being timed in and one hour allowed for this meal. Thence the route led us to Welshpool and Bala. Just before reaching the former place rain commenced to fall heavily; however, after we had checked and filled our tanks the weather improved. The roads now became very narrow and twisty, being in parts more like footpaths. A steep hill out of Peny-bont-fawr led us over a mountain pass with a shocking surface and many gates, all of which were closed. The road was very narrow, and from its edge there was a sheer drop of 200 feet to the valley below. Down a very steep hill with a hair-pin bend on it brought us into Bala, where many of the competitors checked in late. The road on to Beddgelert, *viâ* Festiniog and Maentwrog, to start with, was crossed by many gates, all of which had to be opened by the competitors. A fairly steep and tricky hill led us out of Festiniog, where a great number of people awaited the competitors.

At the Royal Goat Inn, Beddgelert, lunch was served and tanks refilled. Just as Mundy was about to start he discovered a nail in his rear tyre and had to effect a repair. When most of the competitors had left W. Heaton (2½ h.p. A.J.S.) arrived, reporting nine punctures and two bursts. While Heaton went into the hotel to secure some much needed refreshment, a non-competitor repaired his rear tyre, and while this was being done the front tyre went down. Surely this was very hard luck!

Outside Beddgelert, on the way to Ruthin through Bettws-y-Coed, we met a great number of cars coming in the opposite direction. In the latter place we noticed one of the new R.A.C. road guides in his smart uniform and on his blue-coloured bicycle. Then the rain started again and continued until Queensferry, which was reached *viâ* Ruthin, where a check was arranged. The rain had made the roads in a shocking condition, and the competitors had to ride with great caution. Many side-slipped and fell, among whom was G. A. Gregson (3½ Bradbury), who skidded while pumping some oil into his machine. He was travelling at a good speed, and was thrown right into the gutter, covering himself from head to toe with mud. On this section J. H. Roscoe (3½ h.p. Singer) skidded, smashing one of the springs of his forks.



At the end of the 24 hours' run. A muddy but happy trio (left to right)—George Wray, Hugh Gibson, and Harry Reed.

Mersey M.C. Twenty-four Hours Trial.—

At Gayton tea was served at 6.15 p.m., and the first man was despatched for Woodside, Birkenhead, after having been allowed thirty-one minutes for tea. Seven and three-quarter miles brought us to Birkenhead, the finishing point.

The following completed the trial :

W. Davies (3½ Victoria-Jap)
C. Hobbs (2¾ Humber)
G. A. Gregson (3½ Bradbury)
F. Rees (3½ Rudge)
W. E. Rootes (3½ Singer)
A. J. Jenkins (3½ Macbeth)
N. Howarth (3½ Bradbury)
N. H. Brown (7 Indian)
A. C. Smith (3½ Rudge)
M. Rimmer (3½ Zenith)
Hugh Gibson (3½ Bradbury)
R. G. Mundy (3½ Singer)
H. Scott Clark (3½ Rover)
G. Wray (3½ Bradbury)
J. Cadwallader (2¾ Enfield)
A. Marston
H. Reed (Dot)
W. Heaton (2½ A.J.S.)
R. Lord (6 Rex Sidette)

The Mersey Club is to be congratulated on the organisation, and everyone commented on this point.

THE LONDON-EDINBURGH RUN.

Further entries for the M.C.C. London-Edinburgh run have been received as follow, the total up to date being 46.

BICYCLES.

F. Wasling (2¾ Enfield)
A. J. Duncan (7 Rex)
S. F. A. Oldfield (2¾ Enfield)
C. Stanley (5 Indian)
H. E. Davison (3½ Rex)
E. Pond (3½ Rudge).
J. Holroyd (2½ Motosacoche)
H. Le Vack (2½ Motosasoche)
J. A. Campbell (3½ Rudge)
Chas Louett (3½ Triumph)
A. Peppercorn (3½ Bradbury)
G. T. Gray (3½ Rudge).
Ronald Clark (3½ Rudge)
H. Frankenstein (3¾ Scott)
Harold Karslake (3½ Rover)
W. C. Henry (3½ Service)
A. E. Catt (3½ Triumph)
Commodore Sir R. K. Arbuthnot (3½ Triumph)
W. F. Newsome (3½ Triumph)

PASSENGER MACHINES.

B. Howlett (A.C. Sociable)
H. E. Hull (7 Indian sc.)
C. Bealby (5-6 Clyno sc.)
J. T. Wood (G.W.K. cyclecar)
W. Eggerton (3½ New Hudson sc.)
W. H. Wells (7 Indian sc.)
B. Allan Hill (7 Indian)

A set of three meal coupons for the single and six for the double journey may be purchased for 8s. and 16s. respectively from Mr. H. G. Bell, the trials hon. sec., of 3, Granville Road, North Finchley, N.

THE 1912 T.T. RACES.

As was announced in our issue of last week, Mr. Loughborough, the secretary of the A.C.U., is crossing to the Isle of Man next week to make arrangements for the holding of the above classical events. As will be seen from the list given below, no fewer than fifty entries have already been promised for the two races, so despite the abstention of many trade entries, there is every prospect of the races being successfully held. The preliminary regulations are now out, and entries close on June 1st. All those, therefore, who contemplate supporting these interesting events should send in their entries as soon as possible. The Auto Cycle Union is exerting every effort to render the Isle of Man week as attractive as possible.

SENIOR RACE.

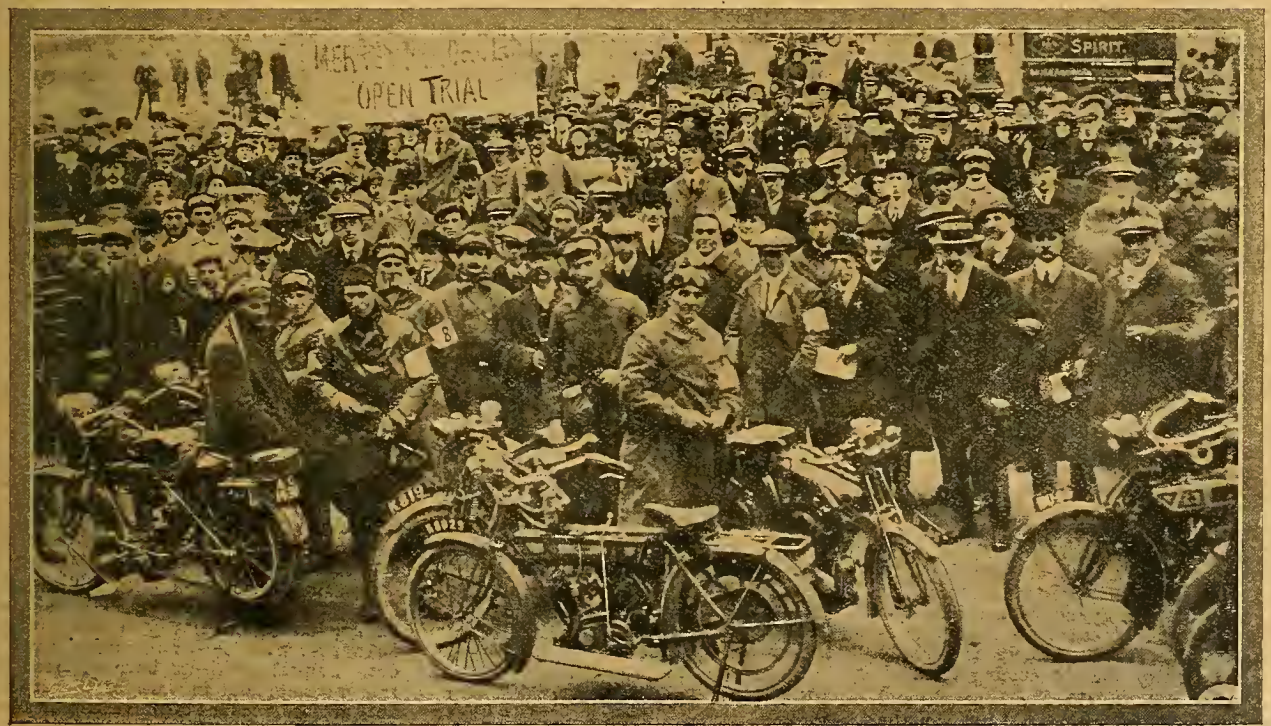
Single or twin-cylinders not exceeding 500 c.c.

O. C. Godfrey (Indian)
C. R. Collier (Matchless)
H. A. Collier (Matchless)
S. A. M. Witham
Blumfield, Ltd. (three machines)
John Gibson
W. H. Bashall (3½ Pat)
J. T. Bashall (3½ Bat)
D. C. Bolton
E. T. Bolton
A. Norton (Norton)
P. Brewster (Norton)
Scott Engineering Co. (two machines)
C. E. Murphy
H. H. Bowen (Dot)
J. W. Woodhouse
I. B. Hart-Davies (Triumph)
C. B. Franklin
P. W. Owen
P. Butler
V. Wilberforce
N. O. Soresby
V. Taylor (3½ Rudge)
W. L. T. Rhys.
Rex Mundy
Percy Johnson
E. B. Ware
J. Alexander, jun. (Indian)
S. F. Garrett (Premier)
H. C. Mills

JUNIOR RACE.

Single or twin-cylinders not exceeding 350 c.c.

P. J. Evans
C. R. Collier (Matchless)
H. A. Collier (Matchless)
F. W. Applebee
J. W. Woodhouse
W. H. Bashall (2¾ Humber)
J. P. Patterson
P. W. Owen (Zenith)
V. Wilberforce
A. E. Woodman (2¾ Humber)
J. H. Watson
V. Taylor
Rex Mundy
Percy Johnson
E. B. Ware
H. Huckle (Enfield)
H. H. Bowen (Humber)



At th finish of the Mersey M.C. Twenty-four Hours Reliability Trial at 8 p.m. on Saturday last.

CURRENT CHAT

TIME TO LIGHT LAMPS.

May	9th ...	8.32 p.m.
,,	11th ...	8.36 ,,
,,	13th ...	8.39 ,,
,,	15th ...	8.42 ,,

Aston Track Race Meeting.

Rain interfered with the motor cycle races arranged by the Sutton Coldfield A.C. at the Aston track last Saturday, and the meeting was postponed until next Saturday.

A.C.U. One Day Trial.

Lionel E. Cass, whose 4½ h.p. three-speed Quadrant gained a first-class certificate in the above trial, asks us to point out that he was inadvertently billed in the programme as Leslie Cass.

Bristol B. and M.C. Hill-climb.

Miss M. Hind asks us to mention that the Rex she rode at the Bristol B. and M.C. climb is a 6 h.p. The old 5 h.p. machine, which she only uses for touring, has an open frame, whereas the 6 h.p. has a special drop frame, which was illustrated in *The Motor Cycle* on February 29th last

Racing in New Zealand.

Triumph machines had quite a tea party, as de Rosier would have called it, at the New Zealand beach races which were held at Warrington Beach. Four events were decided, and the first man in each case was a Triumph rider, the results being as follows:

Two Miles Open Handicap.—W. Jackson (3½ h.p. Triumph).

One Mile Scratch Race (private owners).—A. McDougall (3½ h.p. Triumph).

One Mile Scratch Race (trade).—W. Jackson (3½ h.p. Triumph).

Two Miles Relay Race.—A. Ansell and A. McDougall, both on Triumphs, tied for first place.

The Team Trial.

The following additional clubs have sent in their entries for the M.C.C. team trial, bringing the present total up to twenty-one: Derby and District, Essex M.C., Motor Cycling Club, Sutton Coldfield and Mid-Warwickshire, Northamptonshire, Norwich and District, North Middlesex, and Wolverhampton. Entries must be sent to Mr. F. J. Jenkins, trials hon. sec., 35, Loveday Road, Ealing, W., by June 1st, or by additional fee June 8th. Last year there were twenty competing teams, so that there is already one more entry for the coming trial.

A new club in the Scarborough and District M.C. is raising a team for the M.C.C. Team Trial for *The Motor Cycle* Challenge Cup, on June 15th.

Racing at Brooklands.

There will be two motor cycle events at the B.A.R.C. meeting on Whit-Monday, the 27th inst., viz., handicaps for all classes of machines over distances of 5¾ and 8½ miles.

English-Dutch Reliability Trial.

The matter of selecting a representative British team to compete against the team of Dutch motor cyclists in the International Reliability Trial on August Bank Holiday has been taken up enthusiastically by the different motor cycle clubs throughout the country. On going to press seventeen club committees had made their selection, and the voting for the respective competitors was as follows:

PRIVATE OWNERS.

Class A.—Geoffrey Smith 16, C. Maurice Down 12, F. A. Hardy 7, F. C. Wasley 6, J. C. Bennett Mitchell 6, and H. M. Carter 3.

Class B.—Vernon Taylor 15, Fred Dover 13, E. Lester 7, Seymour Smith 6, A. E. Uffleman 5, and R. Cussons 3.

Class C.—W. Cooper 14, C. W. Wilson 10, W. O. Oldman 9, H. C. Few 8, Gordon B. McKechnie 6, and Horatio Wallis 2.

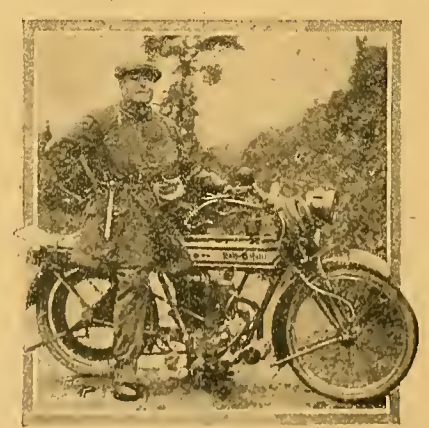
TRADE TEAM.

Class A.—W. W. Douglas 12, R. Holloway 11, R. G. Mundy 8, S. Wright 6, H. V. Colver 5, H. Graham Dixon 5, and J. S. Holroyd 4.

Class B.—W. F. Newsome 15, W. Pratt 13, J. H. Slaughter 8, Geo. Brough 5, F. C. North 4, R. W. Walker 3, and J. Woodhouse 3.

Class C.—Frank Smith 15, F. W. Barnes 14, F. A. Applebee 10, Hugh Gibson 5, W. H. Wells 4, and R. Lord 2.

Club secretaries are reminded that the forms should be returned by Thursday next, the 16th inst.



V. A. Holroyd (Rudge Multi) who, with A. Elson (Triumph) journeyed round the Coventry Club's reliability trial course to erect direction arrows. Observe the bolt with holster for hammer and pouch for nails. The photograph was taken at Saintbury.

SPECIAL FEATURES.

COVENTRY CLUB'S OPEN TRIAL.
(Complete Results.)

MERSEY M.C. 24 HOURS OPEN TRIAL.

MODERN HILL CLIMBS.
(Important Trade Decision.)

Stolen Machine Recovered.

Mr. F. H. Cotterell writes to say that he has recovered his T.T. Triumph, notice of the loss of which was given in *The Motor Cycle*, and that the thief has been arrested.

M.C.C. Members' Hill-climb.

The rendezvous for the M.C.C. members' hill-climb on Saturday is the Lambert Arms, at the foot of Aston Rowant hill, at 1 p.m. The actual hill selected is two or three miles away.

Dublin Reliability Trial.

After examination of the checking sheets, the following results have been announced: 1, F. J. Walker (3½ Rudge) and J. Healy (3½ Rudge), 100 marks (max.) each; 3, J. Brown (3½ Triumph), 99.

Inter-'Varsity Hill-climb.

On Tuesday, the 21st inst., there will be an inter-club hill-climb between the Oxford and Cambridge University Motor Cycle Clubs. The hill has not yet been fixed. There will be six classes: 1.—Lightweight singles and twins up to 350 c.c. 2.—Touring single-cylinder machines. 3.—Touring multi-cylinders up to 1,000 c.c. 4.—Tourist trophy singles (500 c.c.). 5.—Passenger machines up to 1,000 c.c. 6.—All comers. Variable gears will be allowed in all classes. Entries close on the 17th inst., and no late entries will be accepted. Fees: 2s. 6d. per machine. Entries should be sent to Messrs. A. C. Hardy (New College, Oxford) for the Oxford members, and T. M. G. Chapman (Trinity College, Cambridge) for the Cambridge members.

Road Improvements at Gerrard's Cross.

Motorists are fully aware of the dangerous nature of the cross roads at Gerrard's Cross, where the roads from Amersham, Uxbridge, Slough, and Beaconsfield respectively all converge. The danger has long been realised by the local authorities, and some time ago the Road Board granted a sum of money as a contribution towards the cost of effecting an improvement at one of the corners by setting back the hedge, substituting an open iron fence, and opening out the corner, but, unfortunately, local difficulties have arisen which have prevented this work being carried out. Several accidents have occurred at this crossing, and in view of the urgent need for some means of preventing further accidents the R.A.C. is now arranging to erect two of its special danger signs.

Arthur Moorhouse Memorial Fund.

Mr. Vandyk, a member of the M.C.C., has offered an enlarged framed photograph of Mr. Moorhouse to be hung in the A.C.U. premises.

A.C.U. Judges.

Motor cyclists who feel themselves eligible to act as judges in motor cycle competitions may send in their names to the A.C.U. secretary, Mr. T. W. Loughborough, 89, Pall Mall, S.W., when they will receive the consideration of the A.C.U. Competitions Committee. No one connected with the trade in any way is qualified to act in this capacity.

Motor Cyclists and Dogs.

Several motor cyclist members of the A.A. and M.U. have recently reported having been worried by dogs addicted to jumping out into the road at passing motor cycles. The A.A. has taken up one such case by communicating with the owner of the dog, which is an old offender, and impressing upon him the necessity for placing some restraint upon his animal.

Cancellation of Registered Numbers.

At Ripon City Court F. F. Topham, vice-captain of Ripon M.C.C., was fined 1s. (14s. costs) for neglecting to notify the authorities when selling a machine and using the same numbers on his new mount. The purchaser also used this number, consequently two machines were running on the road bearing the same identification marks.

Victim of Negligent Driving.

On the 29th ult. at the Feltham Police Court, Honnslow, the driver of the National Motor Cab Co.'s lorry, which ran into V. Olsson on the last day of the M.C.C. Land's End Run, was prosecuted by the police, convicted, and fined £7 or six weeks' imprisonment for not stopping when called upon after the accident occurred. Mr. Olsson, who is in a nursing home at 15, Welbeck Street, W., is progressing favourably. He asks us to point out that he will be glad to see any motor cyclist friends at the above address.

Reliability Trial in France.

The Grand Prix de Champagne, organised by the Touring Moto Club de France and *L'Aero*, of Paris, will be run on June 9th. This competition, which promises to be one of the biggest motor cycling events of the year in France, will be run on a circuit of fifty-four kilometres, to be covered four times. The circuit is situated in the neighbourhood of Reims, the start and finish being near that town. The route is *viâ* Ponchery-sur-Vesle, Savigny-sur-Ardre, Favorolles, Tramerey, Poilly, Sarey, and Pargny-les-Reims. The following classes have been fixed:

1. 300 cm. for single-cylinders.
2. 350 cm. for twins.
3. 500 cm. singles and 650 cm. multi-cylinders.
4. 1,000 cm. for singles and multi-cylinders.

Entries should be sent to the offices of *L'Aero*, 23, Boulevard des Italiens, Paris. It is hoped that a team of English riders will enter for this competition, which promises to be one of the most interesting ever organised in France.

FUTURE EVENTS

May 11.—B.M.C.R.C. Race Meeting.
„ 16.—Taunton and District M.C.C. Open Hill-climb.
„ 18.—North West London M.C.C. Passenger Trial to Coventry and back.
„ 18.—Streatham and District M.C.C. Open Speed Trial.
„ 18.—Birmingham M.C.C. Open Cyclecar Reliability Trial.
„ 18.—Bradford M.C.C. Annual Open Hill-climb.
„ 18.—Sutton Coldfield and Mid-Warwickshire A.C. Open Amateur Hill-climb.
June 15.—M.C.C. TEAM TRIAL.

Military Motor Cyclists.

The North Midland Divisional Telegraph Company Royal Engineers are in need of several motor cyclists. Any local riders living near Stoke-on-Trent, who are anxious to enlist, should communicate with Lieut. E. T. Bolton, North Midland Division R.E., Lightoaks, Oakamoor, N. Staffs.

The Motor Cycle Union of Ireland.

The Motor Cycle Union of Ireland is about to enter into an agreement with the Auto Cycle Union, so that members of the governing body visiting the Emerald Isle may enjoy the privileges of the M.C.U.I., and members of the M.C.U.I., on a visit to England, may enjoy the advantages offered by the A.C.U.

North-west London Passenger Trials.

The A.C.U. decision in regard to the suggestion of the North-west London M.C.C. to run its passenger trials on the 18th inst. from London to Coventry and Coventry to London, both ways simultaneously, has met with refusal, as it contravenes a rule with regard to passing more than twice on one day through the same town.

Motor Cycles in South Africa.

We read in the *British and South African Export Gazette* that motor cycles have become very popular in the Transvaal. There are over 1,000 in use in Johannesburg, and about 500 more along the Reef. For this district machines should have a clearance of eight inches.

The A.C.U. Silencer Trials.

Messrs. F. E. Baker (F. E. Baker, Ltd.), C. W. Hathaway (Triumph Cycle Co., Ltd.), and John V. Pugh (Rudge-Whitworth, Ltd.) have been selected by the Manufacturers' Union to represent them at a conference between the A.C.U. and Manufacturers' Union in connection with the silencer trials.

Jake de Rosier.

We deeply regret to inform our readers that Jake de Rosier, who was injured on the Los Angeles track, California, will probably never be able to ride a motor cycle again. He hopes, if he recovers, that he may be able to engage in the motor cycle business either here or in America.

Le Mans Automobile Meeting.

The above important French meeting is to be held May 26th-27th and will comprise events for motor cycles. The organisers, the Automobile Club de Sarthe et L'Ouest, recognising the fact that if they wish to secure English entries, the cylinder dimensions of the machines must be the same as for the British Tourist Trophy Races, have altered the maximum cylinder dimensions for the three classes to 250 c.c., 350 c.c., and 500 c.c. The passenger class is open to sidecars and tricars fitted with any size of engine. £400 in prizes will be awarded at this meeting, and the entry fee for motor cycle, sidecar or tricar is twenty francs, which should be sent to the secretary of the A.C. de Sarthe et L'Ouest, Le Mans, France.



In England we are striving to get motor cyclists to join the Territorials as scouts or despatch riders; in Paris every motor cyclist who owns a machine of 3 h.p. or over is compelled by law to register his machine for military purposes. Our photograph shows motor cyclists being registered last week at Paris

Speed and Reliability Trials in Ireland.

Speed Trials on Magilligan Strand.

A SERIES of open speed trials was promoted by the M.C.U.I. at Magilligan Strand, Londonderry, on Saturday last. The afternoon was most favourable, and the sand so firm as almost to resemble a cement surface. Three events, viz., a four miles scratch for engines not exceeding 600 c.c., a ten miles, and fifty miles handicap, comprised the programme. The scratch event was decided on a straightaway course, and the other events on a 2½ miles out and home route. A number of cross-Channel riders competed. In the four miles scratch a field



Saturday's speed trials at Magilligan Strand. W. W. Douglas (2¾ h.p. Douglas) after winning the ten miles race.

of eleven turned out, and the men got away in a bunch. I. Thompson (3½ h.p. B.S.A.) won comfortably from J. Bailie (3½ h.p. B.S.A.), their respective times being 4m. 26⅕s. and 4m. 41⅕s.

Fifteen started in the ten miles handicap. J. Stewart (2¾ h.p. Douglas) was penalised seven minutes through being late at the starting post. W. Douglas (2m.) made the most of his handicap, and at half distance was leading by half a mile. For the tape he was hard pushed by C. R. Martin, 3½ h.p. Triumph (50s.), but managed to maintain his lead by one second. G. E. Murphy, who was on scratch, was travelling the fastest of the three when crossing the tape. Altogether this was an excellently judged handicap. Result:

		Time.
1.	W. W. Douglas (2¾ h.p. Douglas) ...	13m. 46⅖s.
2.	C. R. Martin (3½ h.p. Triumph) ...	11m. 57⅖s.
3.	C. E. Murphy (3½ h.p. Triumph) ...	11m. 59⅖s.

For the fifty miles fifteen started, and great interest was manifested by the large crowd of spectators. Starts were conceded the lightweights up to 121m. J. Stewart (2¾ h.p. Douglas), off the limit, led throughout, though his margin was gradually reduced as the race progressed. W. Douglas retired early with a damaged plug. C. R. Martin rode into second place, but when going strong had to stop and change a plug, and F. C. North went ahead of him. The final rush for the tape was brimful of excitement as Stewart just gained a victory by one-fifth of a second, the placings being:

	Handicap.	Time.
J. Stewart (2¾ h.p. Douglas)	12½m. ...	76m. 26⅗s.
F. C. North (3½ h.p. Ariel)	25s. ...	64m. 21⅘s.
C. Martin (3½ h.p. Triumph)	50s. ...	67m. 37s.

The winner of the fifty miles was awarded the handsome cup presented by Rudge-Whitworth, Ltd.

Dublin and District M.C.C. Reliability Trial.

The open reliability trial of the Dublin and District M.C.C. on Saturday last attracted an entry of twenty-four riders, and of these twenty came to the post and were despatched at minute intervals from three o'clock.

The course for the most part lay in Co. Wicklow, and covered some exceedingly hilly country. It ran from Dublin to Bray, thence through the Glen of the Downs to Ashford, between which point and the summit of Ballymacrae Hill there was a non-stop control. From Ballymacrae the course ran to Laragh, and then along the military road by Drumgoff and Aughavanagh to Aughrim, returning by Woodenbridge, Rathdrum, and Newtownmountkennedy, and Bray to the starting point. The distance was approximately 100 miles, and the customary conditions as to legal limit speed were enforced. There were surprise controls at Aughavanagh and Rathdrum. The ascent of Ballymacrae Hill was the severest part of the trial, and five of the riders failed to make clean ascents. A feature of the competition was the way the Enfield sidecar took the climb. It came up at an exceedingly fast pace, and actually passed several of the singles on the ascent. It subsequently retired from the competition under circumstances that do credit to Mr. Weir, the driver. Descending the sharp hill to Aughavanagh he came across Sparling, who had got a nasty fall by striking one of the many watercourses on the road, and as he was not able to continue, Mr. Weir took his machine, while his passenger, Mr. F. A. Wallen, drove the injured rider in the sidecar to Aughrim, where he got medical attention. He remained at Woodenbridge for the night, but was able to return to Dublin on Sunday.

Eleven of the twenty competitors completed the course in time to give them a chance in the final placings, which will not be known until the secret checking controls are examined. R. Dumphy was a minute too early, but the following were exactly on schedule time, viz., T. J. Dumphy (Triumph), G. Roche (Rover), T. D. Rollins (Rover), J. P. Orvill (Douglas), W. J. Towell (Rudge), J. Browne (Triumph), T. E. Greene (Rudge), J. Healy (Rudge), P. Hurse (Rudge), and F. J. Walker (Rudge). Of these Hurse, Green, Orvill, and Towell were amongst the failures at Ballymacrae.



Dublin and District M.C.C. Reliability Trial to Aughrim and back on Saturday. S. E. Greene (3½ h.p. T.T. Rudge) leaving Donnybrook.

Glasgow M.C.C. Open Hill-climb.

AS usual, the Glasgow M.C.C. opened the Scottish season with its open climb. This took place on Saturday last on a Renfrewshire hill near Howwood. The hill was not severe as regards gradient, but a double bend at the stiffest part provided an extremely severe test, and eliminated nearly half the competitors. Those who took the curve too fast hit the dust, while the nervous ones who took it too slowly knocked their engines to a standstill. The best times were made by those who took the corners cautiously. The electric timing apparatus gave some little tronble during the afternoon, so that the start was made somewhat late. Two runs were allowed, the fastest counting for the formula, which had been simplified this year by eliminating the gear factor, leaving merely $\frac{\text{Weight}}{\text{Cubic capacity} \times \text{time}^{1.5}}$

In the lightweight class there was no doubt of the superiority of the Douglas ridden by A. H. Alexander, although McKechnie on the 2¼ h.p. Levis made quite a good climb. The tourist class was the most popular, and some fine riding was done, a Rudge driven by a well-known Glasgow amateur, W. Hood, making fastest time and also scoring on formula. A. G. MacLennan on a clutch Triumph made second best time, and D. S. Alexander on a 3½ h.p. Kerry-Abingdon was third.

Strange to say, the times in the Tourist Trophy class were slow compared with those made in the full touring class. D. Alexander (Kerry-Abingdon) making fastest time, but being beaten on formula by Anoll Duncan's Rudge, which carried about 40 lbs. of lead beneath the crank case and had the carburetter elaborately adjusted.

A. H. Alexander on one of the new 6 h.p. Rexes with dropped top tube made fastest time in the multi-cylinder class. J. R. Alexander was second by ⅕s. in this class on his 7 h.p. Indian, but beat everybody on time in the passenger class, although carrying three passengers to add weight and to keep the machine down at the corners.

The complete results were as follow :

CLASS I.—Lightweights under 350 c.c.

	Rider and machine.	Weight.	Capacity.	Time M.	Time S.	Fig. of merit.
1.	A. H. Alexander (2¾ Douglas) ...	307	340		43⅘	310
2.	T. L. Rankine (2½ Singer) ...	296	335		52⅕	233
	G. B. McKechnie (2¼ Levis) ..	—	269	1	48⅘	—

CLASS II.—Touring machines under 500 c.c.

1.	W. Hood (3½ Rudge)	361	499		40	286
2.	A. G. MacLennan (3½ Triumph)	347	493		41	265
3.	G. W. Orr (3½ Ariel)	392	482		47⅕	252

CLASS III.—Tourist Trophy models.

1.	F. Anoil Duncan (3½ Rudge) ...	406	493		44⅖	275
2.	M. Gany (3½ Triumph)	—	499		—	219
3.	A. G. MacLennan (3½ Triumph)	347	499		48⅕	203

CLASS IV.—Multi-cylinders over 500 c.c.

1.	— Alexander (5 Indian)	361	535		39⅗	229
2.	J. R. Alexander (7 Indian) ...	421	994		35⅘	193
3.	A. H. Alexander (6 Rex)	357	896		35⅗	183

CLASS V.—Passenger machines.

1.	G. W. Orr (3½ Ariel)	647	482	1	6⅗	247
2.	J. R. Alexander (7 Indian) ...	947	994		56⅗	224
3.	Ben Paterson (5 Clyno)	681	658	1	0	220

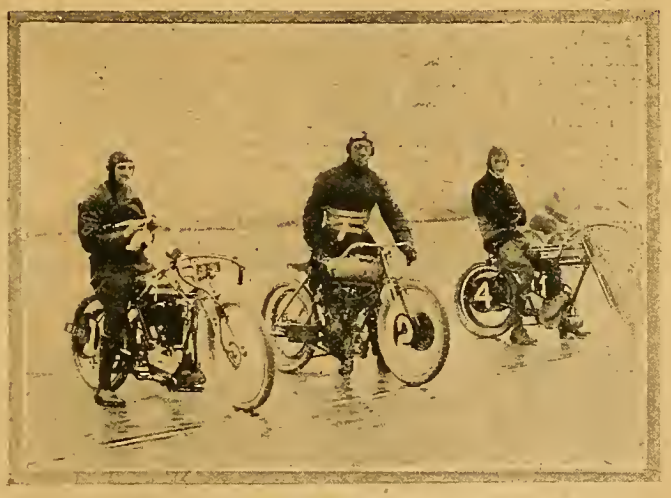
Racing at Brooklands.

THE rain spoiled the second 1912 Brooklands race meeting. It had been raining fairly steadily all day in town, and although three races in all were run off, the meeting had finally to be abandoned By reason of the weather the attendance was by no means good. The only motor cycle race to be run was the Seventh Short Handicap. The start was at the fork, which the machines passed once and then entered the straight. Prizes. The entrant of the winner to receive 8 sovs., the entrant of the second 4 sovs., and the entrant of the third 2 sovs. or cups at option.

Shaw made a good start, but his machine misfired rather badly, and later his belt came off. Slatter stopped just after his engine had begun to fire and got away badly. Competitors passed the fork in the following order: Slatter, Campbell, Stanley, Axford, Elce, Ware, and Stanhope Spencer. Axford (Martin-Jap) won easily. His mount was a smart-looking machine, finished in mauve, fitted with a 76 ×54.5 mm. twin Jap overhead valve engine, Amac carburetter, and Hutchinson tyres. The speed was 58½ m.p.h. Result :

	Rider and machine.	Bore and stroke.	c.c.	Start. M.	Start. S.
1.	S. R. Axford (2 Martin)	76×54.5	498	0	54
2.	G. E. Stanley (1 Singer) ...	69×80	294	1	20
3.	M. Campbell (1 Triumph) ...	85×88	499	1	24
	W. Stanhope Spencer (1 Rudge)	85×88	499	0	38
	W. H. Elce (1 Rudge)	85×88	499	0	44
	N. D. Slatter (1 Alcyon) ...	62×82	247	2	10
	E. B. Ware (1 Rudge)	85×88	499	0	58
	D. Lavender (1 Triumph) ...	85×88	499	1	24
	H. D. Shaw (2 Zenith)	90×77.5	998	scratch	
	G. Griffith (1 Alcyon)	62×82	247	2	10
	J. Cocker (1 Singer)	85×88	499	0	54
	K. Yano (2 Bat)	85×88	998	0	12

Shaw finished with the maximum hand of his speedometer showing what appeared to be 10 m.p.h. over 80, which was the limit of the scale, so he must have travelled well at the outset. He had fitted a neat foot control to his oil pump. It will be seen by the results that Stanley's small Singer was in excellent form. M. Campbell was leading till he entered the straight, and then his engine stopped through the carburetter being starved. He also competed in the May Private Competitors' Car Race. After the third race the meeting was suspended, and was eventually abandoned.



H. D. Shaw (Zenith), K. Yano, a Japanese rider of a two-cylinder Bat-Ja , and W. S. Spencer (Rudge) at the starting line.

A TOUR OF THE RUDGE WORKS.

At the invitation of Mr. Tideswell, manager of the advertising department, we joined a party of the Leicester M. C.C. in their tour of the Rudge works, and spent an interesting and instructive afternoon watching the manufacture of every part of a motor cycle on the latest and most approved lines. During our inspection we saw 170 motor cycles in various stages of completion. Great interest was evinced in many of the processes, notably in the engine assembling. It is wonderful what a lot of work there is to be done even in the manufacture of a spoke, and how quickly it is accomplished by modern machinery. Both the quantity and quality of the productions greatly impressed the visitors, who expressed themselves as highly delighted with their afternoon's tour. When we left thirty had signed the visitors' book, including several ladies.

Coventry Club's Open Reliability Trial.

Nine severe hills included. Rain renders conditions most arduous.

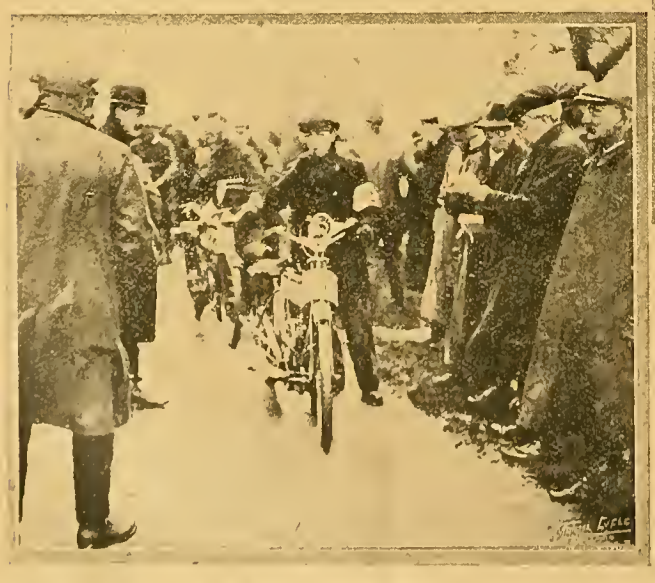


Some of the competitors and spectators assembled on the Kenilworth Road at the start.

OF the sixty-three entrants for the above trial, which took place on Saturday last, fifty-three duly started, and it can be said at once that they will never forget their experiences. The recent spell of fine weather gave place to rain, which came down with discomforting persistency throughout the day. It will be remembered that the course selected was to be kept secret, and the evening before the trial a meeting of competitors and officials was called, when the route was divulged and programmes handed round, and any questions which competitors desired to ask were answered. The meeting was well attended.

The route was very severe, probably more severe than any course ever selected for a reliability trial. Support is given to this surmise by the fact that only eight accomplished non-stop runs. Competitors described the run as a continuous hill-climb. We reproduce on the next page a map of the route, and the marking of such an intricate course was naturally no light task. On Friday a car load of officials journeyed over the course and erected arrows at every turn, and in the early hours of Saturday Messrs. V. A. Holroyd and A. Elson, with fireman's belts containing hammer and nails, and route cards strapped to their motor cycles, preceded the competitors round the course to verify the positions of the arrows. Despite these precautions some competitors went off the route, and it can only be supposed that the incessant rain soddened the cardboard, or maliciously disposed persons removed the arrows.

There were three ladies in the competition—Miss N. Hongh, who was riding a two-speed Douglas, Mrs. Simpson, the Rudge rider, and Miss L. Berend, who bestrode a Regal-Precision sidecar, but all were unfortunate.



Mr. F. T. Bidlake starting H. Groaves (2¾ h.p. Enfield). Mr. M. J. Schulte, the club president, is at the extreme right.



D. Elson (3½ h.p. Triumph) coming up Offchurch Hill in the rain.

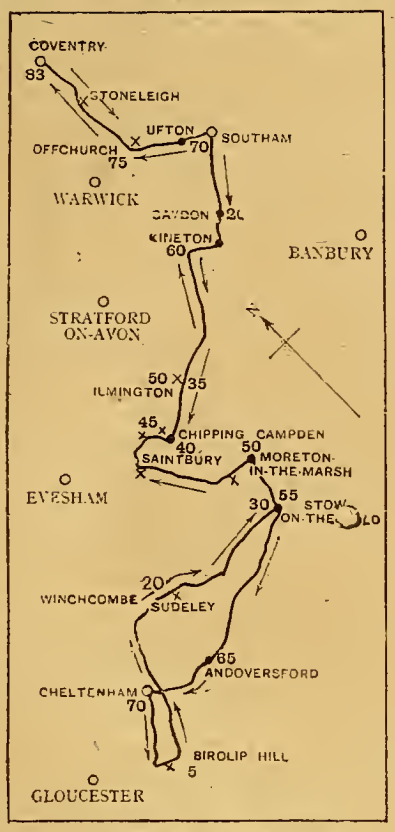
A Prompt Start.

A prompt start was made at 9 a.m., Alec Walsgrove (2¾ Hazlewood) leading off the ball. There were eight competitors in the lightweight class, of whom six started. All got away well, though J. R. Haswell (3½ Triumph) and Miss Berend (Regal Precision) had difficulty in pushing their sidecars off the mark. The brothers Collier, with their powerful Matchless sidecars, shot off the line in fine style, though H. A., not noticing the very first twist to the right, attempted to turn too quickly, and in so doing, wrenched the rear tyre off the rim. He returned to the starting point, and after repairs, went on again. There was an abundance of officials on the course, which was absolutely necessary in view of the dozen or so rises all having single figure gradients, and on which the competitors were observed but not timed.

Coventry Club's Open Reliability Trial.—

The Route.

The route led through Stoneleigh up the famous Coventry test hill, to Offchurch, where is a steep short pitch with a bad approach, then to Ufton, a long gradual climb. From Southam to Gaydon presented no difficulty, and just beyond Kineton the Fosse road was joined and continued upon till Ilmington village was reached; the hill beyond is severe, with a maximum gradient of about 1 in 6. On through Chipping Campden and up to the summit of Weston Hill (another of the Cotswold acclivities), and, descending the other side, the Stratford-Broadway road was joined at Weston-sub-Edge and followed to the turn for Saintbury, now a well-known ascent. Arrived at the top, the main Worcester - London road was traversed through Bourton-on-the-Hill to Moreton-in-the-Marsh and Stow-on-the-Wold. At the last-named bleak Cotswold town a sharp right turn led to Andoversford and Cheltenham. The hills on this section were not exceptionally steep, but the road undulates severely nearly all the way, and on a wet day the ascent to the inn at Naunton is trying to under-powered machines. After Cheltenham a detour embraced the notorious Birdlip, then, skirting the Cheltenham suburbs, Cleeve Hill was ascended, then came a drop into Winchcombe. A sharp right turn in the centre of Winchcombe brought the competitors to Sudeley Hill, a new find of the Coventry Club and one of the worst ascents on to the Cotswolds. It is considered by many in the trial to be much worse than Birdlip. The rise commences at the gates of Sudeley Castle and gradually climbs up for about a mile, then follows a long section of single figure gradient culminating in a pitch of 1 in 6 for a considerable distance, and, just when one thinks the top is reached, a bend to the right discloses another long stiff ascent. The top is nearly 1,000 feet above sea level, and the total rise is about 700 feet. The surface is oolite, mostly rough, and holding and treacherous when wet. From Sudeley the outward route was joined at Stow-on-the-Wold, and, with the exception of the hill in Bourton, the ascent from Weston-sub-Edge, the rise to Ilmington, and one or two short steep banks on the Fosse, the remainder was easy.



THE COVENTRY TRIALS ROUTE.
× denotes a steep hill.

Nine Severe Hills

The following figures show the heights in feet above sea level reached during the trial: Ilmington, 600 feet; Camp *via* Saintbury, 864 feet; Birdlip, 940 feet; and Sudeley, 982 feet. The valley roads averaged about 200 feet above sea level. In all, nine severe hills were climbed, and a number of lesser ascents.

Troubles commenced early. Sproston (Rudge) came to a standstill on Stoneleigh, which was in a very greasy condition owing to the overhanging trees, and a few miles further on C. B. Collier (Matchless) had to replace a broken valve spring. S. Wright (Humber) and S. Crawley (Triumph) experienced punctures, and were dogged throughout the day by the puncture fiend.

On Ilmington Hill.

A secret check was arranged on the outward and homeward runs, and Ilmington was the spot selected by Mr. F. Straight, the timekeeper. Ilmington Hill is a severe climb almost on a par with Edge Hill. Notably good climbs were made by A. Walsgrove (2¾ Hazlewood, three-speed), Miss Hough (2¾ Douglas, two-speed), T. Pollock (3½ James), W. D. Sonth (3½ T.T. Rudge), Vernon Taylor (3½ Rudge), P. Moss (3½ Premier, three-speed), S. Crawley (3½ Triumph), R. Viggers (3½ Macbeth-Precision), J. H. Pountney (3½ Rover, three-speed), and K. Clark (3½ Corah, three-speed). Of the passenger machines nearly all the big twins made light work of the hill, but special mention is due to J. R. Haswell (3½ Triumph, two-speed sc.), who changed down about halfway up and romped up the remainder on his low gear; S. Wright (3½ Humber two-speed sc.) was troubled with a slipping belt, but he got up, although slowly towards the top; A. D. Arter (3½ James sc.) also made an excellent climb. A few failures occurred, but it is only fair to point out that the first twenty riders had a much drier road than the remainder, as the rain fell faster during the second half of the climb. The following lost marks: T. Carpenter (2½ Calcott) stopped, H. A. Crane (3½ Hercules) stopped, H. G. Hill (2½ Calcott) pedalled, C. Q. Roberts (3½ Rover) pedalled, Miss Berend (3½ Regal-Precision sc.) stopped, and J. W. F. Crouch (6 C.M.C.) stopped road wheels.

Saintbury was the next hill of note, and at this point nine competitors were added to the list of the fallen. H. G. Hill ran alongside his Calcott, but T. Carpenter came to a standstill, as did H. A. Crane, who charged a wall at the foot of the hill. Others who stopped were: Martin Anderson (Swift), R. Viggers (Macbeth), S. Wright (Humber), J. W. F. Crouch, and Miss Berend. C. T. Newsome (Rover) was the victim of bad luck, as he had surmounted the steepest portion when his belt jumped off the pulleys. Miss Hough (Douglas) made as good a climb as any competitor in the trial, and, we believe, climbed the whole of the ascent on top gear. All those who showed up conspicuously on Ilmington reproduced their form on Saintbury Hill, and in fact on most of the hills until Sudeley was reached, of which more anon. Mrs. Simpson (Rudge) made a very good climb. The passenger machines were climbing the hills well. Collier Bros. had plenty of power in reserve. Tessier (Bat) and Hill (Indian) also did well. G. E. Cuffe (7 h.p. Indian sidecar) skidded round the bend, his sister, who occupied the sidecar, lying across the carrier to keep the rear wheel on the ground.

The course was now of an undulating nature, but with no really notable ascent before the luncheon stop, which



Vernon Taylor (3½ h.p. Rudge) on Ilmington Hill. He was one of the eight competitors to accomplish a non-stop run.

Coventry Club's Open Reliability Trial.—

was at Cheltenham, lunch being taken at the Queen's Hotel. On arrival here, A. D. Arter reported that his machine momentarily caught fire, necessitating a dismount. Competitors fully appreciated the hour and a half allowed, seeing that they were in most cases drenched. S. Wright (Humber sidecar) arrived late, and reported five punctures. F. Smith (Clyno) was also late, due to a broken chain. H. S. Morgan withdrew his runabout owing to tyre troubles. The spacious hotel yard presented a busy scene as the first man was despatched at 2.10 p.m. in the direction of Birdlip. The arrangements and marshalling hereabouts were well carried out by Messrs. F. Corbett and H. A. Cooke.

Birdlip and Sudeley Hills.

The road surface was extremely heavy, but, nevertheless, the majority of the survivors made clean and sure ascents of this noted rise over the Cotswolds, the variably-geared machines winding their way up steadily but surely, the single-speeders racing up the hill ten to fifteen miles an hour faster

Cleeve Hill, Cheltenham, was the cause of much engine knocking, but this ascent was nothing to what followed soon after Winchcombe was reached. The Coventry and Warwickshire Motor Club officials managed to unearth a hill which, we predict, will prove a stumbling block to motor cyclists for years to come. We refer to Sudeley Hill, the gradient of which is estimated to be 1 in 5 to 1 in 6 for about a quarter of a mile, although the hill itself is over a mile long. Sixteen came to grief at this point, including a number who had hitherto experienced no trouble. As it was the last hill of note, these competitors are especially to be sympathised with. Some notably good climbs were made. W. F. Newsome (free engine Triumph) appeared to travel as fast as anyone, but about midway up the hill he skidded for about ten yards, narrowly missing *The Motor Cycle* photographer, who threw his camera into the air and backed into the ditch. Newsome kept his engine running, and managed to correct the skid in wonderful fashion. S. Russell Cooke (Rudge) and Cyril Bailey (Rudge) assisted with their feet. and P W. Pumphrey (Arno) reached the very crest of the hill when he was obliged to jump off and run alongside for a few yards. Roy Walker (New Hudson) made a sure climb, as did Mrs. Simpson (Rudge), H. Millidge (Premier), H. G. Dixon (New Hudson), and L. Newey (three-speed Ariel). M. H. Simpson (Rudge) skidded into the ditch. T. Pollock (single-geared James) had a clean record up to this point, and would have climbed Sudeley but for the fact that his machine skidded three times, and each time he had to lift



CLIMBING SUDELEY HILL, WHICH UNSEATED 16 COMPETITORS.
A. D. Arter (3½ h.p. two-speed James and canoelet sidecar), who successfully climbed all hills.

the valve to correct the skid, and in so doing nearly stopped his machine. J. Slaughter (L.M.C.) resorted to his low gear and went up at a comfortable pace.

Of the sidecars the two Matchless machines climbed the hill without difficulty, although beaten for speed by S. T. Tessier (Bat). Alan Hill and G. E. Cuffe (7 h.p. Indian sidecars) spoilt their otherwise clean records. Undoubtedly the most meritorious ascent was by J. R. Haswell, a popular Coventry Club member, on a two-speed 3½ h.p. Triumph sidecar. His engine certainly had very little in hand on Sudeley, but few expected that a 500 c.c. machine with sidecar and passenger could account for such a hill on the run. A. Douglas Arter (James) was the only other successful single-cylinder sidecar user to climb Sudeley

The Crouch carette appeared to have sufficient power to climb the hill, but insufficient weight on the back wheel, which necessitated the passenger walking to the summit. Fred Hill (A.C. sociable) made a gallant attempt, but the gradient was too much for his engine, although he got within a stone's throw of the top. The G.W.K. driven by C. M. Kellier was anxiously awaited, but a competitor reported that he had passed this machine hung up by the roadside.

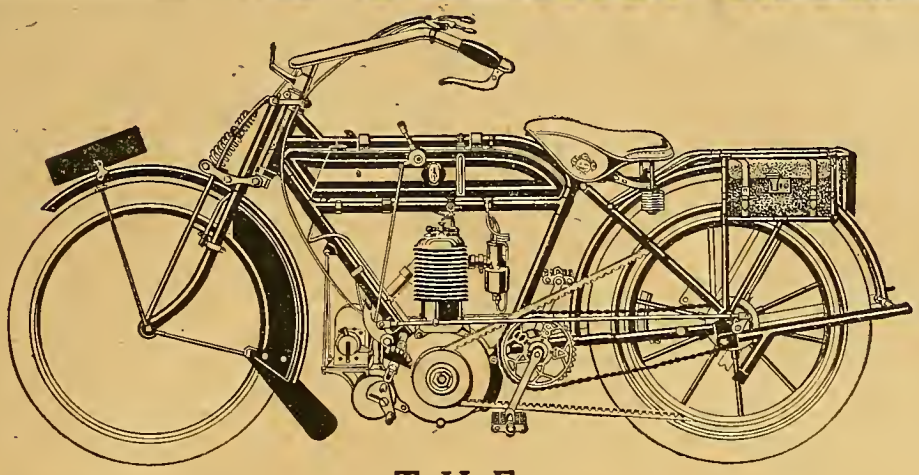
The Most Severe Trial.

By this time competitors were unanimous in the opinion that the Coventry Club's trial was as severe as any ever held, but the hill-climbing was not yet over, for Guiting Grange and Weston-sub-Edge further taxed the hill-climbing powers of the competitors' machines. Perhaps the hardest piece of luck in the whole trial occurred at this point. Alec Walsgrove, who had successfully accounted for all hills on his 2¾ h.p. Hazlewood, was brought to a standstill at Weston due to a stone jamming the brake on the front wheel. Still, he was the only competitor in the lightweight class to finish to time, which is indeed a meritorious performance considering the arduous nature of the course and the weather and road conditions.

From Chipping Campden homewards was comparatively easy, except for occasional trouble in finding the course, due to the absence of arrows. G. E. Cuffe (Indian) damaged his sidecar wheel owing to running on a flat tyre, so he detached the sidecar, put his passenger in Alan Hill's sidecar, and continued solus. Frank Smith (Clyno) broke a chain and retired, as also did Fred Hill (A.C.) A few miles from home H. Millidge (Premier) and H. Newey (Ariel) ran out of petrol, and were delayed considerably in obtaining fresh supplies. The same trouble befell C. Q. Roberts (Rover), whose first stop was due to a broken belt.



R. Viggers (3½ h.p. three-speed Macbeth-Precision) climbing Ilmington Hill.



THE

B.S.A MOTOR BICYCLE

"Perfect in Every Part"

has attained its foremost position by sheer superiority, which is being constantly demonstrated in reliability trials, hill climbs, and on the road. This is due to the quality of B.S.A. workmanship and material. Each part is severely tested at every stage of manufacture. As in all B.S.A. productions

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A.C.U. One Day Trial, April 24th. 1912.

A Private Owner on a B.S.A. Motor Bicycle made a non-stop run, and was awarded a SILVER MEDAL and FIRST-CLASS CERTIFICATE.

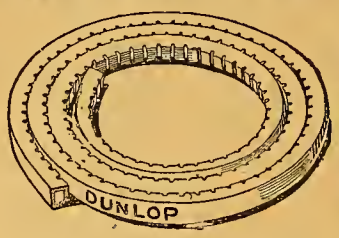
Model A -	With fixed engine and fitted with pedalling gear	**£50 0 0**
Model B -	With free engine and double cone clutch in back hub; pedal-starting from saddle	**£56 10 0**
Model C -	With free engine and two-speed gear in back hub; gear operating by foot lever, which can be locked by control lever on handlebar ..	**£60 0 0**
Model D -	Tourist Trophy; without pedalling gear, fitted with 26" x 2" Dunlop tyres, semi-racing handlebar; wheelbase 3¼" shorter than standard ..	**£48 10 0**

Write now for a copy of the new book of the B.S.A. Motor Bicycle.

THE BIRMINGHAM SMALL ARMS CO., LTD.,
13, Small Heath, - - - - - - - - - BIRMINGHAM.

A Motor Cyclist's advice—"Always use B.S.A. Cylinder Oil for Motor Cycles."

An inventive Scot who built his own cyclecar narrates his experience of the

DUNLOP  BELT DRIVE

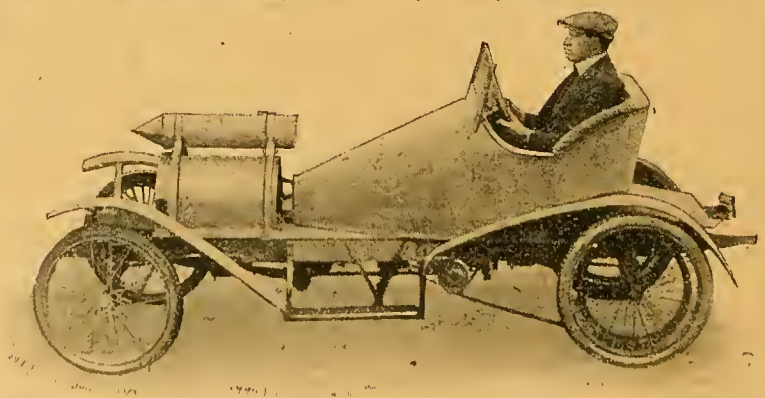
Mr. ROBERT SMELLIE, a West-of-Scotland motorist, recently designed and built for himself a cyclecar which has attracted much attention, as it is employed for the conveyance of goods as well as passengers. In this car, which is driven by a 5-6 h.p. air-cooled engine, no fan is used, and there is no differential; it has two speeds and reverse, and the transmission is by means of Dunlop motor cycle belts, which have run over 4,000 miles and are still in good condition. Of these belts Mr. Smellie writes in terms of the highest praise; and his views, based on expert knowledge, will be of value to other motor cyclists, particularly to those who look with approving eyes on cyclecars. Writing from "Inchbrae," Easterhouse, Lanarkshire, Mr. Smellie says—

"I have much pleasure in stating that the Dunlop belts have greatly exceeded my expectations. Up to the present—March 30th—they have done over 4,000 miles, and the only wear that is obvious is on the main belt from engine to countershaft. The two belts to the driving wheels are absolutely unscratched, and, as far as I can judge,

I do not see what is to hinder them running 20,000 miles.

This may sound a bit strong, but anyone with any experience whatever, examining the belts at present, would be astonished at their new appearance.

Further, the car is out in all weathers, and meantime the belts have no protection whatever. Needless to say, I wash them carefully after a very muddy run."



THE DUNLOP MOTOR-CYCLE BELT gets through the hardest work without flinching, singly or in combination. In addition to the usual sizes, it is now made in 1⅛in., and the cost is only 3/1d. per foot. The standard lengths are: 7ft. 6in., 8ft., 8ft. 6in., and 9ft. DUNLOP BELT PIERCERS AND BELT FASTENERS should be carried in every wallet.

THE DUNLOP PNEUMATIC TYRE CO., LTD., Aston Cross, BIRMINGHAM; Alma Street, COVENTRY.

BRANCHES—London, Nottingham, Manchester, Newcastle, Bristol, Leeds, Liverpool, Glasgow, Dublin, Belfast.

Coventry Club's Open Reliability Trial.—

J. W. F. Crouch (C.M.C. Carette) finished late, but to him is due the credit for being the only cyclecar competitor to complete the course. The run home was rather a cold one, and this added to the rain, which hardly ever stopped all day, made the majority glad that the test was over.

Official Results and Awards.

The following results were passed by the committee of the Coventry and Warwickshire Motor Club at a meeting held on Monday evening:

CLASS A.—LIGHTWEIGHTS.

		Marks lost.
1.	Alec Walsgrove (2¾ Hazlewood, 3-speed) ...	84
	H. G. Hill (2½ Calcott, 3-speed)	246

MACHINES OVER 350 C.C.

1.	W. F. Newsome (free engine Triumph) ...	9
	J. H. Slaughter (4 L.M.C., 2-speed) ...	18
	A. N. Barrett (3½ Rudge, multi)	21
	Roy W. Walker (3½ New Hudson, 3-speed)	21
	J. H. Pountney (3½ Rover, 3-speed) ...	24
	Vernon Taylor (3½ Rudge, multi)	32

The above six competitors made non-stop runs.

CLASS B.—SIDECARS.

1.	J. R. Haswell (3½ Triumph, 2-speed) ...	4
	R. E. Guest (8 Matchless, 2-speed)	15

The above competitors made non-stop runs.

CLASS C.—CYCLECARS.

1.	J. W. F. Crouch (C.M.C.-Carette)	224

Souvenirs will be awarded to all who made non-stop runs.

SPECIAL AWARDS.

Best performance by a lady.—Mrs. Simpson (3½ Rudge).

Best performance by a Coventry Club member.—J. R. Haswell (3½ Triumph sc.)

Best performance on a single-geared machine.—W. F. Newsome (3½ Triumph).

Best performance by a private owner.—R. E. Guest (8 Matchless sc.)

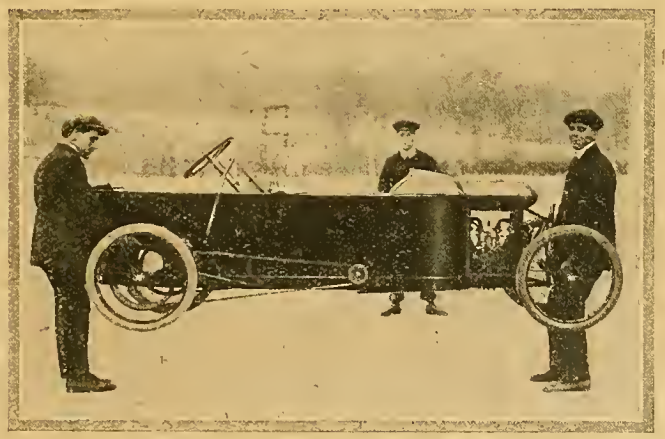
Those who survived the course in addition to the above-mentioned, but did not make non-stop runs, were:

CLASS A.	Marks lost.
S. A. Rowlandson (3½ Rudge)	26
L. Newey (3½ Ariel)	27
H. Millidge (3½ I.T. Premier)	35
C. Q. Roberts (3½ Rover, 3-speed)	52
R. H. Viggers (3½ Macbeth-Precision, 3-speed)	57
C. T. Newsome (3½ Rover, 3-speed)	64
S. Russell Cooke (3½ T.T. Rudge)	72
P.-W. Pumphrey (3½ Arno)	90
K. Clark (3½ Corah)	90
S. Crawley (3½ Rover)	95
W. D. South (3½ T.T. Rudge)	98
A. J. Sproston (3½ Rudge, multi)	137
W. G. Blatch (3½ Rudge)	147
David Elson (3½ Triumph)	147
SIDECARS.	
S. T. Tessier (7-8 Bat, 2-speed)	57
C. R. Collier (8 Matchless)	61
H. A. Collier (8 Matchless)	63
B. Alan Hill (7 Indian, 2-speed)	87
A. D. Arter (3½ James)	104
G. E. Cuffe (7 Indian)	120

The Cyclecar Hour Record.

The first cyclecar to establish the hour record was the 8 h.p. Bedelia. The particular car entered was absolutely standard and so, Mr. L. N. Palmer assured us, quite devoid of any special tuning. The engine is a Bourbeau-Devaux, 80 × 100 mm., and with the cylinders set at 90°. The firing was by magneto, driven by chain off the main shaft, and running at half engine speed, while the distributer was driven off the half-time shaft. The engine was fitted with automatic inlet valves. The lubricant used was commercial castor oil, and Michelin tyres, 650 × 60, were fitted.

A start was made at 4.42 last Friday afternoon. The engine started misfiring at once, and continued to do so throughout the trial. This was due, we were informed, to the G. and A. carburetter, which was of the two-jet chamber type, the float chamber being in the middle. This carburetter, it may be remembered, is supplied with a series of balls which are lifted off their seating by means of the suction of the engine, thus admitting air in correct proportion to the engine speed, and consequently to the amount of petrol drawn through. The uneven surface on the track caused these balls to joggle up and down and to upset the mixture. The first lap was covered at the rate of 46.81 miles an hour, and the third, which was the fastest, was covered at 46.89 miles an hour. At the 8th lap the speed dropped to 41.45 miles an hour. After that the speed improved, in the tenth lap, to 42.75, falling to 41.84 m.p.h. in the last lap. The total distance covered was 43 miles 1,034 yards. H. Ward, the driver, had rather a poor time, as the deck chair seat gave way, and he had to sit on the bar to which the cloth portion is attached.



The 8 h.p. Bedelia driven by H. Ward (at the rear of the vehicle) which established an hour record of 43 miles 1,034 yards at Brooklands last week.

The Arthur Moorhouse Memorial Fund.

The following additional donations to the above fund have been sent in since the list was published last week.

All subscriptions should be sent to the secretary, Mr. T. W. Loughborough, 89, Pall Mall, S.W.

	£	s.	d.
Amount previously subscribed ...	93	9	0
Per Mr. Percy Butler:			
Motor Union Insurance Co.	10	10	0
Temple Press, Ltd.	7	7	0
Coventry and Warwickshire M.C....	5	5	0
Motor Cycling Club	5	5	0
British Motor Cycle Racing Club ...	5	5	0
Per Mr. Otto Thomas:			
James R. Nisbet	3	3	0
J. W. G. Brooker	1	1	0
Per Mr. W. Pratt:			
V. Olsson ...	5	5	0
H. H. Collier ...	2	2	0
C. Lester ...	2	2	0
Kempshall Tyre Co.	2	2	0
Tom Foy ...	1	1	0
W. Montgomery	1	1	0
C. R. Collier ...	1	1	0
H. A. Collier ...	1	1	0
A. G. Reynolds	1	1	0
A. V. Ebblewhite	1	1	0
Hal. Hill	2	12	6
Rex Motor Mfg. Co.	2	2	0
Edward Lycett ...	2	2	0
Major Lindsay Lloyd	1	1	0
Edward Pond ...	1	1	0
Miss Muriel Pond	1	1	0
J. H. Slaughter ...	1	1	0
Continental Tyre Co.	1	1	0
E. S. Dickson ...	1	1	0
M. S. Alexander ...	1	1	0
Cambridge U.M.C.C.	1	1	0
J. Wadham ..		10	6
Miss Burke ...		5	0

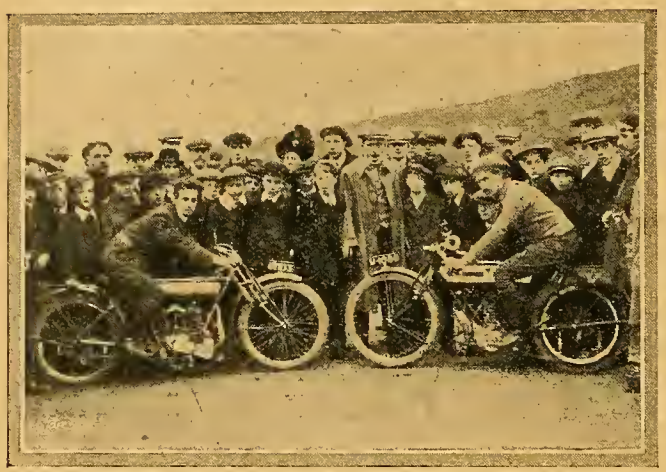
CLUB NEWS.

Redditch and District M.C.C.

A speed-judging competition to Kidderminster was held on the 27th ult. Results: 1, J. Fisher, 1m. 20s. slow; 2, H. Malins, 1m. 25s. slow; 3, G. White, 1m. 56s. slow.

Leeds M.C.C.

A hill-climb took place at Beulah Hill on the 4th inst. Some close finishes were witnessed, especially so in the semi-finals and final, the results of which were:



The winning riders and machines at the conclusion of the Leeds M.C.C. Hill-climb at Beulah. R. T. Cawthorne (6 h.p. chain-driven J.A.P.) and C. H. Benn (T.T. Triumph). The latter won.

Semi-finals: C. H. Benn (3½ h.p. T.T. Triumph) beat Jim Mackay (2½ h.p. Singer). Cawthorne (6 h.p. J.A.P.) beat Hawks (3½ h.p. multi Rudge).

Final: C. H. Benn beat Cawthorne.

Lowestoft M.C.C.

All motor cyclists who would like to become members of a motor cycle club, which is in course of formation, are invited to communicate with Mr. A. Elkington, 11, Royal Avenue, Lowestoft.

Canterbury and District M.C.C.

The results of the hill-climb held at Petham on the 25th ult. are as follows. The formula used in all classes was $\frac{W}{C \times T^2}$, as recommended by *The Motor Cycle*, twins having one-tenth of their capacity deducted. T.T. machines were handicapped +1⅝s.:

CLASS I.—Any type of machine, including Pavillet Cup Competition.

	Time.	Result on formula.
1. H. Pavillet (2½ Singer)	+18⅝s. ...	694
2. S. Timson (3½ T.T. Rudge) ...	+12⅝s. ...	682
3. B. Martin (3½ T.T. Rudge) ...	+13 1/10s. ...	631

CLASS II.—Single-cylinders under 560 c.c. of later pattern than 1910.

1. H. Pavillet (2½ Singer)	+16 1/10s. ...	781
2. S. Timson (3½ T.T. Rudge) ...	+12s. ...	702
3. B. Martin (3½ T.T. Rudge) ...	+11 9/10s. ...	678

CLASS III.—Any type of machine, 1910 pattern or earlier.

1. C. Dawson (3½ Triumph, 1908) ...	+17⅛s. ...	512
2. W. Wass (3½ Triumph, 1909) ...	+22½s. ...	382
3. A. Letchworth (7 V.S., 1909) ...	+15½s. ...	378

CLASS IV.—Any type of machine, for members who have never won a prize in a club hill-climb.

1. Lieut. H. Simonds, R.N. (3½ Trump-Jap)	+12 7/10s. ...	652
2. B. Martin (3½ T.T. Rudge) ...	+13 3/10s. ...	623
3. C. Dawson (3½ Triumph, 1908) ...	+17⅝s. ...	493

CLASS V.—Open to club members of the trade, any machine.

1. H. Pavillet (2½ Singer)	+14 9/10s. ...	835
2. G. Crump (3½ Rudge)	+12 1/10s. ...	653
3. J. Poxon (3½ Bradbury)	+14 1/10s. ...	582

No rider takes more than one first and one second.

A Motor Cycle Club for Clapton.

All motor cyclists are invited to attend a meeting which is to be held this evening at Messrs. Delange, 83, Chatsworth Road, Clapton, at nine o'clock.

Taunton and District M.C.C.

A fifty mile reliability trial was held on the 25th ult. in two sections, each of which had to be non-stop and covered at the rate of 19 m.p.h. Results: 1, E. R. Norton (2¾ Enfield), non-stop, total error 17s.; 2, W. Phillips (3½ Triumph), non-stop, total error 20s.; 3, E. Hancock (3½ Premier), non-stop, total error 25s.; 4, T. G. Crump (3½ Ariel tricycle), non-stop, total error 26s.

Western District M.C. (London).

The reliability trial to Bath and back for the Smart Cup was successfully run off on the 5th inst. Subject to confirmation by the committee, the results are: 1st, W. Ritchie (5 h.p. N.S.U.), non-stop, 14s. slow; 2nd, F. Ritchie (8 h.p. Matchless), non-stop 30.2s. slow. The other competitors did not make non-stop runs. W. Ritchie has won this cup on two previous occasions, and will therefore, if the above are confirmed, win the trophy outright.

Cork and District M.C.C.

Two hill-climbing tests were run off by this club on Wednesday, the 1st inst., at Grange Hill, Ovens. The results were:

Flexibility Test.—Class A: S. R. Hosford (2¾ h.p. Enfield), slow, 1m. 35⅖s.; fast, 1m. 5s.; difference, 20s.

Class B.—1, P. A. Egan (3½ h.p. T.T. Bradbury), slow, 2m. 55⅕s.; fast, 43⅕s.; difference, 2m. 12s. 2, H. P. Dobbin (3½ h.p. Triumph), slow, 2m. 18⅖s.; fast, 1m. 38⅕s.; difference, 40⅕s.

Restarting Test.—1, P. A. Egan (3½ h.p. T.T. Bradbury), time 1m. 16⅘s.; 2, J. Atkinson (3½ h.p. Rudge), time 1m. 25⅖s.; 3, J. Healy (3¾ h.p. Premier), time 1m. 26⅘s; 4, S. R. Hosford (2¾ h.p. Enfield), time 1m. 32⅖s.

Sheffield and Hallamshire M.C.C.

A hill-climbing competition was held at Bradfield on Saturday, May 4th. Results:

CLASS I. (lightweights).—1, S. Swift (2¼ h.p. Levis), time 1m. 31⅖s.; 2, A. Parker (2¾ h.p. Douglas), 1m. 34⅖s.

CLASS II. (standard single-cylinder machines).—1, D. Bradbury (3½ h.p. Norton), 44⅘s.; 2, F. Cawood (3½ h.p. Triumph), 55⅗s.; 3, N. Newton (3½ h.p. Rudge), 59⅖s.

The results in Class II. on formula are: 1, D. Bradbury; 2, N. Newton; 3, F. Cawood.

The fastest time of the day was accomplished by D. Bradbury on his 3½ h.p. Norton, 44⅘s. The next fastest was R. Garnett (6 h.p. Matchless), 45⅗s.



Master S. Swift, the smallest rider and machine in the Sheffield and Hallamshire M.C.C. His mount is a 2¼ h.p. Baby Levis. The photograph shows him making fastest time among the lightweights.

Club News.—

Daimler M.C.C.

The following runs have been arranged: May 12th, Lutterworth; May 25th, novelty run.

Hull and East Riding A.C.C.

The first quarterly trial was held on the 27th ult. There were ten starters, and the course was *viâ* Hull, Beverley, York, Malton, Beverley, to Hull, ninety-four miles. There were three water splashes on the road, which was very hilly, and only four competitors survived the entire distance—Emerson (3½ Norton), Pickering (3½ Rudge), Brown (3½ Rudge), and Walton (3½ Rudge).

Sheffield and Hallamshire M.C.C.

A speed-judging competition was held on the 27th ult. The course was from Millhouses to Bakewell, a distance of fourteen miles. Speeds varying from 20 to 14 m.p.h. were set, watches and speedometers being barred. There were seventeen entries, and the results are as follows:

	Rider.	Speed set.	Error.
1.	H. Short	15 m.p.h.	0s.
2.	T. Durant	18 ,, ...	5s.
	S. Brooks	20 ,, ...	5s.
4.	F. Cawood	15 ,, ...	10s.

Derbyshire and North Stafford A.C. (Motor Cycle Section).

A petrol consumption trial took place on Saturday, the 27th ult., and attracted a good number of entries. The ton-miles gallons formula had been adopted, *i.e.*, the greatest number of ton-miles which can be secured for one gallon of fuel. The start was from Repton, and the course lay through some beautiful, picturesque country to Burton, thence to Repton again. This had to be covered twice, making a total distance of twenty miles. Results:

1. N. Sayer (Bradbury) ... ... 24.7 t.m.g.
2. J. Birchenough (Rudge) ... ... 24.3 ..
3. E. Russell (Bradbury) ... ... 22. ,,

Cardiff M.C.

The following classes have been arranged for the inter-club hill-climb on Rhubina Hill, near Cardiff, next Saturday:

Class 1.—For touring lightweight motor cycles whose cylinder capacity does not exceed 350 c.c.

Class 2.—For T.T. lightweight motor cycles (single or twin) whose cylinder capacity does not exceed 350 c.c.

Class 3.—For touring single-cylinder motor cycles whose cylinder capacity does not exceed 560 c.c.

Class 4.—For T.T. single or twin-cylinder motor cycles whose cylinder capacity does not exceed 500 c.c.

Class 5.—For twin-cylinder motor cycles whose capacity is over 480 c.c.

Class 6.—For any motor cycle of unlimited capacity, with sidecar passenger attachments.

Classes 2 and 4 will be decided on time.

Classes 1, 3, 5, and 6, will be decided on the following formula: $\frac{W}{C \times T^2}$ which is that recommended by *The Motor Cycle*.

W = weight in lbs.
C = cubic capacity.
T = time in seconds (squared).

Luton and South Bedfordshire M.C.C.

The hon. secretary of this lately formed club is Mr. R. C. Knight, 68, Dunstable Road, Luton. It has been decided to affiliate to the A.C.U.

Surrey M.C.C.

The team reliability trial on the 15th inst. will take the form of a run of between sixty and seventy miles, starting from Guildford at 3.30 p.m. A halt for tea will be made at the half distance. Entrants will be divided into teams of four, of whom one in each team must drive a passenger machine. So far as possible the teams will represent districts (Guildford, Haslemere, Dorking, etc.) Penalties will be imposed for *(a)* stoppages other than traffic stops, *(b)* bad performances on hills, and *(c)* errors at control stations.

The Brookdale Club, Catford (Motor Section).

The results of the hill-climb at Brasted are as follows:

Handicap.—1, L. W. Fox (Rudge); 2, W. Williams (Bradbury).

Slow Climb, Single Gear.—1, S. Jeffery (B.S.A.); 2, H. Smart (Bradbury).

Slow Climb, Variable Gears.—1, W. Guiver (Rudge multi); 2, W. Plimmer (Douglas two-speed).

Fastest Time.—H. A. Cooper (Bradbury) and J. A. Hoult (Bradbury), dead heat.

North-West London M.C.C.

The twelve hours' open reliability run for cyclecars and sidecars will take place on the 18th inst.

RULES AND REGULATIONS.

Cyclecars may have three or four wheels and may be single or double-seated. Chassis weight must not exceed 6 cwts. unladen, and the total piston displacement of engine must not exceed 1,100 c.c.

Passenger machines must carry two or more persons throughout the entire competition.

The route to Coventry shall be *viâ* Watford, Berkhampstead, Aylesbury, Bicester, Banbury, Sunrising Hill, Ettington, Warwick, and Kenilworth, returning the same way.

The start will take place from Jack Straw's Castle, Hampstead Heath, at 7 a.m.

Any driver who shows himself inconsiderate to other users of the highway shall be subject to disqualification.

South Birmingham M.C.C.

The results of the members' hill-climb at Wenlock on the 27th ult. are as follows:

SINGLE-CYLINDER CLASS.

		Position on formula
1.	J. Slaughter (3½ L.M.C.)	54.9
2.	A. R. Felton (3½ Zenith)	55.0
3.	L. Bees (3½ L.M.C.)	62.1

LIGHTWEIGHTS.

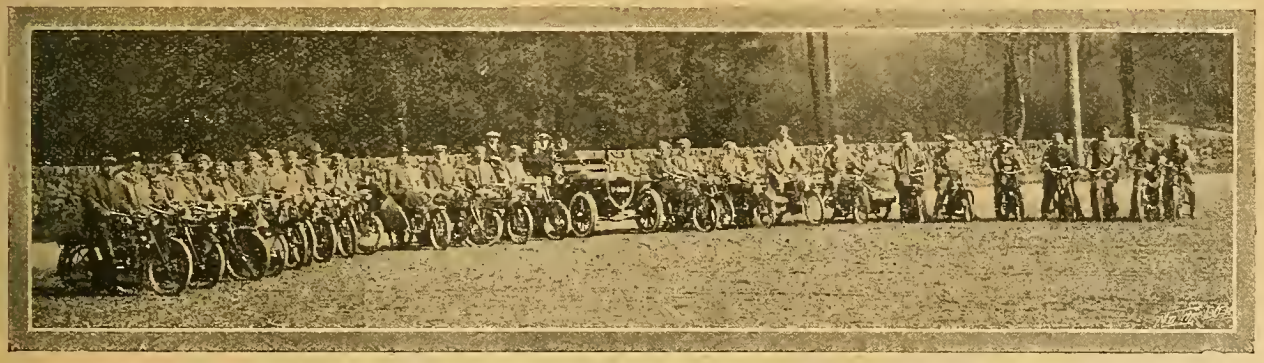
1.	J. J. Woodgate (2½ Singer)	118.1
2.	V. Busby (2¾ Humber)	118.3

PASSENGER CLASS.

1.	J. Woodhouse (3½ Regal)	103.5
2.	A. R. Felton (3½ Zenith)	107.3
3.	J. J. Woodgate (4 Singer)	133.3

Prizes for novices: L. Poole (3½ B.S.A.) and S. Uptor (3½ Allday and sc.)

There were thirty-eight entries.



A NORTH BRITISH CLUB. Group of members of the Hamilton and District M.C.C. at the start of the opening run to Moffat which was held recently, and mentioned in our last issue (see Club News pages).

Questions & Replies



A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

London to Weymouth.

Can yon tell me the road from Cricklewood, N.W. (Gladstone Park), to Weymouth? My chief difficulty is always to get away from London quickly. I have been by Staines, but it takes me a long time to get to that place. Time is the chief object, surface and traffic next. I should be much obliged if you could find a quick route.—T.H.

Your best plan will be to make your way to Willesden Junction, go down Wood Lane to Shepherd's Bush and straight down Hammersmith Broadway, over Hammersmith Bridge, down Castelnau, over Barnes Common, and up Roehampton Lane to Kingston. From Kingston follow the Portsmouth Road to Guildford, and then go *viâ* Farnham, over the Hogs Back, Winchester, Romsey, Ringwood, Wareham, to Weymouth, or Ringwood, Bere Regis, Dorchester, to Weymouth.

When the Exhaust Lifter is Raised.

What happens in the cylinders when the exhaust lifter is raised? I have an 8 h.p. Matchless fitted with a magneto switch, and have had an argument as to whether the mixture does or does not fire with the valves lifted. When freeling down hill or cornering, I close the throttle until the engine just manages to fire, then lift the valves. I quite understand that while the valves are in the act of opening or closing, a weak explosion occurs and possibly burns the valves and seatings a bit if the switch is not on, but the man who argued with me said, "Keep the switch on *all* the time the valves are up." My point is that the mixture does not fire at all with the valves fully raised and the throttle only partly open. I should also like to know what is the proportion of gas and exhaust gas (taken back through the exhaust pipe) when the valves are raised. Of course I know that this will vary with the throttle opening.—J.H.S.

When the exhaust is raised there is, as a rule, no explosion; when the gas does fire, as happens occasionally, you will also get an explosion in the silencer. As there is no compression, the explosion, when it does occur, will be weak and will do no harm. The proportion of gas to exhaust gas will, as you say, vary with the throttle opening; it will also vary with the silencer construction.

Valve Grinding.

(1.) I have a 75 mm. Fafnir engine (3 h.p.) made, I think, about 1905. It runs extremely well, but the spark lever has always to be in a certain position, which is, I think, fully advanced, and if the spark lever is moved the slightest bit it stops firing at once If the plug is taken out it gives an excellent spark at any position of the lever. The ignition is by accumulator and plain coil. Can you give the cause and remedy of this? (2.) Will you please let me know how to grind in a valve, and does the valve-seating also have to be done? What effect does grinding-in have on a valve? (3.) I notice the piston head in my machine has something like $\frac{1}{64}$in. vertical play on the pin which connects it to the connecting rod. Should this be so? (4.) Piston and cylinder get covered with carbon deposit very quickly. Would too frequent oiling cause this?—F.G.

(1.) What you want to do is to overhaul the contact breaker and see if good contact is made in all positions. The contact breaker wants carefully watching, and you must see if at any position there is a poor earth return, or any chance of a short circuit. If spark occurs when plug is removed it does not follow that it will do so under compression. (2.) Full instructions regarding valve grinding are given in "Motor Cycles and How to Manage Them." The effect of grinding in wears down the valve and the seating till they are both a dead fit. It also has the effect of slightly lowering the valve into the seating, and occasionally a little has to be filed off the end of the valve to allow sufficient clearance for the tappet. (3.) The vertical play in the gudgeon pin will have to be seen to soon. You will have to have the connecting rod rebushed. (4.) Excessive lubrication tends to an excess of carbon deposit.

Misfiring at Speed.

I have a 3¼ h.p. Rex with Beehive cylinder, wipe contact, Fuller syntonic coil (new), and Amac 1911 carburetter and a.o.i.v. My trouble is: Engine runs well at low speeds, say up to 15 m.p.h., but over this misses badly, and sometimes stops firing for a few seconds and then goes off again. I have taken down the tank and cleaned it out, overhauled the carburetter, and adjusted the level which is just below the jet. I have had the fibre cam off, trued it up in the lathe, and have rewired all through. The inlet valve opens all right, and the accumulator is fully charged. Good spark at the plug (Sphinx). I use jets Nos. 25 and 32.—W.A.McE.

If the carburetter is the 5 jet type the level should be above the main or controlling jet, so your adjustment would starve the engine at high speed. We should, however, suspect the ignition. (1.) Try the coil with a lighter adjustment, *i.e.*, not screwed down so hard. (2.) Make sure the contact piece in the fibre cam is not loose, and that the blade presses firmly on the ring. There must be no step where the contact joins the fibre or the blade will jump at high speed. (3.) Make sure there is a good earth from the contact breaker. (4.) Inlet spring may be weak, or valve have too great a lift; $\frac{1}{32}$in. to $\frac{5}{32}$in. is plenty.

BRISTOL B. & M.C. HILL-CLIMB AT CLAPTON-IN-GORDANO.
A. P. Maurice (2¼ h.p. Premier) making fast time in Class VIII. for racing singles.



Gears and Horse Power.

(1.) With a standard machine, what speed could be obtained on a level road, and what gear would be required to be used with a 3½ h.p., 5 h.p., and 8 h.p. respectively? (2.) What horse-power would a motor cycle require to be able to do sixty miles per hour on a gradient of 1 in 20 on a calm day? (3.) Is the 3¾ h.p. Premier twin as fast as the single 3½ h.p.? (4.) What is the highest gear that can be used with a clutch satisfactorily.—F.A.S.

(1.) A standard machine will do between 45 and 55 m.p.h. on the level. Gears: 3½ h.p., 4¼ to 1; 5 h.p., 4 to 1; 8 h.p., 3½ to 1 approximately. (2.) The horse-power required for weight-lifting, assuming machine and rider to weigh 350 lbs., would be 2.8, for overcoming tractive resistance 1.5, and wind resistance 5.7. This gives 10 h.p. About 1 h.p. should be allowed for transmission losses. A 6 h.p. twin will produce this power. (3.) About the same. (4.) For starting purposes a low gear is desirable, otherwise the usual gear is suitable.

Low Tension Magneto.

I have an engine off a Singer wheel model motor cycle in nearly new condition, which I am building up into a frame and fitting a pulley for belt drive. I wish to keep the magneto on it, which is of the old rocking armature type. (1.) Can I put it in circuit with a plain coil to make it high tension ignition? If so, how do I wire it up? (2.) I notice that the magneto sparks both on the forward and backward strokes. Should I get two sparks at the plug if a coil is used? If so, how could I prevent it? (3.) Do you think it best to leave the old low tension ignition tappet on as before? If so, where do I connect the small wire coming from the armature? Would it do to fasten it under one of the small screws which hold the cover-plate over the armature in position?—M.W.H.

(1.) We certainly advise you to leave the low tension magneto as it is. The alterations are practically impossible and certainly not worth the trouble and expense. (2.) The two sparks will cause no trouble, as the second spark occurs when it has no effect on the running of the engine. (3.) The only wire from the magneto should be connected to any clean part of the cylinder. It was usually fixed to a screw in the ignition tappet guide.

Inlet Valve Opening.

Having bought a 3½ h.p. a.o.i.v. 80 × 94 mm. Peugeot engine, I should be glad if you would answer the following queries, for, as the engine is small, I should like to get the last ounce of power out of it: (1.) What amount should inlet valve open? (2.) I have three springs for inlet valve: A requires 2¾ lbs. to compress to open valve ⅛in., B 1½ lbs. ditto, C 1¼ lbs. ditto. Which do you think would give the best all-round results, taking into consideration flexibility of running and hill-climbing powers? (3.) Would a mechanically-operated overhead valve (converting the present one to such) be any advantage, and, if so, in what respects? (4.) I have fitted magneto, driving from sprocket on end of exhaust cam. If overhead valve as above is an improvement, how could I operate same? (5.) Supposing the answer to No. 3 to be in the affirmative, when should inlet valve (when converted) open and close, and how much should it open? (6.) I have geared the bicycle about 4½ or 4⅝ to 1; is this about right or not?—E.J.W.

(1.) The inlet valve should lift about $\frac{5}{32}$in. to ¼in. The inlet valve should be just so tight that the valves do not open when shaken fairly violently. (2.) A strong spring is the more efficient, but the weak spring gives better running at slow speeds. You have therefore to seek a compromise. Try B. (3.) A mechanical inlet would probably be an advantage, give better slow running, and need less adjustment. (4.) You will require a separate cam, long tappet rod, and rocker on the cylinder head. (5.) The inlet valve should open about 10° after the induction stroke has commenced, and remain open for 180° of flywheel movement. The opening should be $\frac{3}{16}$in. (6.) The gear is correct.

READER'S REPLY.

Overheating and Worn Exhaust Valve Seating.

May I trespass on your valuable space to help your correspondent "A.E.H.," who wrote on the 25th ult. regarding his difficulty in diagnosing overheating? The same thing happened to me quite recently. After having fitted smaller jets to my carburetter, and altered its level, and tried various other schemes, I was almost giving up hope of finding the cause of the overheating when I noticed that through continual grinding the seating of the exhaust valve was so deep down that the valve was pocketed and was virtually opening late and closing early, hence the great loss of power and overheating. This defect can be remedied by turning or grinding away the edge of this, pocketing up to the actual seating itself, thereby allowing the exhaust gases to escape until the valve is actually down on the seating.—C. W. KERRIDGE.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"W.G.M." (Putney).—5-6 h.p. four-cylinder F.N. Collapsable sidecars.

"P.S." (Levenshulme). — Albion two-speed and free engine hub.



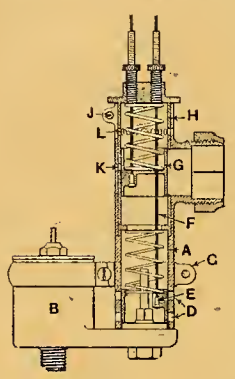
J. Chater Lea, jun. (8 h.p. Chater Lea sidecar), climbing Birdlip Hill in the A.C.U. re-run one day trial. This rider gained a first-class certificate. Birdlip is still regarded as a very severe climb, as evidenced by the crowd which assembled to see the Coventry and Warwickshire M.C. riders climb the hill last Saturday.

Manufacture of Two-piece Valves.

This process of manufacture consists in taking a stem or spindle and dividing its head end into sections; then upsetting, burring, roughening, or otherwise distorting the sections, coating the same with a suitable soldering, brazing, or fluxing material, and casting the valve head therearound.—T. Parker, No. 26,221, 1911.

A Simple Carburetter.

The spray chamber A is secured to the float chamber B by means of the clamp C. The main air intake D is controlled by a piston valve E operated by a Bowden cable F. The throttle valve G is arranged within a ported sleeve H, detachably secured in the chamber B by means of the clip J. When the throttle G is open wide, extra air is admitted through the ports K. Further, when the throttle is lowered beyond the position shown in the drawing, the gas is cut off and pure air is admitted to the engine through the ports L.—J. A. Mackay, No. 9,235, 1911.



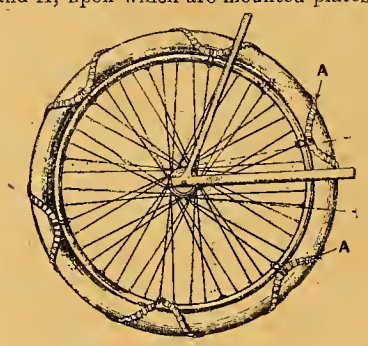
PATENTS

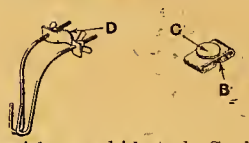
BY

ERIC W. WALFORD, F.C.I.P.A.

A Non-skid Device.

This non-skid device consists of a leather band A, upon which are mounted plates B,

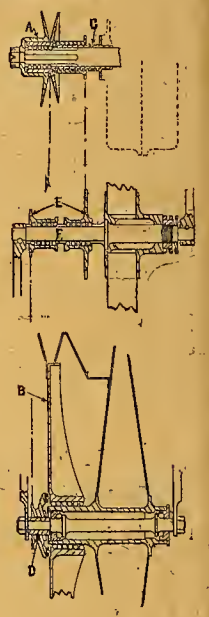




provided with non-skid studs C, the plates being secured by having their ends bent round the leather strap. The strap A is not wrapped round the tyre and rim as is usually the case, but is arranged sinuously over the cover and held in place by detachable and adjustable wire clips D as shown. The objection to devices of this nature is that the wheels revolve too close to the frame.—W. Haseloff, No. 7,438, 1911.

A Variable Pulley Gear.

In this construction the engine pulley A and the rear pulley B are of the adjustable flange type, being operated by screw thread devices C D. The belt is therefore constantly in alignment. Simultaneous operation of both belts is effected by means of a pair of chain wheels E mounted upon the crank axle F, and connected to the front and rear pulleys respectively by chains, not shown. The pulleys and operating mechanism are arranged so as to always rotate, but yet be free to move laterally upon their shafts.—L. W. Wetherèd, No. 28,559, 1910.



Change of Address.

Sabella Cars, Ltd., have removed from 33, Southampton Street, Strand, W.C., to 110, Albany Street, N.W.

The Shops Act.

H. Taylor and Co., 21a, Store Street, Tottenham Court Road, W., inform us that, notwithstanding the Shops Act, their showrooms will be open on Saturdays till 3 p.m.

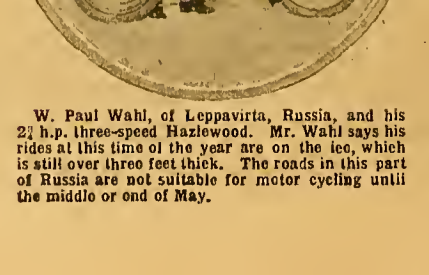
Maintenance of Motor Cars.

The above title is the one selected by Mr. Eric W. Walford for a practical handbook dealing with the upkeep of motor vehicles. The work is not intended so much for skilled mechanics as owner-drivers who do their own adjustments and minor repairs. There are a large number of motor cyclists who are also owners or drivers of cars, and to them this book should be specially useful. The contents include chapters on cleaning, adjustment of the engine, ignition, carburetter, steering, brakes, transmission, and timing. There are also several pages devoted to the fitting and repair of tyre covers and air tubes, and the maintenance of the water-cooling system. The chapter entitled "Diagnosis" mentions practically every possible trouble or fault which is likely to occur, describes the symptoms, and mentions the remedy. In cases where any doubt might arise in connection with the description, a line illustration is appended to render the meaning more distinct. The work comprises 143 pages of clearly printed type and numerous illustrations, and can be obtained from *The Motor Cycle* Offices, 20, Tudor Street, E.C., price 2s. 6d. net.

SCRAPLETS

Gradual Payment System.

The Wincycle Trading Co., Ltd., 106, Great Saffron Hill, E.C., have made a speciality for the last twenty-one years of the gradual payment system in connection with pedal cycles. Needless to say, they have a thorough knowledge of this branch and supply their motor cycles and sidecars on the same terms.



W. Paul Wahl, of Leppavirta, Russia, and his 2¾ h.p. three-speed Hazlewood. Mr. Wahl says his rides at this time of the year are on the ice, which is still over three feet thick. The roads in this part of Russia are not suitable for motor cycling until the middle or end of May.

Catalogues Received.

The Ivy is a machine known to all our readers on which H. C. Newman has scored so many successes. The latest catalogue shows that machines of various powers are supplied, as well as both twin and single-cylinder types.

A speciality is the Newman force feed central air jet which is screwed in place of the ordinary jet in the carburetter. It is said that his partly accounts for the great efficiency of Newman's machine in hill-climbs.

The latest catalogue issued by Bowden Wire, Ltd., Pratt Street, Camden Town, N.W., describes and illustrates the various types of Bowden wire fittings. Our readers will find the hints on fitting Bowden wire mechanism to be extremely useful, as this is a point which is very often not properly understood.

Turco specialities are well-known to motor cyclists. We are in receipt of the latest catalogue published by the Union Rubber Co., of Manchester. This deals with repair outfits, solution, motor cycle tyres of all types and sizes, repair bands, puncture-proof bands for placing inside the cover, tyre gaiters, patches, and rubber clothing.

Ward and Goldstone, Springfield Lane, Salford, Manchester, specialise in electrical fittings and their catalogue naturally deals with the following items of interest to motor cyclists: Charging batteries, ignition coils, dry batteries, volt and ampèremeters, the well-known Voltalite electric lamp, inspection and garage lamps, sparking plugs, terminals, celluloid cement, and othe electrical accessories.

DO YOU WANT BARGAINS?

And at
Manchester Street, Liverpool.

RELIANCE

CITY CYCLE AND MOTOR HOUSE,

THE GUARANTEE IS IN THE NAME.

Snow Hill, Birmingham.

Everything for the Motor Car.

POUNDS WE SAVE YOU

Everything for the Motor Cycle

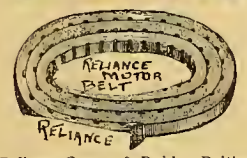


SPARKING PLUGS
from 6d. each.
"Bosch" Sparking Plugs, 3/6 each.
"Bluemel's," 3/6 ea.
"Simms" .. 3/3 ea.
"Lodge" .. 4/- ea.
"Lodge" Double Pole Plug, 8/- ea.

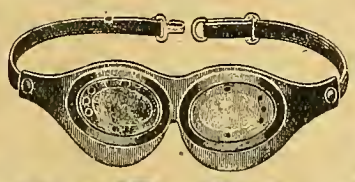
MOTOR CYCLE LAMP AND GENERATORS.



Reliance No. 210, for lightweight motor cycles, with separate generator .. 6/11
No. 240, self-contained 8/11
No. 212, large size, for heavyweight motor cycles, with generator and mirror lens 14/11
No. 220, large size, for heavyweight motor cycles, with hood and lens, 17/11
Trade Lists Free.



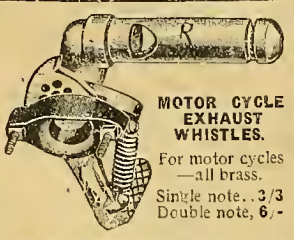
Reliance Canvas & Rubber Belting
⅝" 1/2 ¾" 1/4 ⅞" 1/7 1" 1/11
Reliance Leather Belting.
⅝" 1/2 ¾" 1/4 ⅞" 1/7 1" 1/11
We also supply Lyso, Stanley-Dermatine, Continental, and Rawido Belts at lowest prices.



RELIANCE ALL RUBBER.
Best quality rubber..per pair, 1/-
Ditto, with spare glasses ,, 1/3
LA SVELTE GOGGLE.
Best quality 3/11
Cheaper quality.. .. .. 2/11
Brown Leather Mask.. .. 9d.
Special ,, ,, .. 11½d.
Superior quality in case .. 1/3
No. 2005. Goggle with aluminium sides.. .. .. .. pair, 1/3

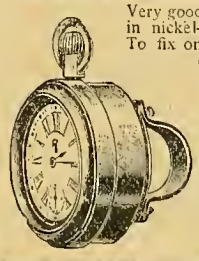


BELT DRILLS.
Reliance Belt Drill, 10½d.
,, ,, Punch, 1/-
Best quality Drill, 1/3
,, ,, Punch, 1/3
All above fit any belt.
Abingdon 'King Dick' Belt Punch .. } 1/6
Ditto Belt Drill.. }



MOTOR CYCLE EXHAUST WHISTLES.
For motor cycles —all brass.
Single note.. 3/3
Double note, 6/-

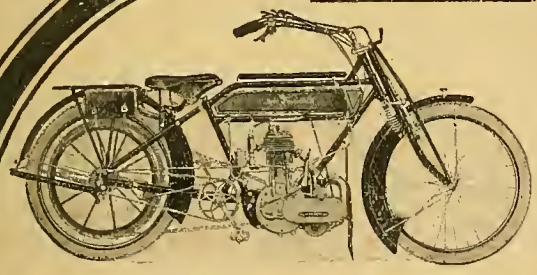
MOTOR CYCLE WATCH & HOLDER
Very good timekeeper, in nickel-plated case. To fix on handle-bar, 4/9



TYRES, LAMPS, HORNS, SIDECARS, MAGNETOS, TANKS, FRAMES, FITTINGS, HUBS, &c.

New Imperial

Send for Art Catalogue, which you will find immensely interesting.



Big 4½ h.p.; 3½ h.p.; 2½ h.p.

SEND FOR FULL CATALOGUE.

Key-notes of "New Imperial" Motors are:—

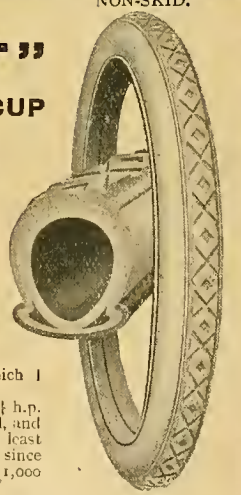
ACCURACY
SIMPLICITY
RELIABILITY.

Made by the Makers of the famous "Girpiex" Cycles.

NEW IMPERIAL CYCLES, Ltd.,
BIRMINGHAM.

NON-SKID.

THE "BURNETT" PATENT SUCTION-CUP TYRE.



TESTIMONIAL.

30, Upper Sandhurst Road,
Brislington,
BRISTOL.
March 27th, 1912.

Messrs. The Burnett Motor Tyre Co.,
Melksham, Wilts.

Dear Sirs,—It is with much pleasure that I express to you my satisfaction of excellent results I have had from one of your Special 3-ply Motor Cycle Tyres, which I purchased from you in 1910.

I fitted tyre to the rear wheel of my 4½ h.p. single-cylinder motor cycle, sidecar attached, and ran about 3,000 miles without having the least bit of trouble, not even a puncture. I have since removed tyre to wheel of sidecar, and after 1,000 miles is still in excellent condition.

It is also interesting to note that during the time tyre was running on rear wheel of motor cycle, I used no less than three tyres of well-known makes on front wheel, which caused me no little inconvenience.

I may also add that I found tyre excellent as a non-skid during bad weather and far superior to any other make of tyre which I have ever tried.

Yours truly, W. H. WHITE.

	3-Ply.	Tubes.
26 × 2	33/- ..	8/6
26 × 2½	34/6 ..	9/6
26 × 2½	36/- ..	10/6

Carriage Paid. Less 10% Cash with Order.

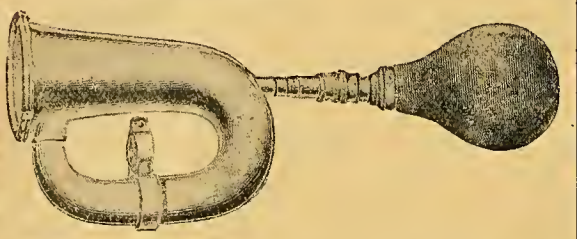
THE BURNETT MOTOR TYRE CO.,
MELKSHAM, WILTS.

Tel.: 33, Melksham. Tel. Address: "*VACUUM, MELKSHAM.*"

In answering these advertisements it is desirable to mention "The Motor Cycle."

Rotax Clarionette

English Made.



A handsome, sweet toned horn for your Motor Cycle.

A special line of 16in. nickel-plated horn. Made expressly for heavyweight cycles. With adjustable handle-bar clip and best quality rubber bulb. Fitted with cap to exclude dust. Easily cleaned. Clear penetrating note free from harshness. To be had through all agents. Ask always for Rotax accessories—reliable — — fittings at a reasonable price. — —

18/9

Rotax Motor Accessories Co.,
43/45, Great Eastern Street, London, E.C'

MOSELEY
GROOVED



Extra strong beads, 3-ply heavy canvas

36/- per cover, 26 × 2¼ beaded.

FROM ALL AGENTS.

Catalogue free from the mak rs—

DAVID MOSELEY & SONS, LTD.,
Ardwick, MANCHESTER.

TEL. NO. 377.
TELEGRAMS TOM CANN LESTER



12/6 & 18/6.

NO MORE GOOD TYRES ON THE SCRAP HEAP.

Send your old tyres to us. Bursts and broken beads repaired by our Patent Process cannot fail.

Agents for
LEVIS, 2-stroke.
RUDGE-WHITWORTH.
TRUMP-J.A.P.
MOTOSACOCHE.
CASH OR CREDIT.
DELIVERY TO-DAY.

Write for Particulars.

WORKS APPLEGATE STREET LEICESTER

TOM CANN, Ltd., LEICESTER.

2 MORE FIRSTS

2 MORE FIRSTS

2
MORE FIRSTS
WON ON

STERNOL

The King of

MOTOR OILS.

A regular user of "Sternol" secured two more Firsts at Brooklands, on April 20th, S. F. Tessier winning both the Flying Kilometre and Flying Mile.

Sample free.

BETTER THAN CASTOR OIL

STERNOL,
56, Royal London House, Finsbury Square, LONDON, E.C.

BETTER THAN CASTOR OIL

E.H.G.



A simple quick Puncture Repair

Read this twice. A cursory glance might fail to adequately convey the simplicity of the Parsons Method of puncture repair.

Parsons Rapid Repair Kit mends punctures in one minute. Four simple operations complete the job. 1. Take out damaged part of tube. 2. Punch hole clean. 3. Stretch and insert a plug. 4. Compress—and the repair is made.

Once compressed, the plug can never leak or come adrift; neither can it harm the tyre.

Complete Kit, consisting of piercing tool, stretcher, closing pliers, and 12 plugs weighs 1 lb., measures 7in. x 4in. (fits the pocket) and costs

15/-

Write for descriptive booklet.

PARSONS Rapid Repair Kit.

PARSONS NON-SKID CO., LTD.,
23, Store Street, London, W.C.,
and 237, Deansgate, Manchester.

FOR DEFERRED PAYMENTS
¼ down and balance in 12 monthly equal payments.

HARRODS

THE BEST HOUSE for MOTOR CYCLES

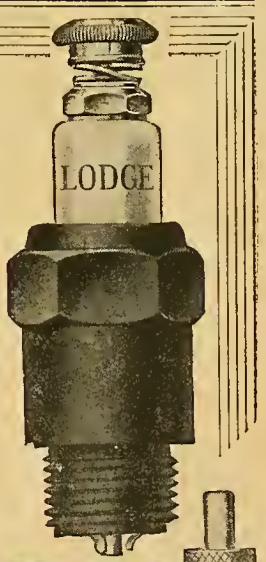
SIDECARS OR RUNABOUTS

Sole Concessionnaires of the celebrated
MORGAN RUNABOUTS.
Stockists of G.W.K. MOTORETTE, SABELLA, ROLLO, etc., etc.

Finest motor cycle showrooms in London.

NOTE ADDRESS:
HARRODS LTD.
(Richard Burbidge, Managing Director),
Brompton Road, LONDON, S.W.

Why buy expensive plugs, when the best plugs in the world only cost 4/- each?



THE FAMOUS

LODGE PLUGS

Obtainable everywhere,
English made.
LODGE BROS., & CO., Dept. E, New St. **BIRMINGHAM.**

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII.
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION IX.
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

WAUCHOPE'S

OFFER LARGEST CHOICE AT LOWEST COST.



Always from 200 to 300 Motor Cycles on hand ready for immediate delivery. A stock that is always changing, always full of fresh features, and new bargains in latest 1912 famous makes and genuine second-hand machines thoroughly overhauled ready for immediate satisfactory service.

TO-DAY'S LIST INCLUDES:

5395.	3½ h.p. 1911 Standard **TRIUMPH** ..	£37 0
5396.	4-5 h.p. 1912 T.T. **MATCHLESS** ..	£80 0
5401.	3½ h.p. **BROWN**	£16 10
5403.	3½ h.p. 1910 **KERRY-ABINGDON** ..	£27 10
5406.	7 h.p. J.A.P. engine and Bat frame	£15 0
5411.	3½ h.p. 1911 2-speed **HUMBER**	£40 0
	2¾ h.p. 1911 2-speed **ENFIELD**	£40 0
	3½ h.p. 1911 2-speed **HUMBER** and sidecar	£45 0
	4 h.p. 1911 Free-engine **INDIAN** ..	£36 0
	3½ h.p. 1912 Free-engine **BRADBURY**	£47 10
4393.	3½ h.p. 1911 **CHASE**	£27 10
	2 h.p. 1911 **HUMBER**	£26 10
4942.	2½ h.p. 1911 **MOTOSACOCHE**	£28 0
5341.	3½ h.p. 1908 2-speed **P. and M.**	£25 0
4832.	2¾ h.p. 1910 **DOUGLAS**	£26 10
5303.	2¾ h.p. **DE DION** pattern	£11 10
4226.	3½ h.p. 1909 **MIDGET** Bicar	£20 0
5332.	5-6 h.p. 1911 4-cylinder **F.N.**	£33 10
5341.	3½ h.p. 1908 **P. and M.**	£25 0
5357.	3½ h.p. 1912 T.T. **RUDGE**	40 Gns
5358.	2¾ h.p. 1912 2-speed **ROYAL ENFIELD**	£47 0
5361.	3½ h.p. 1911 2-speed **P. and M.**	£48 0
5368.	6 h.p. 1911 **ZENITH** and Sidecar..	£55 0
5381.	3½ h.p. 1911 2-speed **P. and M.**	£48 0
5384.	3½ h.p. 1910 Standard **TRIUMPH** ..	£33 10
5391.	3½ h.p. 1911 2-speed **HUMBER**	£37 0
5300.	2 h.p. 1910 **MOTO-REVE**	£18 10
5302.	3½ h.p. **QUADRANT**	£15 0
5306.	3½ h.p. 1910 **P. & M.**	£42 0
5210.	3½ h.p. 1908 **MINERVA**	£16 10
5332.	5-6 h.p. 1911 4-cyl. **F.N.**	£33 10
5124.	3½ h.p. 1909 **P. & M.**	£35 0
5192.	3½ h.p. 1911 2-speed **HUMBER** ..	£37 10
5193.	5-6 h.p. 4-cyl. **F.N.** and Sidecar ..	£20 0
5195.	2 h.p. 1908 **MOTO-REVE**	£17 10
5216.	2¾ h.p. 1911 Standard **DOUGLAS** ..	£23 0
5222.	2 h.p. 1910 **MOTO-REVE**	£17 10
5225.	3½ h.p. 1911 2-speed **HUMBER** ..	£37 10
5230.	3½ h.p. 1909 **TRIUMPH**	£28 0
5237.	2¾ h.p. 1911 Standard **DOUGLAS** ..	£28 0
5242.	3½ h.p. 1910 **LINCOLN-ELK**	£22 0
5246.	3½ h.p. **ANTOINE**	£15 0
5253.	3½ h.p. 1908 Twin **PEUGEOT**	£18 0
5262.	3½ h.p. 1911 2-speed **HUMBER** ..	£37 10
5271.	4½ h.p. 4-cyl. **F.N.**	£18 10
5277.	2¼ h.p. 1910 2-speed **F.N.**	£25 0
5285.	2 h.p. 1910 **MOTO-REVE**	£20 0
5293.	2¾ h.p. 1911 **ENFIELD**	£28 0
5066.	3½ h.p. 1911 **BRADBURY**, Mabon cl.	£37 10
5064.	3½ h.p. 1911 2-speed **HUMBER**	£37 10
5055.	3½ h.p. 1911 **L.M.C.**, variable gear ..	£35 0
2965.	2 h.p. 1909 **MOTO-REVE**	£17 10
4046.	1¾ h.p. **MOTOSACOCHE**	£11 10
4249.	3½ h.p. 1911 Standard **BAT**	30 Gns.
4322.	3½ h.p. 1911 2-speed **N.S.U.**	£35 0
4420.	3½ h.p. 1911 Free-engine **PREMIER**	£38 10
4474.	3½ h.p. 1911 **PREMIER**	£27 10
4531.	3½ h.p. 1910 2-speed **SCOTT**	£32 10
4546.	3½ h.p. 1911 **KERRY-ABINGDON** ..	£32 10
4631.	3½ h.p. 1909 **J.A.P.**	£22 0



Write for copy of List, or call and see the Kingdom's largest show of Motor Cycle Bargains.

9, SHOE LANE, FLEET STREET, LONDON, E.C.

Wires: "Opificer, London." 'Phone: Holborn, 5777.

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☞DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

8 h.p. Chater-Lea-Jap, 2 speeds, handle starting; £40.—North, Merlin Works, Penrith.

1912 Rudge, not done 30 miles, guaranteed perfect; no time to ride.—Strickland, Hazelbank, Winder, mere.

1912 Free Engine Triumph, just arrived, in crate, no waiting.—Louis Smith, The Garage, Barnard Castle.

1912 Scott for immediate delivery; accept best offer over £65.—Archdale, Bishopton Lane, Stockton-on-Tees.

INSURANCE Against Third Party and Accidental Damage.—Write for particulars, Illingworth, Insurance Broker, Kendal.

RUDGE, 1912, 5 weeks old, only done 450 miles, tyres just soiled; bargain, £45.—Apply, Box 425, *The Motor Cycle* Offices, Coventry.

TRIUMPH, 1908, new engine, carburetter this year, in splendid touring condition; £30, or nearest offer.—Fildes, Surveyor, Grasmere.

1910 T.T. Triumph, guaranteed, as new, £37; 1909 Triumph, £27; 4h.p. twin N.S.U., tools and spares. £18.—Wilson, 2, Ash Place, Sunderland.

INDIAN, P. and M. 2-speed gear, 3h.p. twin, 1910, green, B. and B., h.b.c. carburetter, good condition, fake sidecar.—G. Martel, 44, Swinburne Rd., Darlington. £38.

TRIUMPH 1912 T.T. Roadster, practically new, lamp, horn, belt bag, spare tyre, tube, belt, valve, etc.; a bargain, £48.—Cyril Walker, Hill View, The Park, West Hartlepool.

ARNO, the ideal machine.—3½h.p. T.T. model, £45; Tourist model, £45; 2¼h.p. medium, 39 guineas; 3½h.p. 2-speed and free engine, £55; sidecars to fit any machine in stock.—Myers, Neville's Cross, Durham.

TRIUMPHS, Humbers, B.S.A., Royal Enfield motor cycles, lightweights, 2 speeds, free engines; write, wire, or 'phone for immediate deliveries.—Turvey and Co., The Motor House, Sunderland. Tel.: No. 626.

3½h.p. Lincoln Elk (1912), variable pulley, only ridden 400 miles, perfect condition, overalls, powerful lamp, horn, mirror, and sundries, all as new; cost £40, complete; accept £32; inspection invited. — Brewery House, Workington.

SECTION II.

York and Lancashire.

PICKLES for Lincoln Elks.—3½h.p. £34, 2 speeds £42.

PICKLES for sidecars from 5 guineas, in stock; B.S.A., Chater-Lea, Royal Avena, J.A.P.; Michelins 17/6; machines sold on commission, 5%; no sale, no charge.—Pickles, Church St. Garage, Bradford.

In answering these advertisements it is desirable to mention "The Motor Cycle."

The Halifax Motor Exchange

Largest Rex Dealers, 16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams, "Perfection."

£3 to £5 DOWN and 5/- weekly secures prompt despatch of

2½ h.p. **MINERVA,** spring frame, h.b. control	£9 10
Twin **REX,** spring forks	£16 10
3 h.p. **QUADRANT**	£10 10
2¾ h.p. **KERRY**	£10 10
3 h.p. **HUMBER** chain drive	£8 10
2½ h.p. **MINERVA,** spring frame, h.b. control	£9 10
3½ h.p. **FAFNIR,** smart and good	£12 10
2¾ h.p. **DE DION**	£10 10
2½ h.p. **J.A.P.,** spring forks	£8 10
3½ h.p. **M.M.C.,** torpedo tank	£10 10
3½ h.p. **REX,** h.b. control	£8 10

£7 deposit and 10/- weekly secures—

2¾ h.p. Mag. **MINERVA,** chain drive	£16 10
Four-cylinder **F.N.,** magneto	£19 19
3½ h.p. Magneto **REX**	£19 19
Twin **MOTO-REVE**	£19 19
2½ h.p. **REX** Magneto Lightweight	£16 10

1911 REX BARGAINS.

	Makers' price.	Ours.
3½ h.p. Rex Tourist	43 guineas	34 guineas
3½ h.p. Free-engine	48 guineas	39 guineas
3½ h.p. 2-speed de luxe	57 guineas	46 guineas
5 h.p. 2-speed de luxe	60 guineas	51 guineas

All new and guaranteed. Exchanges liberally dealt with.

1912 DE LUXE SIDECAR

£6 6s.



"Exchange," with Continental motor cycle tyre £5 5 0
"De Luxe" with best tyre, apron, foot mat .. £6 6 0
Ditto, with reversible child's seat £7 0 0
Ditto, with best coach-built body £7 12 6

Improved Quick Detachable Joints, cranked extra strong back axle and spindle, tip up body, and caged ball races to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

Discount to trade. Exchanges entertained.

GUARANTEED IN RUNNING ORDER.

1912 3½ h.p. Standard **BRADBURY,** NEW	£43 0
1912 Twin **REX** Sidette, NEW	£75 0
1912 Two speed **REX JUNIOR DE LUXE**	£45 0
1911 3½ h.p. Tourist **REX,** done 100 miles	£31 10
SCOTT 2-speed, Aug. 1910	£37 10
1911 3½ h.p. 2-speed **TRIUMPH**	£42 10
1911 3½ h.p. **REX,** clutch model, as new	£34 10
1911 3½ h.p. 2-speed **REX,** only done 200 miles	42 Gns
1910 7 h.p. Twin **REX,** HOT STUFF	£37 10
1910 5 h.p. Twin **REX,** NEW	£34 10
1910 5 h.p. **REX,** very fast, special machine	£29 10
1910 **ROYAL ENFIELD,** smart	£22 10
5½ h.p. Two-speed Twin **ROC,** magneto, Druids	£29 10
Brand New 3½ h.p. **REX**	£29 10
1911 3½ h.p. 2-speed **N.S.U.,** smart and good	£35 0
1908 3½ h.p. Magneto **REX,** spring forks	£19 19
4½ h.p. 4-cylinder **F.N.,** magneto, spring forks	£19 19
3 h.p. **QUADRANT,** low frame	£10 10
2¾ h.p. **KERRY**	£10 10
3½ h.p. **REX,** specially good, h.b. control	£8 10
6 h.p. Twin **KERRY** Tricar	£14 10
5 h.p. 2-speed **HUMBER** Tricar, coach-built	£19 10

Easy Payments at Special Rates.

SUNDRIES.

Stewart Speedometers, front or rear drive	£2 15
F.R.S. Lamp	16/6
Mahon Free-engine Clutch, fits Triumph	35/-
Mahon Free-engine Clutch, fits Rex	35/-
Rexette Chassis, with body and tyres	£7 10
Monocar Frame, 4-wheeler, with axle and tyres	£6 10
Backrest, to fit XL-ALL saddle	7/6
Triumph Pattern Horns, New	4/6
New Cane Sidecar Body	17/6
Brook's B100 Saddle	9/6
New Large Lycett's MOTOR SADDLE	9/6
Wicker Sidecar Body	10/6
Cane Sidecar Body, New	17/6
New Sidecar Aprons with studs	7/6
Plated Rex Pattern Handle-bars	6/6
New 20-amp. Fuller Accumulator	1!/-
New Harrison's Backrest, usual price 12/6, ours	9/6
Myers' Motor Cycle Stand	3/-

MOTOR BICYCLES FOR SALE.

NEW Hudson, 2¾h.p., July, 1911, done 2,000 miles, new Wood-Milne back, and Dunlop belt, Glare lamp, Jones speedometer, Garner whistle, Firmax, numerous spares and accessories; expert examination invited; 38 guineas.—Camm, Calderbank, Todmorden.

GREAT Sale of motor cycles.—3½h.p. Rex, £7/10; 4h.p. Chater-Lea, magneto, spring forks, B. and B., £12; 3h.p. Triumph, £9; 1909 Douglas, £18/10; 1911 Kerry-Abingdon, £28; 5-6h.p. Rex, 1909, twin-cyl., free engine, and sidecar, £25, worth £40; 1908 Triumph, new condition, £25; P. and M., nearly new, 2-speed, free engine, £37/10; we have about 60 second-hand motor bikes in stock, consisting of 1907, 1908, 1909, 1910 Triumphs, prices from £15; several Bradburys, Singers, Moto-Reves; all machines sold are warranted in good order; sidecars from 50/-.—The Motor Cycle Exchange, 160, Young St., Sheffield.

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

REX, 3½h.p., just overhauled, very fast, low position; £12.—A. Alpress, Saddler, Buxton.

RUDGE, new multi-speed model, for immediate delivery; best offer accepted.—Moss, Wem.

SCOTT, 1912, best cash offer over list price.—Box No. 378, *The Motor Cycle* Offices, Coventry.

1912 4h.p. Indian, new, in crate; offers wanted.—No. 429, *The Motor Cycle* Offices, Coventry.

1911 3½h.p. Lincoln Elk, new August, good condition, new Palmer.—Redfern, Hollies, Etwall, Derby.

SCOTT, 1911¾, little used, splendid condition, complete with accessories; £49; trial.—Moss, Wem.

1912 Premiers and Zeniths in stock; best offers.—Chapel Ash Motor Cycle Depot, Wolverhampton.

2¾h.p. Minerva, good running order, low position; any trial here; £7.—20, Wellington Rd., Rhyl.

PHELON and Moore, 1912, delivery May; best offer over list price.—Motor Depot, Blackheath, Staffs.

TRIUMPHS, free engine, £55; B.S.A., 2-speed £60, free engines £56/10; in stock, immediate delivery.—Motor Depot, High St., Blackheath, Staffs.

1911 Humber, 2h.p., £23/10; 1911 Calcott, 3½h.p., F.R.S. 58/6 lamp, £27/10; Humber, 3½h.p., 2-speed, £25/10; all ready to ride away.—Motor Depot, High St., Blackheath, Staffs.

1911 Free Engine Singer and Sidecar, perfect condition, Lucas lamp, and all spares; offers.—Below.

1911 Bradbury, 2-speed gear, and sidecar, not done 1,500, £4 worth of spares; offers.—Below.

1911 Triumph, T.T., equal to new, done about 1,000; £38.—Below.

1911 Triumph, standard; £36/10; perfect condition.—Below.

RUDGE-WHITWORTH, 1912, free engine, not done 200 miles; offers.—Below.

8-11h.p. De Dion Car, fully licensed; offers; or would exchange for higher power, cash adjustment.—C. Attwood, The Garage, Eccleshall.

DOUGLAS, the king of lightweights, new 1912 models, actually in stock.—Moss, Wem.

B.S.A., 1911, standard model, perfect condition, unscratched; £36.—Hill, fishmonger, Mill St., Congleton.

HUMBER Lightweight, 1911½, as new, T.T. saddle, all accessories; £26.—Peace, Westbourne Rd., Walsall.

TWO Second-hand Triumphs, standard and free engine, first-class condition, also two sidecars.—J. Cooke, Sandbach.

1911 3½h.p. Premier, in good condition, £25; 1911 2¾h.p. Douglas, in perfect order, £27. — Tom Booth, Frodsham.

£6/10.—Clyde, 2¾h.p., l.t. magneto, Longuemare, Palmers, adjustable pulley, running order; bargain.—Trevethan, Rhyl.

1907 3½h.p. Triumph, adjustable pulley, latest carburetter, in perfect condition; £21.—Bennett, Needham, Bakewell.

1911 Free Engine Triumph, lamp, horn, accessories, spares, guaranteed perfect; £42.—Kolthammer, Marple Bridge, Derbyshire.

ZENITH Gradua, August, 1911, splendid condition, all spares, £45; with Mills-Fulford sidecar, £50.—Lake, Whitaker Rd., Derby.

REX, 1910, 3½h.p., T.T. machine, very fast, in first-class order, tyres new; £18/10.—Box No. 439, *The Motor Cycle* Offices, Coventry.

1911 Douglas, little used, complete, P.H. lamp, horn, cyclometer, all spares, tyres new; £35.—No. 437, *The Motor Cycle* Offices, Coventry.

1912 F.E. Rudge; bought sidecar machine; as new, not been run 200 miles; £50, or offers.—Box No. 440, *The Motor Cycle* Offices, Coventry.

TRIUMPH, 1910, clutch model, run 1,500 miles, new heavy Kempshall, Whittle belt, perfect condition; £38/10.—Evans, jeweller, Abertillery.

REY

5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.

Tele: "Rey, Hampstead." Tel: 2678, P.O., Hampstead.

EXTENDED PAYMENTS

Taken on any Machine or Runabout.

NO EXTRA CHARGE ON MOST MAKES.

Following 1912 Machines for

IMMEDIATE DELIVERY

AND IN STOCK:

TRIUMPH T.T. Roadster, 1912	£50 0
RUDGE Multi-speed, 1912	£60 0
TRIUMPH Standard Model	£48 15
TRIUMPH 1912 F.E. Model	£55 0
RUDGE Standard Model	£48 15
RUDGE T.T. Model	£48 15
RUDGE F.E. Model	£55 0
CLYNO 5-6 h.p. 1912 2-speed Model	65 Gns
P. and M. 3½ h.p. 1912 2-speed Model	£65 0
B.S.A. 3½ h.p. 1912 2-speed Model	£60 0
B.S.A. 3½ h.p. 1912 Standard Model	£50 0
BRADBURY 3½ h.p. 1912 2-speed Model	£55 0
ZENITH. 6 h.p. Model	67 Gns
ZENITH 3½ h.p. Model	53 Gns
DOUGLAS L Lady's Model	£52 0
DOUGLAS J T.T. Model	£47 0
DOUGLAS G Standard Model	£41 0
BRADBURY Standard Model	£48 0
BRADBURY F.E. Model	£54 10
BRADBURY T.T. Model	£48 0
SINGER 3½ h.p. 3-speed Model	£58 10
LINCOLN ELK 3½ h.p. Standard Model	£34 5
HUMBER 3½ h.p. 2-speed Model	£52 10
BAT 6 h.p. Standard Model	£58 0
SINGER 2-speed 4 h.p. Sidecar Model	£65 0
ZENITH 8 h.p. Model	69 Gns
DOUGLAS Model K	£50 0
BRADBURY 2-speed Model	£55 0
B.S.A. F.E. Model	£56 10
G. and N. Runabout in four weeks.	

Any other makes on application.

TRADE SUPPLIED WITH VARIOUS MAKES. LIBERAL DISCOUNTS ALLOWED.

Machines at Bargain Prices to Clear.

2011.	**F.N.** 1911 4-cylinder 6 h.p., splendid order	£35 0
2049.	**BAT** 5-6 h.p. Twin T.T., 1911 engine	£35 0
2047.	**F.N.** 2¼ h.p., 1911, 2-speed gear	£26 0
R.D.	**TRIUMPH** 3½ h.p. 1911 T.T. Roadster	£35 0
1968.	**REX** 1910¾ 3½ h.p., good order	£26 0
1955.	**F.N.** 4-cylinder, 1911, good order	£35 0
1906.	**F.N.** 4-cylinder 1911 Model and Sidecar	£38 0
1966.	**F.N.** 2¾ h.p. Magneto, good order, low	£15 0
1967.	**RUDGE** F.E., 1911, splendid order	£39 0
1859.	**DOUGLAS,** 1910, splendid condition	£24 0
1802.	**BRADBURY,** 1911, nice machine	£29 0
1785.	**BRADBURY** T.T., made 1911	£30 0
1640.	**ZENITH** 1911 3½ h.p. Model	£41 0
2065.	**TRIUMPH,** 1910, good order	£32 0
2064.	**F.N.,** 2½ h.p., 1910, good order	£25 0
2066.	**J.A.P.-CHATER-LEA,** 4 h.p., 1911, good order	£29 0
1823.	**BAT** 1910 8 h.p. 2-speed Model	£42 0
1858.	**F.N.** 2½ h.p. 2-speed Model	£26 0
1893.	**REX** Twin 6h.p., good order	£12 0

All Accessories included on S.H. at the price advertised.

Second-hand Sidecar, good order £4 10

BAT P. & M. two speed gear, new £10 0



THE £4 - 10 REY Sidecar £3 - 10

With Hutchinson or Michelin 26 x 2¼ tyre and tube, 30/- extra.

The famous "REY" EXHAUST WHISTLE now reduced to 12/6 each. Triumph standard type.

The "REY" LEATHER BELTING outlasts two of any other makes. Price 2/- per foot.

—— SPECIAL DISCOUNTS TO TRADE. ——

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY

REY

5, HEATH STREET, HAMPSTEAD.

Caught On ! ! !

— OUR —

REED CANE BODIES

have undoubtedly hit the mark.

Undoubtedly this class of cane is far superior and more classy than ordinary cane or wicker work, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

Model E



£7 10s.

Model F



£8 8s.

OUR POFULAR MODELS ARE GOING STRONG.



Model de Luxe.—£6 6s.



Model C.—£7.



Model E.—£7 5s.



Model D.—£8.

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID.

MOTOR CYCLE FRAMES

We have a quantity of frames by well-known maker, **Price 32/6 each.**

Rigid forks, 7/6 extra. Druid forks, 45/- extra. Enamelled and plated in first-class style.

MISCELLANEOUS BARGAINS.

4½ h.p. Aster Engine, water-cooled	£4 10
New 1912 Brooks B130 Saddle	14/-
New 1912 Brooks B104, padded	16/-
Nearly new B201, padded top	14/-
New Screw-cutting Lathe, 4in. centres	£6 10
4½ h.p. Water-cooled Engine, vertical	£5 10
2 h.p. Stationary Engine, water-cooled	£5 0
Leamington Passenger Chair, new	£1 0
Albion Clutch, fits Triumph	55/-
Brooks B100 Saddle	9/6
Cocoa Fibre Sidecar Footmats	3/-

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane,

HALIFAX (Two minutes from G.P.O.)

Telephone 919.

MOTOR BICYCLES FOR SALE.

1912 Clutch Bradbury, not used; best cash offers; will take 1911 Sunbeam cycle in part payment.—No. 428, *The Motor Cycle* Offices, Coventry.

TRIUMPH, 1911, £40; Humber, 1911, 2-speed, free engine, £37; Moto-Reve, 1909, £15; Moto-Reve, 1910, £18.—Campion Depot, London Rd., Derby.

1911 Humber, 3½h.p., 2-speed, h.b. mirror, new Lucas lamp, new condition, perfect, unpunctured; what offers?—Taylor, florist, Somercotes, Derbyshire.

REX, 5-6h.p. twin, Bosch magneto, B. and B., very good running order, tyres of the best, and new; £15/10.—Simpson, The Laurels, Hasland, Chesterfield.

N.S.U., 3h.p., magneto, new back tyre, recently enamelled and plated, good running order; a bargain, £15.—S. Wootton, Blythe Bridge, Stoke-on-Trent.

RUDGE, 1912, T.T. model, with standard bars, very hot, and smart to ride; bought twin; must sell; £39/10 nett.—Box No. 438, *The Motor Cycle* Offices, Coventry.

TRIUMPH, 3½h.p., free engine, practically new, ridden about 300 miles, lamp, horn, cyclometer, new carrier bag; cost £58/10, price £48/10, no offers.—Jones, motor agent, Llanfair P.G.

4h.p. Twin, made to special order Nov., 1911, T.T. and touring bars, accessories, warranted to do 70 m.p.h.; £45; particulars; or exchange Scott.—No. 430, *The Motor Cycle* Offices, Coventry.

REX de Luxe, 1911, 7h.p., free engine, 2 speeds, Bosch magneto, B. and B. carburetter, Whittle belt, Mills-Fulford sidecar, everything in excellent condition; cost £85, sell £55.—Freeman, Broad St., Bilston.

1910 Triumph, new tyres, Lucas lamp, £33; N.S.U. gear for Triumph, £5; Sturmey-Archer 3-speed gears in stock, £10/10.—Nelson, Gloddaeth St., Llandudno

1912 3½h.p. Chain Drive Bradbury, 2-speed, free engine, kick start, run about 400 miles; bought twin sidecar machine, with £12 Bradbury sidecar; cost £73, accept £60.—Box No. 441, *The Motor Cycle* Offices, Coventry.

ROVER, F.E., 3½h.p., 1911½, recently completely overhauled, tyres excellent, new Dunlop belt; owner buying T.T. machine; £38, or with Lucas horn and lamp, and Jones speedometer, £42.—Knight, 44, Stalbridge Rd., Crewe.

TOURIST Trophy Triumph, new March, 1910, splendid condition, complete with lamp, horn, tools, spare valve, plug, etc., brand new tyres and belt; £33, or reasonable offer; bought new Triumph.—Green, organist, Congleton.

TRIUMPH, 1910, in excellent condition, new covers back and front, also new Dunlop belt, lamp, horn, and usual spares; bargain, £33; owner bought 1912; can be seen any time by appointment.—Howard Harper, Brueton House, Bilston.

3½h.p. Premier, 1910, little used, Kerry free engine clutch (just been fitted), new Kempshall rear, Dunlop front; inspection, trial by appointment; Powell and Hanmer lamp, horn; £33, or near offer.—Premier, Park Hill, Hale, Cheshire.

IVY-PRECISION, 1911, 3½h.p., T.T. and roadster handle-bars, pedal gear and 2 sets of footrests, tyres good, absolute perfect condition; expert examination; complete with tools, horn, and spares; £36/10.—Ellis, Salop Rd., Oswestry.

1911 (September) New Hudson, J.A.P., Armstrong 3-speed, lamp, spare Whittle and valves, £48; 6h.p. V.S. and sidecar, F.R.S. lamp, £25; 4h.p. 2-speed sidecar combination, £25; Montgomery No. 5 easter sidecar, nearly new, £7/10.—Rollings, coach-builder, Wrexham.

TRIUMPH, Zenith, Singer, Rudge, Enfield, 1912 models, actually in stock. Following second-hands: Triumph T.T., 1911, £38; Triumph free engine, 1910, £39; Triumph standard, 1910, £32; Rudge, 1912, £38; A.J.S., 1911, £21; Bradbury free engine and sidecar, £35.—Oswald Parker, Melbourne, Derby.

THE North Wales Motor Exchange, Rhosddu, Wrexham. Tel.: 283.—Careful and immediate attention given to all enquiries. Exchanges a speciality. 1912 F.E. Rudge, Sensspray, £55; 1912 3½h.p. N.S.U. de luxe, £48; 1912 A.J.S., lightweight, model A, purchased off the stand at Olympia, only done 200 miles, £35; 1910 N.S.U. twin lightweight, a beauty, done 500, £27/10; 1908 Triumph, fine mount, £26; 1911 3½h.p. New Hudson, 3-speed, September bought, £48; 1911 3½h.p. Rex Speed King, French grey, fine goer, £29; 1912 3½h.p. standard Premier, immediate delivery; 1909 3½h.p. ball bearing Rex, beautiful condition, £25; 1909 5h.p. Rex, 2 speeds, handle starting, fine goer, £30; 4½ h.p. twin Minerva, modernised, new magneto, h.b.c., just been overhauled, beautiful condition throughout, only wants seeing, £27/10. To beginners, we have some splendid machines, cheap, send for lists.

SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

3½h.p. Triumph, 1907, h.b.c., magneto, good order.—Gilbert Spicer, Leamington.

ZENITHS, 3½ and 6h.p., in stock for immediate delivery.—Taylor, cycle agent, Kettering.

CAMPION, 2¾h.p., good order; bargain; seen any time; £10.—H. W. Davis, Ashby-de-la-Zouch.

Cash, Exchange, OR Easy Payments.

NEW 1912 MACHINES actually in stock.

3½ h.p. 3-speed NEW HUDSON	57 Gns
2¾ h.p. 3-speed NEW HUDSON	47 Gns
3½ h.p. RUDGE, fixed gear	£48 0
3½ h.p. HUMBER, 2-speed model	£52 10
1912 3½ h.p. BRADBURY, single-speed	£48 0
1912 3½ h.p. BRADBURY, 2 speeds	£58 0

SINGLE-CYLINDER REXES.

1910 3½h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p 1908 Featherweight Rex, Bosch mag.	£17 0

TWIN-CYLINDER REXES.

1906 5-6 h.p. Twin Rex	£16 10
5-6 h.p., Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, 2 speeds, M.O.V.	£48 0
5-6 h.p. de Luxe, 1908, 2-speed model	£28 0
5-6 h.p. de Luxe, 1908, 2 speeds, special	£29 10

OTHER MAKES.

3½ h.p. 1911 PREMIER (new) Millennium 2 speeds. Offers.	
3½ h.p. 1911 PREMIER (new), Armstrong 3 speeds. Offers.	
1910 P. and M., 2 speeds, fine goer	£32 0
1909 MOTO-REVE, twin engine, magneto, Druids	£20 0
1910 8 h.p. BAT, M.O.V., 2 speeds	£45 0
1¾ h.p. WOLF, magneto, spring forks	£15 0
1911 Lady's HOBART, Armstrong 3-speed	£36 0
4½ h.p. N.S.U., Bosch magneto, h.b. control	£21 0
3½ h.p Twin PREMIER, fine machine	£25 0
3 h.p. TRIUMPH, M.O.V., h.b. control	£17 0
1911 2½ h.p. MOTOSACOCHE, magneto	£27 0
3½ h.p. L.M.C., 1910 model	£25 0
3½ h.p. MINERVA, Bosch magneto, Amac	£22 0

SIDECAR COMBINATIONS.

8 h.p. BAT, 2 speeds, Milford sidecar	£50 0
5-6 h.p. 2-speed 1908 REX and sidecar	£33 0
7-9 h.p. 2-speed REX and sidecar	£53 0

All fitted with magneto and spring forks.

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3 h.p. MINERVA, vertical, M.O.V.	£12 0
3½ h.p. EXCELSIOR, Amac, h.b. control	£10 0
3 h.p. REX, vertical engine	£9 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

3 h.p. 1908 REX, Bosch magneto	£17 0
5-6 h.p. Twin REX, spring forks, h.b. control	£16 10
4½ h.p. Twin N.S.U., Bosch magneto	£21 0
Twin-cylinder MOTO-REVE, magneto, Druids	£20 0
3½ h.p. MINERVA, Bosch magneto, M.O.V.	£22 0
1¾ h.p. WOLF, A.J.S. engine, magneto	£15 0

CARS AND TRICARS.

4½ h.p. HUMBER Tricar, 2 speeds, wheel steering	£19 0
5 h.p. HUMBER Car, 2-seater, good goer	£22 0
5 h.p. REXETTE, Oppermann 3 speeds	£18 0
Duocar, Bosch magneto	£45 0

MISCELLANEOUS BARGAINS.

1912 B. and B. Carburetters, variable jets	28/6
1912 B. and B. Carburetters, single jet	27/-
1912 Sensspray Carburetters	28/6
Camel 1in. Rubber Belting per foot	1/3
Fulford Castor Wheel Sidecar	£5 0
N.S.U. Sidecar, coach-built, 26in. wheel	£4 10
Rex Pattern Belt Rim Brake (new)	6/6
Lycett's Carrier Toolbags (new)	7/6
Sidecar Lamps, show red light behind	7/6
Trailer, 26in. wheels	25/-
New Toolbags, 9 × 6 × 3½in.	4/6
Sidecar Aprons, green or red, with studs	7/6
New Lycett's Tubular Carriers	4/11
Longuemare Carburetters	5/-

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane,

Telephone 919. **HALIFAX** (Two minutes from G.P.O.)

ESTABLISHED 20 YEARS IN THE HEART OF THE TRADE



OUR STOCK
at
MANCHESTER,
261, DEANSGATE.
Telephone: Central, 7371.

A MACHINE for your money,
"Not a promise."

All below actually on the premises for
IMMEDIATE DELIVERY.

1912	DOUGLAS, model K	£52	0
1912	DOUGLAS, model G	£41	0
1912	DOUGLAS, model H	£47	0
1912	MATCHLESS, 2-speed, passenger	£73	10
1912	NEW HUDSON-J.A.P., 3-speed	£59	17
1912	NEW HUDSON, 3-speed	£59	17
1912	B.S.A., 2-speed	£60	0
1912	B.S.A., tree engine	£56	10
1912	B.S.A., free engine	£56	10
1912	PREMIER, 3½ h.p., 3-speed	£58	0
1912	PREMIER, 3¾ h.p., twin 3-speed	£63	0
1912	PREMIER Lightweight	£36	0
1912	RUDGE, free engine	£55	0
1912	N.S.U., 6 h.p., 2-speed, passenger.		
1912	MACBETH-PRECISION, standard	£45	0
1912	PRECISION, free engine	£53	0
1912	MATCHLESS, 3½ h.p., 3-speed	£58	6

OTHERS COMING IN DAILY.

LOOK BEFORE LEAPING!
BARGAINS!! BARGAINS!!
We do not allow Second-hands to accumulate.
Note these Prices.

1909	BRADBURY, perfect every way	£25	0
1909	HUMBER, 2-speed, free engine	£25	0
1910	DOUGLAS, single-speed	£25	0
1910	DOUGLAS, single-speed	£27	10
1909	TRIUMPH, single speed, a beauty	£28	0
1911	SCOTT, delivered November	£60	0
1911	PREMIER, free engine	£30	0
1908	N.S.U., 3½ h.p., pull sidecar	£24	0
1911	BRADBURY, as new	£37	0
1911	A.J.S., single-speed, trials only	£30	0
	REX, 3½ h.p., accumulator, good goer	£7	0

EXCHANGES.
SPECIAL THIS WEEK.
1912 RUDGE, free engine, three speeds old, done 50 miles, Lucas' K. of R. lamp, exhaust whistle, Jones' speedometer, horn, mirror, tools, and Montgomery sidecar; all guaranteed as new turnout; sacrifice £60.
EXCHANGES.

We have the best stock in Manchester. CALL and convince yourself that "We are the people for season's mount, New or Second-hand."

COLMORE DEPOT
261, Deansgate,
MANCHESTER.
Telephone: 7371 Central.

MOTOR BICYCLES FOR SALE.

HUMBER, 3½h.p., 2-speed, 1911, good running order, studded tyres, butt-ended tubes, Dunlop belt, spare tube, valve, and 2 piston rings; £38.—Nott, 7, Alexandra Rd., Brecon, S. Wales.

TRIUMPH, 1910-11, everything in perfect condition, complete with lamp, generator, pump, horn, etc.; bargain, £37, or exchange for 2-speed sidecar machine.—Beard, Fairfield, Treforest, Glamorgan.

HUMBER, 1912, 3½h.p., 2-speed, £52/10, from stock; Rudge, 1912, 3½h.p., free engine, £55, from stock; Ariel, 2½h.p., £11/11/6; Humber, 2h.p., £25; F.N., 4-cyl., £18.—Bladder, agent, Worcester.

MOTOSACOCHE, 1911, 2½h.p., free engine, adjustable pulley, Whittle, Lucas lamp, horn, Palmer tyres, good condition, Jones speedometer, Bosch, splendid condition; £26.—Lewis, 2, Queen's Hill, Newport, Mon.

SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants, and Channel Islands.

TRIUMPH, 1912, free engine; £55; delivery at once.—Pitt, Fordingbridge.

3½h.p., in good condition; £14.—Armr. Sergt. Richardson, XI. Hussars, Aldershot.

TRIUMPH, 1912, free engine models, from stock; £55.—Layton's, Bicester, near Oxford.

SCOTT, 1912, new machines from stock; premium required for immediate delivery.—Layton's, Bicester.

TRIUMPH, standard, 1912 models, from stock; £48/15.—Layton's, Bicester.

ENFIELD, 2¾h.p., twin-cyl., 2-speed, 1912 model; £46, no offers.—Layton's, Bicester.

PREMIER, 1912, 2¼h.p., lightweight; cost £36 ten days ago, our price £31.—Layton's, Bicester, near Oxford.

3½h.p. Premier, 1910, excellent condition; £30, nearest offer.—Campkin, Slough, Bucks.

DOUGLAS, 1911, just overhauled by makers; £30; owner going abroad.—Pitt, Fordingbridge.

PREMIER, 3½h.p., 3-speed; £58, will accept £54; not ridden, client seriously ill. — Gough's, Gloucester.

3½h.p. Brown, Bosch, spring forks, footrests, h.b.c., studded Dunlop, variable pulley; £17.—Thornitt, Banbury.

2¾h.p. Enfield, 1911, 2-speed, perfect condition; cost £52, accept £35; bought car.—Needham, Suffolk Regt., Aldershot.

TRIUMPH, 3½h.p., bought January, 1910, excellent condition, tyres and belt as new; £30.—Whiteman, 50, Ziuzan St., Reading.

1909 5-6h.p. 4-cyl. F.N., shaft drive, good condition; £20.—Particulars, Box L6,893, *The Motor Cycle* Offices, 20, Tudor St., E.C.

N.S.U., 3½h.p., magneto, just overhauled, splendid order; bargain £13/10, or near offer.—A. Beale, 26, Fawcett Rd., Southsea.

WANDERER, 1910, 3h.p. twin, F.E., spring frame, perfect order, very fast; £27, or offer.—Hall, 373, Fishponds Rd., Bristol.

ARIEL, cost £51/15, new, used thrice demonstration, under 300 miles; illness; 40 guineas; accessories.—Burton, Vicarage, Banbury.

RUDGE and Bradbury Models, for prompt delivery; trial runs; exchanges entertained; send for lists.—Agent, Barnes, Colnbrook, Bucks.

SCOTT, 1911, splendid condition, with 1912 canoelet sidecar; £60, or separately £49.—Butler, Penrose, Trelawney Rd., Cotham, Bristol.

MOTOSACOCHE, 1909, magneto, free engine, adjustable pulley, tyres nearly new, splendid condition; £17.—Morton, Thenle, Berks.

B.S.A., 3½h.p., 1911, November, perfect order, plating and enamel like new, very little ridden; £38.—Hewat, 46, Clare Rd., Maidenhead.

LADY'S Motosacoche, 2h.p., 1911, condition as new, splendid hill-climber; cost £42 last autumn, bargain, £28.—Lewis, 23, Park St., Oxford.

DOUGLAS, 2¾h.p., new, not ridden 100 miles, 2-speed, free engine and footboards; £37/10 cash, no offers.—Lees, High St., Fairford, Glos.

4-5h.p. Sarolea, magneto, splendid condition; £22; take old accumulator machine or 3½h.p. engine part payment.—Hobbs, High St., Eastleigh.

4h.p. J.A.P., Bosch, B. and B., Millennium 2-speed hub and free engine, as new, with or without sidecar.—H. Holland, Stow-on-the-Wold, Glos.

SCOTT, new October, 1911, ridden 300 miles, Cowey speedometer, horn, P. and H. lamp; seen by appointment; cash £50.—D. B. Lee, R.N. Barracks, Portsmouth.

2¾h.p. Tourist Trophy J.A.P., Chater-Lea frame, B. and B. carburetter, Bosch magneto, unscratched, not done 200 miles; price £30.—W. Rossiter, Kingswood, Bristol.

LADY'S Douglas, 1911, all accessories and spares, ridden summer months only, easy starter, climbs Birdlip on top gear; £38, no offers.—Gibb, Worcester St., Gloucester.

ESTABLISHED 20 YEARS IN THE HEART OF THE TRADE



OUR STOCK
at
BIRMINGHAM,
31, COLMORE ROW,
— AND —
49, JOHN BRIGHT ST.

All below ready for
IMMEDIATE DELIVERY.

1912	DOUGLAS G	£41	0
1912	ENFIELD, 2¾ h.p.	£52	10
1912	ENFIELD sidecar, 6 h.p. combination	£84	0
1912	NEW HUDSON, 3½ h.p.	£59	17
1912	TRIUMPH	£48	15
1912	MATCHLESS	£73	10
1912	PREMIER, 3-speed	£58	0
1912	PREMIER, free engine	£54	17
1912	MACBETH, Armstrong 3-speed	£55	0
1912	PREMIER, 2½ h.p.	£36	0

EARLY DELIVERY OF THE FOLLOWING.
BOOK NOW!
SCOTTS and DOUGLAS K.

All with J.A.P. Engines: Enfield, Bat, Chater Lea, Matchless — Special passenger models.

SECOND-HAND STOCK. TO BE CLEARED.

If you want a machine of any class or of any price, just write us and tell us your ideas. We cannot publish a list of all our stock in detail, for space reasons, but we have machines of every sort ready.

6	second-hand	3½ h.p. Triumphs from £20 to £40
5	,,	2¾ h.p. Douglas from £23 to £30
2	,,	3½ h.p. Premiers, both £36
2	,,	3½ h.p. Humbers, both £35
3	,,	6 h.p. 4-cyl. F.N., £15, £20, £25
2	,,	2½ h.p. Enfield Lightweights, £18, £23
1	,,	3½ h.p. Brown, Kerry, Allday, N.S.U., £20 to £30
		3½ h.p. Zenith, Bradbury, and P. and M., £28 to £38
1	Scott, 3¾ h.p., 1910, £35	
1	Chater-Lea, 8 h.p., passenger model, 1911, splendid machine for sidecar, £55	
1	A.C. Tricar, £55	

SPECIAL THIS WEEK.
PREMIER, 3½ h.p., with 3-speed gear (Armstrong). Price £58.
This is a splendid machine, that can be advantageously used for either solo or sidecar work. The gear is sale and reliable, and the machine is, as every motorist knows, one of the best that Coventry produces.

COLMORE DEPOT
31, Colmore Row, and
49, John Bright Street,
BIRMINGHAM.

MOTOR BICYCLES FOR SALE.

1909 2h.p. Moto-Reve, magneto, h.b.c., adjustable pulley, Whittle belt, tyres as new, very little used, in perfect running order; £16/16.—A. E. Burnett, Melksham, Wiltshire.

F.E. Triumph, delivery third week June; F.E. Bradbury, in stock; F.E. Premier, F.E. Rudge, lightweight Premier, 2¾h.p. twin Enfield, 2-speed; offers, exchanges.—Randall, Andover.

TRIUMPH, standard, 1910, re-enamelled and plated, new Palmers, butted tubes, accessories, condition perfect, £40; also sidecar, £4, or combination complete £42.—Wilkes, 12, Leighton Rd., Cheltenham.

TRIUMPH, 1912, free engine, Cowey, watch, lamp, horn, spare valve, belt, tube, only done 600 miles; price 50 guineas, cost over £63; seen near Salisbury.—Apply, Lieut. Reinold, H.M.S. Hercules, Home Fleet.

POWERFUL 3½h.p. Minerva Motor Cycle, good condition, reliable machine, engine perfect, belt new, new Dunlop (back), 2 accumulators, tools, bags, lamp, spares, etc.; bargain, £15.—R. Ranson, School House, Earsham, Bungay, Suffolk.

4¼h.p. Precision, 1911, re-enamelled and plated, lamp, horn, etc., new Dunlops, belt, whole as new, £34; 3½h.p. 1911 Rex engine, less magneto, perfect, £7; 2¾h.p. engine parts, complete less crank case, spares, £2; clutch, 21/-; frame and tank, 20/-.—Turner, photographer, Marlow.

SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

TOTTENHAM.

WE are agents for Humbers, Triumphs, Bradburys, Clynos, A.C.'s, and Matchless.

1912 Models in stock.—3½h.p. 2-speed Humber, F.E. Triumph, F.E. Bradbury; A.C. Sociable this month.

1911 Models.—Shop-soiled 2-speed Bradbury, F.E Bradbury, standard Bradbury, F.E. Rudge-Whitworth; what offers?

1911 Humber £37/10, 1910 Humber £34, 1910 3½h.p. Triumph £36, 1910 Motosacoche £24, 1910 4½h.p. Fafnir £27/10, 6h.p. twin N.S.U. £27/10, 3h.p. Triumph £16/10.—Stamford Hill Motor Co., 128, High Rd., S. Tottenham. 'Phone: 1982.

B.S.A. 1912 Motor Cycles; easy payments arranged. —Rivett, Leytonstone.

B.S.A., 1912, free engine models, in stock.—Rivett, Leytonstone.

B.S.A., 1912, fixed engine models, in stock.—Rivett, Leytonstone.

MOTOR Accessories, oils, etc.—Up-to-date stock at Rivett's, 236, High Rd., Leytonstone.

P. and M., 2-speed, 2¾h.p., little used.—Write, H., 24, Fulham Rd., S.W.

5h.p. Twin Alcyon, in good condition; £15.—Burow, Station St., Northfleet, Kent.

MAGNETO 3h.p. Motor Cycle; £15; in good running order.—18, Calthorpe St., London.

2½h.p. J.A.P., inclined. Chater frame, Palmer tyres; £9.—224, Wood St., Walthamstow.

2¾h.p. Minerva, vertical, Dunlop tyres and belt, recently enamelled and plated, ideal machine for beginner; £12.—224, Wood St., Walthamstow.

THE Croydon Motor Mart.—1912 Enfields in stock; no waiting; exchanges entertained.

THE Croydon Motor Mart.—1912 Hobarts in stock; immediate delivery; your present machine in part exchange.

THE Croydon Motor Mart.—1912 Lewis, 2-stroke; immediate delivery; a trial run will convince.

THE Croydon Motor Mart.—New Hudson, immediate delivery; in stock; no waiting.

THE Croydon Motor Mart.—Immediate delivery of Zenith, Douglas, Rudge; exchanges entertained.

THE Croydon Motor Mart.—1911¼ 2-speed free engine Enfield, perfect; £33.

THE Croydon Motor Mart, agents for the D.O.T. motors. Tel.: 797 P.O.; early delivery—86, South End, Croydon.

3½h.p. 1912 Lincoln Elk, brand new; cost £34/17/6, cash £30.—16, Park Rd., Westcliff.

BRIGHTON.—Triumph, 3h.p., good condition, h.b.c. to carburetter and spark; £17.—Below.

BRIGHTON.—Clyno, Bradbury, Douglas, Premier, etc., etc.—Turpin's, 29, Preston Rd.

CAMBERWELL.—Bradbury agents, Bright and Hayles, 73, Church St., Camberwell Green.

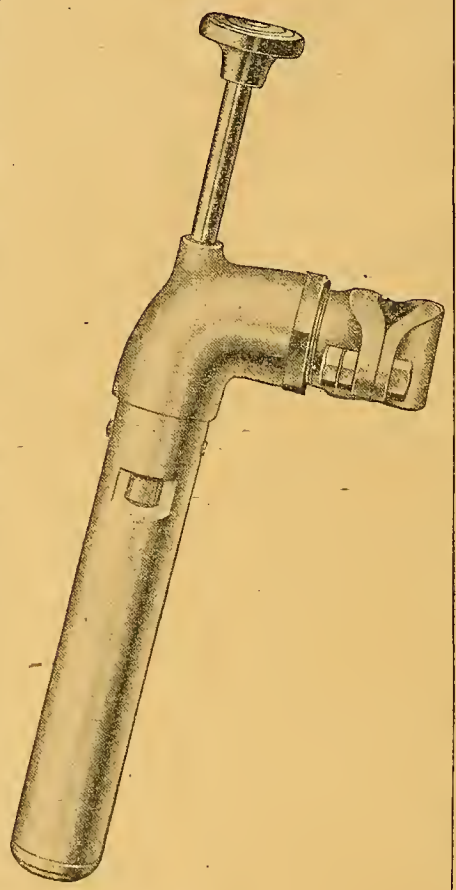
CAMBERWELL.—New Hudson agents, Bright and Hayles, 73, Church St., Camberwell Green.

HUMBER, 2h.p., 1911¼, good as new, all accessories; £28.—Rogers, 42, Church Rd., Hendon.

MOTO-REVE Twin, excellent condition, good tyres, spares; £17/10.—Rogers, 42, Church Rd., Hendon.

1911 3½h.p. Premier, Mabon clutch, perfect; £40.—Cutting, 11, High St., Maldon, Essex.

IT



GIVING :: ::
UTMOST :: ::
PLEASURE to
THOUSANDS.

PRICE:
12/6, nickel plated.
13/6, black.
Postage 5d. extra.

SOLE MAKERS and PATENTEES—
HENRY GARNER, Ltd.,
Moseley Motor Works, Birmingham.
'Phones: South 3 & 4.
'Grams: "Dependable, Moseley."

Stocked by all the leading factors.

MOTOR BICYCLES FOR SALE.

3h.p. Kerry, Bosch magneto, 26in. wheels, guaranteed perfect; £11/10.—48, North St., Barking.

5h.p. 4-cyl. F.N., magneto, splendid condition; 17 guineas.—59, Binfield Rd., Clapham, S.W.

1910 Zenith-Gradua-Jap; must sell, £30, near.—48, Londesborough Rd., Stoke Newington, N.

1911 Clutch Triumph, new, unused; £47/10.—Apply, 18, Hargor Rd. Plumstead Common, Kent.

F.N., 5-6h.p., 2 speeds, good running order, just overhauled; £32.—1, Overstrand Mansions, S.W.

£6, or offer.—Lightweight, running order.—Seen, Brown and Sons, 7, Manor Park Parade, Lee.

1912 Triumph, not ridden 500 miles, lamp, all spares; £45.—89, Stockwell Park Rd., S.W.

TRIUMPH and Bradbury, free engine models in stock; early delivery of B.S.A.—Jebb, Margate.

TRIUMPH, F.E., 1911, good condition, new belt and spares; £42.—Jago, Market Place, St. Albans.

TRIUMPH, first-class condition, little used, 1909 model; bargain, £30.—123, Holloway Rd., N.

ENFIELD 2¼h.p. Twin, October, 1910, Dunlops, perfect order.—13, Gulpins Rd., Thornton Heath.

QUADRANT, 2¾h.p., h.b.c., lamp, in good order; £5 cash.—Kinneur, 110, Church Lane, Tooting, S.W.

2¾h.p. Magneto Lightweight, B.B., h.b.c.; £10; good running order.—Kearton, Shepherdswell, Dover.

2¾h.p. M.M.C., good condition, tyres, etc.; £7, or offer.—Jenkin, 47, Usher Rd., Bow, London.

3h.p. Pebok, h.b.c., footboards, good hill-climber; £11.—Goodwin, 165, Green St., Bethnal Green.

TRIUMPH, good condition, new cylinder, piston, B. and B.; £20.—Glover, Kelvedon, Essex.

1912 Free Engine Rudge, perfect condition; offers.—Glover, Kelvedon, Essex.

EAGLES.—Douglas, 1911, 2-speed and free engine model, handle starting, fine condition; £35.

EAGLES.—N.S.U. lightweight, late 1910, had little use, Bosch, 2 speeds, free engine; £24.

EAGLES.—Motosacoche, 2¼h.p., latest pattern model, new 3 months ago, Bosch, free engine; £28.

EAGLES.—N.S.U., 3½h.p., nearly new, Eisemann magneto, 1911 spring forks, 2 speeds, free engine; £33.

EAGLES.—B.S.A., 1911 model, new last September, equal to new; £40.

EAGLES.—Rex, 3½h.p., Bosch magneto, dropped frame, Peter Union tyres; £18.

EAGLES.—Motosacoche lightweight, Bosch magneto, Druid forks, Whittle belt, free engine; £17/10.

EAGLES.—Humber, 3½h.p., 1911, exceptional condition, 2 speeds and free engine; £38/10.

EAGLES.—Singer, 1911, free engine model, new last June, cost £55, fine condition; £40.

EAGLES.—Enfield 2¼h.p. Twin Lightweight, 1910 model, Bosch, m.o. valves, excellent condition; £22/10.

EAGLES.—Mills-Fulford sidecars; always a large stock of latest models, from £6/6.

EAGLES.—N.S.U., 6h.p., latest model, twin, with 2 speeds, free engine; £61/15 (the ideal sidecar machine); immediate delivery from stock.

EAGLES.—Immediate delivery from stock of the famous N.S.U. 2-speed gears with free engines, from £5/15.

EAGLES and Co., High St., Acton.—N.S.U. West London district agency. Immediate delivery of 1912 models; liberal allowances for machines in part payment. Tel.: 556 Chiswick.

F.N., 1911, 6h.p., new condition; £34, bargain.—Taylor, 112, New King's Rd., Fulham.

HUMBER, 1910¾, 3½h.p., perfect condition, lamp, accessories; £28.—West, 19, Cranbrook Rd., Ilford.

P. and M.'s, in stock; premium required, cash or deferred terms.—Whiteley's, Queen's Rd., London, W.

MOTO-REVE, 2¼h.p. Twin, magneto, spring forks, lamp, accessories; £13/10.—20, Ilford Lane, Ilford.

1912 Zeniths, 3½ and 6h.p., brand new; offers, cash or exchange.—Storey, 1, Endell St., Long Acre.

2¾h.p. Minerva, splendid condition, new 1909, spares; 10 guineas.—B., 54, Dieppe St., West Kensington.

1912 3½h.p. Kerry-Abingdon, absolutely new, £41; with 2 speeds, £48.—84, Rodenhurst Rd., Clapham.

TRIUMPH, 1912, F.E., new Easter, unscratched; £51; lamp, horn, tools.—Quick, 52, Boundary Rd., Hove.

1912 Triumphs and Rudges, free engine models, now in stock; £55.—F. Spearman, Bridge St., Bishop's Stortford.

1912 New Hudsons, all models in stock; immediate delivery.—F. Spearman, Bridge St., Bishop's Stortford.

BRADBURY, 3½h.p., 1911, standard, new cover on back, spare tube; £30 cash.—Gibson, Eynsford, Kent.

THE MOTOR CYCLE

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Motor Cycle Taxation.

We hope the Treasury Committee which has been appointed to consider the horse-power rating of motor cycles and motor cars will, when it has arrived at a definite conclusion on this matter, proceed to arrange the taxation of motor cycles on a fairer scale than has been done up to the present. Why should a motor bicycle be taxed one pound per annum irrespective of its weight, age, or value? We do not propose to argue against the tax as a tax, because we recognise that one pound spread over fifty-two weeks is not a large proportion of a motor cyclist's expenses—it is the unfairness of the question which strikes us as requiring some consideration at the hands of those who fix the rates.

First of all, it is totally unjust to tax a motor cycle at all while nothing is paid for saddle horses. Then it is unfair to tax single-track machines, which cause practically no injury to a well-made road, the sum of a pound a year when a small car weighing ten times as much only pays two guineas. The original tax was 15s., the same as a two-wheeled cart, and our argument against it at the time it was imposed was that a two-wheeled cart does infinitely more damage to the road, not to speak of the iron shoes of the horse which draws it, and that while 15s. was considered enough for two wheels on a cart, half this sum was too much in comparison for a motor cycle. Motor cyclists unfortunately are branded with the magic word "motor," signifying wealth to all and sundry, and although the Treasury may think that if a man can afford a motor cycle at all he can easily pay the tax, it must not overlook buyers of second-hand machines who are just able to afford a motor cycle four or five years old costing £10 to £15; at present they have to pay the same tax as the owner of a £50 up-to-date model. We suggest that it would be fair to classify motor cycles for the purpose of taxation as follows: Machines with two wheels, not exceeding 150 lbs. weight, and machines four years old or over, 10s. per annum; exceeding 150 lbs., and under four years old, and all three-wheeled machines, 15s. per annum; four-wheeled cyclecars under 7 cwts., £1 per annum.

The Weight Definition.

The question of horse-power, size of engine, and other details which are not easy to check or to classify would be all covered by the weight definition. Taxation should certainly be by weight, because damage to roads is done in proportion to the weight of the vehicle. Power and weight also advance together, and it would hardly be possible, at any rate for some time, to produce an abnormally powerful machine inside the weight definition of 150 lbs. Motor cyclists, in addition to the £1 per annum tax, also pay 3d. a gallon on petrol, which at an estimate of 5,000 miles per annum, and reckoning consumption at ninety miles to the gallon, is equivalent to a further payment to the revenue of about 14s. per annum. A driving licence costs 5s. and registration also 5s.

It might be argued that motor cyclists should not agitate for tax reduction because the money collected for taxes is devoted to road maintenance. Were the whole of the taxes so set apart this might apply, but they are not, and as motor cycles do so little damage to roads in comparison with other traffic, there is a strong argument in favour of a lower rate.

In Defence of the Automatic Carburetter.

A FEW years ago someone defined an automatic carburetter as "a mechanical device which gives an incorrect mixture at all speeds," and this definition seems to have become ingrained in the minds of motor cyclists. Nowadays, however, this is quite untrue, and there are several devices which give us at any rate a close approximation to a correct mixture at all speeds. It is usually urged that it is impossible to obtain such a correct mixture with an automatic carburetter as an expert can get with a hand-controlled air supply. In view of certain performances on Brooklands and on the road, the writer is not prepared to admit this. At one time he himself possessed a certain lightweight which was fitted with a very simple automatic device. After slightly tinkering with the standard carburetter better times were made up a test hill than were ever reached with a double-control carburetter. It must be remembered that the average motor-cyclist is not an expert —frequently he is the reverse—and the fewer taps and the less twiddling there is to be done the better he is pleased. It must also be admitted that a novice with a properly adjusted automatic carburetter can do a great deal less damage to his machine than he can (and does) by giving an incorrect mixture because he does not know the "feel" of his air lever, and it is safe to say that a fair percentage of riders never do acquire this "feel." At the present time, with most double-control carburetters, there is a lot of fiddling to be done with the air lever every time that the position of the throttle is altered to any appreciable degree. This is especially annoying when one is opening out on a hill, and a novice will often fail on a hill merely because he could not get his mixture right, whereas if he had had a good automatic carburetter he would have got up with ease. No modern car is turned out without an automatic carburetter, and yet we have to search hard to find a standard British motor cycle so fitted. On the other hand, practically all American machines and most Continental makes, especially lightweights, are fitted with automatic devices which work extremely well. Nearly all the American track records are held by machines so fitted, or having at least semi-automatic carburetters. As regards reliability, there is not much to choose between the two types; if anything, the automatic carburetter has the best of it, as it usually has fewer moving parts to stick.

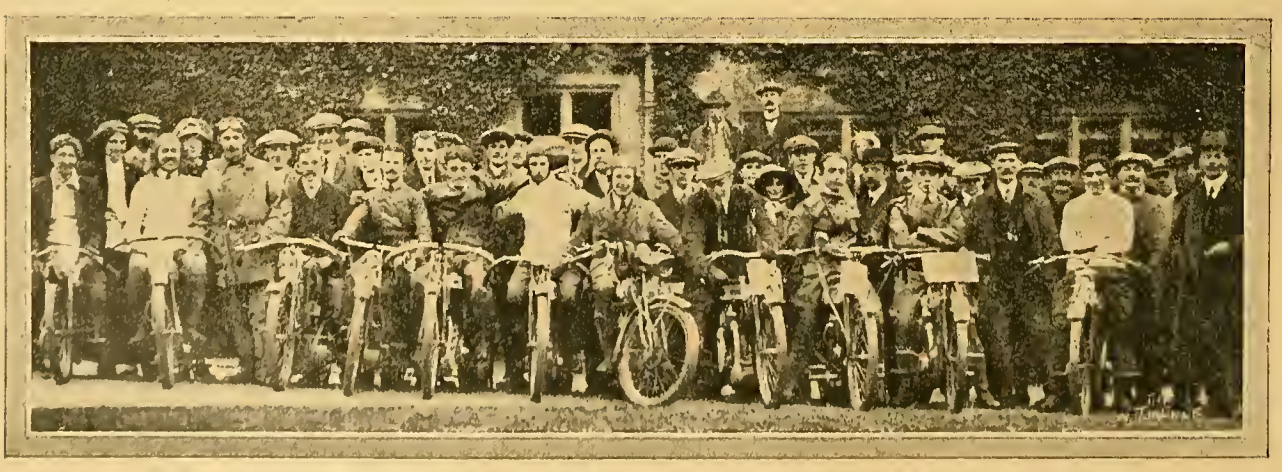
The reason why we have not progressed further on these lines is simple. The fault does not lie with the manufacturers but with the public. They have been given good double lever control carburetters, and will not risk something which they regard as an innovation. I feel sure that the best makers of double control carburetters are ready and waiting to maintain their reputation with the newer and more scientific type, and will do so as soon as they receive a little encouragement from the public.

History Repeating Itself.

Motor cyclists of long standing will remember the prejudice against the "spray" carburetter in the days when the surface type was in vogue, and yet how many surface carburetters are to be seen on the road to-day? This is a parallel case, and I venture to predict that in a few years the automatic carburetter will take its position as a standard fitting just as the spray type has done. Only those who have experienced traffic riding and touring with the modern automatic can appreciate its advantages, and the way one can throttle down to a tick or pick up suddenly by a simple movement of the thumb, gives one a sense of security never felt with the old method.

It is often stated that an automatic carburetter is wasteful of petrol, but after running with the variable air type for eight years the writer finds that he can obtain just as low consumption under ordinary touring conditions with a well-tuned automatic as with the best two lever type. It was stated recently in these pages that when the extra air port was opened no more air enters the cylinder, and that the opening only weakened the mixture by reducing the pressure, from which I take it that the writer of the article had not come in contact with a certain new carburetter which depends for its mixture on the suction of the engine on the jet chamber, the amount of this suction being mechanically varied as the air ports are opened and shut. As to the temperature and specific gravity of the petrol used, an automatic carburetter is as capable of the slight alterations to air adjustment and the level of spirit in float chamber as any other type

UBIQUE.



Group of Nottingham and District M.C.C. members at the Hardwick Inn after the hill-climb on the 4th inst. (see Club News pages).

AUTO CYCLE UNION NOTES.

The Royal Automobile Club and Associates' Race Meeting.

AT the above event, which will be held at Brooklands on the 27th July, the following two motor cycle races will be held: A two-lap handicap race for all classes of machines, in which a gold medal will be presented to the private owner who finishes first past the post, and an inter-team scratch race. Each team will consist of three riders from a club affiliated to the A.C.U., one of whom shall ride a single-cylinder machine up to 500 c.c., another a multi-cylinder machine up to 750 c.c., and the third a sidecar machine up to 1,000 c.c. The team gaining the least points is to be adjudged the winner. These two races were most successful last year.

Permits.

Subject to the competing machines being geared 5—1 with 26in. wheels, a permit has been granted to hold motor cycle races at the Cambridge Charity Sports on the 24th July. Permits have been granted to the Cardiff Motor Club to hold an open hill-climb and speed trials on the 20th July, and to the Cumberland M.C.C. to hold speed trials on the 5th August. A permit will be given to the Bradford M.C.C. to hold an open reliability trial on the 27th and 28th May provided compliance is made with the A.C.U. regulations governing those trials.

Private Owners.

Owing to certain circumstances which have arisen, it is necessary to point out that private owners taking part in competitions must only ride machines which are actually their own property. They must not pose as private owners when riding borrowed machines.

The Edinburgh Motor Cycle Club's Inter-team Hill-climb.

The above event will be held on Manor Hill, near Peebles, twenty miles south of Edinburgh, on Saturday, June 8th, starting at 2.30 p.m. It is proposed that the team shall be made up as follows: Four riders of machines over 500 c.c., six riders of machines up to 500 c.c., and two riders of sidecar machines up to 1,000 c.c. The last two may be chosen from the above ten. There will be two classes, a scratch class and a handicap class. The team event will be followed by an open hill-climb. Tourist Trophy types of motor bicycles will be admitted, provided they are fitted with spring forks, full-size mudguards, tyres, etc. We understand that the hill is fairly short, very steep, and quite safe. English riders desirous of representing their country in this event should forward their names to the secretary of the A.C.U., together with particulars of their machine.

Horse-power Rating.

A Treasury Committee has been appointed to consider the horse-power rating of motor cars and motor cycles, and the Auto Cycle Union has been invited to send a representative to give evidence on its behalf before the Committee. It is not as yet known what the intentions are with regard to the taxation of motor cycles.

THE COVENTRY AND WARWICKSHIRE MOTOR CLUB OPEN RELIABILITY TRIAL.





(1) Scene at the start. (2) Miss N. Hough (Douglas) who rode splendidly. (3) W. G. Blatch (3½ n.p. Rudge) on Ilmington Hill. (4) W. F. Newsome (Ivee and Triumph) who secured first place in Class A. (5) A. Millidge (Premier). (6) H. G. Hill (Calcott) on Sudeley Hill.



Dissolved Acetylene for Motor Cycles.

Some weeks ago I mentioned that most American riders dispense with acetylene generators, and carry tanks of dissolved acetylene, which can be relied upon to feed clean gas for many hours. Readers will be interested to hear that the well-known D.A. people are preparing to supply English riders with suitable cylinders. The first cost is rather high; I am just paying £3 15s. deposit on a test cylinder, but the cylinders contain five cubic feet of gas, sufficient for about twenty hours' night riding, and the exchange fee is only 2s. 6d., while there are exchange depots in all the large towns. The cylinders are quite compact in size, and thoroughly suited to carriage on a motor cycle, and there is not the least danger of explosion. The system is likely to be in full working order by next year, though I believe it is useless to attempt purchase immediately, as the country stockists cannot at present be provided with exchange cylinders of motor cycle size. Twenty hours' light for half a crown is by no means dear, and the cylinders will doubtless be very popular in twenty-four hours' trials next season. One cylinder would last a good many touring amateurs for an entire season.

Automatic Carburetters.

I read "E.M.O.'s" article on the above subject with great interest. I think controversialists generally overlook the fact that the choice at present is not between perfect efficiency obtained by two lever carburetters, and imperfect efficiency obtained by a single lever type; the real alternative for most riders is between imperfect efficiency with either one or two levers. Let me explain this.

The great factories very seldom send out two-lever carburetters adjusted to give perfect efficiency; if they did the control would be far too delicate and sensitive for a duffer to get good results on cornersome steep hills, and under other circumstances which constitute emergencies if the rider be timid or unskilful. At most factories the standing instructions given to fitters and testers result in a carburetter adjustment which is "rich all through." Consequently, even if we admit that existing types of automatic and semi-automatic carburetters fail to attain ideal efficiency, the standard two-lever type has real defects in practice.

Probably the only riders whose carburation at all approaches ideality are those amateurs and professionals who do not rest content with average adjustments.

Per contra, here are details of three carburetters with which I have been experimenting of late.

No. 1. Hand extra air and spring valve. Provided the spring be kept correctly adjusted, the hand extra air may be ignored and left idle, except when it is desired to obtain maximum fuel economy, or maximum speed on the level. The adjustment of the spring valve is mechanical, since the spring has to act under a given pull, and to open a given distance. This is more efficient and more suited to novices than the standard two-lever type.

No. 2. Three-jet type, single lever. An ideal carburetter when once correctly adjusted. It meets all "E.M.O.'s" criticisms, inasmuch as the third jet, being small in proportion to the others, weakens the mixture for speed work on the level when the single lever is opened to its full extent, and if only two jets be open a rich mixture is available for slow engine speeds on medium large throttle opening, as in hill-climbing. Defect—difficulty of suiting three jets and choke tubes, in complex relationships, to different engines; need of re-adjustment to suit quality of air under diverse climatic conditions. This carburetter is not to be recommended, because of the complexity of its adjustment.

No. 3. Similar to No. 2, except that it has a plate on the spraying chamber which enables the air to be adjusted to suit different localities or different temperatures without interfering with the jets or choke tubes. This is a first-rate carburetter, absolutely economical and efficient, and may be recommended, because the complexity of the original adjustment is only a small objection, since the adjustment, once made, is final, and is modified only by altering the small plate.

These are but three out of numerous alternative designs, and two of them are equal in technical efficiency to the standard two-lever type, as adjusted by the average maker.

"Four Gold Medals Lost by Tyre Troubles."

The above is a pregnant sentence from the judges report on the last A.C.U. One Day Trial. How much longer is under-tyring of machines to continue? It is common in the car world as well. The fierce price competition causes manufacturers of both cars and cycles to fit as standard, tyres which are too light for their work. With luck and with attention they will cover a mileage long enough to prevent customers from clamour, and in their ignorance the purchasers remain content to buy small thin tyres, simply because they do not know that tyres are made which will take them through a season without any trouble at all. There are tyres on the market which will average 3,000 miles on the back wheel of a 3½ h.p. without more than one puncture at the outside. But these tyres are expensive, and competition prevents their being included in list prices, and many buyers are ignorant of the contrast between them and the standard light types. Here are some illustrations.

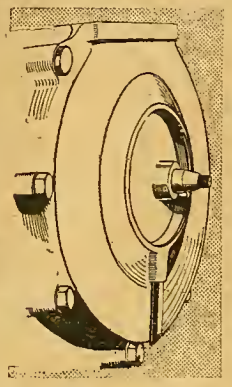
Last year I used three light covers in 1,500 miles on my back wheel, and afterwards fitted a heavy tyre which ran 3,200 miles without a puncture. The three light covers punctured on fourteen occasions before giving up the ghost for various reasons. In many cases the firms are themselves ignorant. They have large contracts for light tyres, and they are compelled to use light tyres in sprint work, so they thoughtlessly put their trade riders into the six days' events, and other smaller competitions, on the same overworked covers.

A NEW ENGINE.

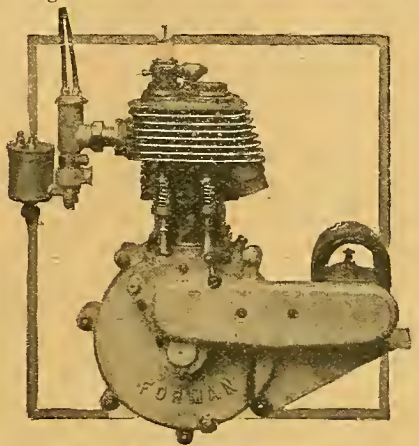
The Forman Motor Co., of Coventry, are placing on the market a very neatly designed 2½ h.p. power unit. It is primarily made to suit those motor cycle companies who do not manufacture their own engines. The bore and stroke are 70 × 76 mm. respectively, giving a cubic capacity of 292 c.c. The cylinder casting is a particularly clean one, and has the valve ports disposed at the side as in usual practice, and square radiating fins. Valves are of large diameter and very strong at the junction of stem and head; they show evidence of careful design and long experience, for though no weight is spared where it is important, the head is recessed on the under side so as to save unnecessary metal. The crank case is of aluminium fitted with chilled phosphor bronze crankshaft bearings of ample proportions, and hardened steel timing gear bushes. Only one pair of gear wheels is used, the two cams lying one behind the other and operating the tappets through rocking arms. The outer end of the camshaft carries a chain sprocket and drives the magneto in the usual way, the magneto platform being cast with the crank case. Cast with the pulley side of the crank case is a large oil catcher, having a drain pipe from the bottom, and on timing gear side is a well designed release valve, which can be easily dismantled and has no small parts to get out of order. The piston is light and fitted with two stepped rings at the top, and a wide ring retaining the gudgeon pin. The connecting rod is fitted with phosphor bronze bushes, and is a light but strong forging.



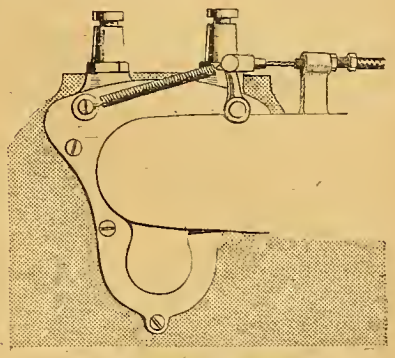
Showing design of valve head.



Oil catcher on pulley side.



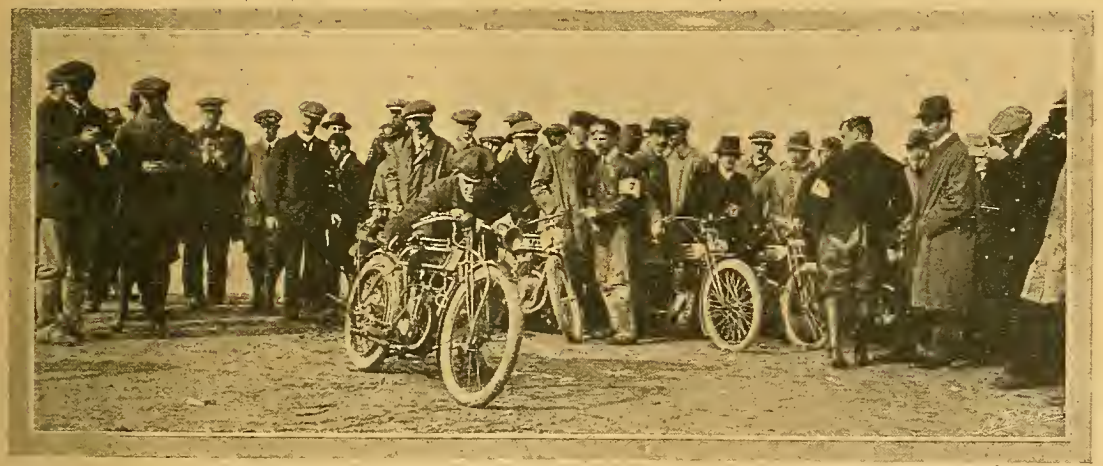
New 2½ h.p. 70 x 76 mm. Forman engine.



The valve lifter mechanism.

Either Bosch, Simms, or Ruthardt magnetos can be supplied, and the Brown and Barlow carburetter is a standard fitting. Altogether we were very well impressed, both with the design and manufacture of the engine, and it should have a ready sale in these days of highly efficient 2½ lightweights. The Forman Co. were pioneers in the motor cycle engine trade, and many of the old Excelsior engines made by them are running to this day.

The firm are well-known as manufacturers of launch engines and of fire engine pumping gear, etc.



RACING AT PORTMARNOCK BEACH. J. J. Farrell (2¾ h.p. Humber) starting in the thirty miles handicap.

THE AUTO CYCLE UNION SILENCER TRIAL.

It was mentioned in our first announcement concerning the silencer trial that the standard of silence would be judged by means of a simple form of silencer, consisting of two tubes sliding one inside the other, which would allow the judges to see the capacity necessary to render the noise inoffensive in their opinion. It has now been decided to start experiments in this direction, as soon as the experimental silencers have been constructed, on two standard motor bicycles on the road. A Triumph and a Rudge will probably be chosen for the test.

As soon as the requisite standard of silence has been arrived at, full particulars will be forwarded to prospective entrants so that they have a basis on which to work. In the final test of silencers submitted, weight, volume, practicability, and silence will be taken into consideration. Those submitted must not, of course, make more noise than the standard silencer. At the last meeting of the A.C.U. Silencer Sub-committee, Messrs. F. E. Baker (Precision), C. W. Hathaway (Triumph), and John V. Pugh (Rudge) represented the Manufacturers' Union, and a vote of thanks was passed for their assistance. It is probable that representatives from the Local Government Board will be invited to witness the trial. The date of the preliminary tests will be announced later.

Registration Numbers.

Buyers and sellers of second-hand machines are advised not to neglect the necessary transferring or cancelling of the registration number. When a machine is sold, the registration becomes void unless transferred. At Ryde recently both parties to a transaction of this kind were fined 1s. and 11s. costs each.

TRICAR CONVERSIONS.

TWO INTERESTING EXAMPLES OF REJUVENATED TRICARS.

WHAT has become of all the old tricars that were built six or seven years ago? This is a question which we are often asked, and surely not without reason. The light forecar or motor bicycle attachment has died a natural death, for, though we derived much enjoyment out of this type in the early days, it must be confessed that the majority of them were most uncomfortable owing to the lack of suitable springing, under-powered, and suffered for the want of a reliable change-speed gear. Some of the better machines are still occasionally to be seen on the road, but it would be kinder not to enquire too closely into the whereabouts of the rest. But what about the heavier and expensive coach-built two or three-speed type, or the car on three wheels which appeared about 1905? Between that date and 1908 a large number of machines were manufactured by such reputable firms as the Singer, Riley, and Lagonda Cos. These were well-built machines with a fast turn of speed, and possessing good hill-climbing capabilities. Some of them certainly had their vices, as did most early machines. The steering gear on some was crude and caused one's arms to ache horribly, some were weak in the frame, and some had rear wheels which lay down round corners, but mostly they were praiseworthy machines for their day, and we cannot believe that they have already lived out their allotted time.

Since the rapid growth of the cyclecar movement a development has taken place which bears out this idea, for hardly a week goes by in which we receive no photographs or descriptions of sociable type vehicles converted from old-pattern tricars. Some are weird and wonderful contrivances, others look neat and up-to-date, but all are the genuine article rejuvenated, with side by side seats, possibly a body removed from an old two-seater car, and a new coat of paint.

TWO INTERESTING CONVERSIONS.



1 and 2 show a 9 h.p. Singer tricar converted into a sociable by A. W. Ayden, of Finsbury Park, N. The body was home made.
3 shows a side-by-side seated sociable which was once a Riley tricar, reconstructed by W. Baxter, of Morley, near Leeds.

To Obtain a Passenger Machine at Moderate Cost.

Now for the man who desires to carry a passenger in comfort and cannot afford a new machine there are great possibilities in this type. Old pattern three-wheelers up to 9 or 10 h.p., of staunch construction, can be picked up at very low prices, partly because their appearance is out of date, and partly because in the old tandem form of position, with the driver's and passenger's seats wide apart, it was not easy to carry on a conversation without the risk of a permanently cricked neck for the passenger. A little ingenuity, the assistance of the local agent, and a moderate outlay will get over both these troubles, and by attention to weight distribution, not only can greater comfort be obtained, but the upkeep can be materially reduced, as the position of the seats greatly affects the life of tyres.

On this page we reproduce photographs of two more machines, one of which is (or was) a 9 h.p. Singer, and the other a Riley tricar. These may serve to suggest fresh ideas to anyone who intends to experiment in this direction.

MILITARY MOTOR CYCLING NOTES.

Another Mobilisation Scheme. A Cyclist Battalion for Birmingham.

By "CELERITER."

TO strike whilst the iron is hot is an old precept which has the advantage of being favoured by modern men of business, and put to the proof successfully. Those who know best consider that the frostiness of the usual War Office attitude towards military cycling has been brought to at least a degree of mild temperature by the recent splendid achievements at Daventry. It is claimed and admitted that we motor cyclists have proved our willingness and ability to rush off at a moment's notice to any indicated locality, but what the authorities now want to know is, "Are the motor cyclists capable of running to a scheduled time scheme?" and it is suggested that we should prove that we are imminently capable of so doing. The Legion of Cyclists has determined to prove it beyond a shadow of a doubt, and it invites all motor cyclists to co-operate. Unlike the Daventry mobilisation on April 27th, the date of the rendezvous is not to be kept a secret. Sunday, June 9th, at 1 p.m., is the appointed day and time, and the place will be within a forty miles radius of Charing Cross.

The Crux of the Scheme.

The whole idea is to prove that motor cyclists can run to schedule time over any given course, and the scheduled times on this particular occasion are to be as follows: For distances under 50 miles, 30 m.p.h.; 80 miles, 26 m.p.h.; 120 miles, 24 m.p.h.; 150 miles, 22 m.p.h.; over 150 miles, 20 m.p.h.

The ambition of each rider will be to arrive as the clock is striking 1 p.m. on Sunday, June 9th, at this unknown rendezvous, and there he will hand in his card to the officer on duty. The ideal is to attain absolute punctuality, and it will be just as bad to be five minutes early as to be five minutes late. The names of the twenty best arrivals, their mounts, and their score will be published in *The Motor Cycle* the following Thursday, and the representatives of the daily press will also be given all facilities to attend.

In addition, *The Motor Cycle* offers a prize of a silver cigarette case to the rider who makes the best record as adjudged by the umpire.

At 2.30 p.m. precisely the cards will be handed back to competitors, and they will then return home with all speed, get a witness to their time of arrival, and return their card by post to the umpire. The event, therefore, consists of a double one—a time test and a speed test.

How to Compete.

Address a stamped postcard to yourself, and then write in on the back the following particulars:

The rendezvous is the Railway Station at .....
Approximate number of miles .....
Hour of start .....
Witness to start .....
Address .....
Make and h.p. of machine .....
Hour of arrival at rendezvous .....p.m.
Hour of return home .....
Witness to return .....
Address .....

You should then enclose this postcard, together with three penny stamps, to Capt. A. H. Trapmann, 117, Piccadilly, W., so as to reach that address *not later* than first post Friday, June 7th. The postcard will reach you on Saturday with the rendezvous filled in and the other details will be filled in by you, the witness, or the umpire. Although it is hoped that the majority of those who take part will join the Legion of Cyclists, this is by no means obligatory.

The Legion of Cyclists.

Whilst on this subject, it will interest all of our readers who happen to be members of the Legion to know that at the conference held on May 4th the following points were decided:

(1) That each corps should pay an affiliation fee of 5s. per annum.

(2) That uniform should be optional, but that no corps should adopt a uniform without sanction from headquarters.

(3) That individual members should be allowed to purchase Legion badges provided that their application was forwarded through an organising officer.

(4) That all members should be encouraged to become subscribers to the Legion official magazine, which is to make its first appearance next month. (Subscription, post free, 3s. per annum, orders to be sent to the Editor, 128, Jermyn Street, London, W.).

(5) That until the Army Council are prepared to consider the claims of the Legion for official recognition every effort should be made to impress these claims upon them.

A Cyclist Battalion for Birmingham.

It will be good news for Birmingham, Coventry, and the Midlands that the War Office has invited that district to provide a Cyclist Battalion. It has been the cry and the desire of Birmingham cyclists for many a long month—or shall I say year?—and now at last it has been granted. The offer has gone forth, and it remains to be seen whether the Warwickshire County Association will accept it. On this point there cannot be much doubt, and also there is no doubt whatever that within a very few weeks the new battalion will recruit up to full strength, for there are hundreds of cyclists and motor cyclists round about Birmingham anxious and willing to serve their country. It is not often that a weekly journal can boast of being ahead of the daily press in the matter of news, but this is the first announcement that has appeared in print of the offer made by the War Office. Those motor cyclists and cyclists who are desirous of joining the new battalion should communicate with Colonel W. R. Ludlow, C.B., V.D., or Captain J. N. Townsend, both of the 8th Battalion Warwickshire Regiment, Aston Manor, Birmingham, who are interested in the formation of the new Cyclist Midland Regiment.

Legion of Cyclists Gazette.

The following corps having attained full strength and applied for recognition, are gazetted accordingly: 1st Corps (Woolwich), date April 20th, 1912; 2nd Corps (Brighton), date May 3rd, 1912; 3rd Corps (Chertsey), date May 5th, 1912.

Readers who desire information or advice upon military matters are invited to write to 'Celeriter," c/o the Editor "The Motor Cycle."

Questions & Replies



A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Hingham (Norfolk) to Malvern.

I should be much obliged if you would inform me—(1.) The best and shortest route from Hingham (Norfolk) to Malvern (Worcester). (2.) The total distance.

(1.) Your best route would be as follows: Hingham, Watton, Brandon, Mildenhall, Newmarket, Cambridge, St. Neots, Bedford, Stony Stratford, Buckingham, Aynho, Deddington, Chipping Norton, Stow-on-the-Wold, Tewkesbury, Upton, to Malvern. (2.) The distance is approximately 180 miles.

Cylinder Discoloured.

Having to remove my cylinder last week I found that there was a thin coating of burnt oil on the wall of cylinder extending 2½ inches, right under the exhaust pocket. It is the full width of exhaust pocket at the top and tapers off to a point down the cylinder. I should be glad to know the reason of this.—A. H.

The fact that the cylinder has become discoloured shows that it is not truly cylindrical, and it should be re-ground and a new piston fitted.

3½ h.p. and Sidecar.

(1.) Is the Arno machine thoroughly reliable? (2.) Is the Armstrong three-speed reliable, or would you recommend a two-speed gear in preference? (3.) Would a 3½ h.p. machine, fitted with a two or three-speed gear, and sidecar, be capable of taking two persons of average weights up Netherhall Gardens? (4.) What would be about the mileage of the back tyre? (5.) Would a leather belt (Service) last a thousand miles? (6.) What would be about the petrol consumption? (7.) Would the machine be capable of taking two people, say, to Bournemouth without dismounting (total weight about twenty stones)?—F. M. R.

(1.) The machine you mention is reliable. (2.) The gear in question is thoroughly to be recommended; it is better than a two-speed gear. (3.) Netherhall Gardens would be just about the limit for a 3½ h.p. single-cylinder. (4.) Standard cover about 2,000. (5.) Yes. (6.) Seventy to eighty miles to the gallon. (7.) The machine should certainly take you to Bournemouth without dismounting. You must, however, bear in mind that a 3½ h.p. does not allow very much reserve of power for sidecar work.

Lanark to Gravesend.

At Whitsuntide I am likely to be in Scotland, and intend riding from Lanark to Gravesend. Could you kindly advise me as to which is the best route, going through the Lake District? I shall also be glad if you can tell me how I could conveniently avoid going through London.—R. J. C. S.

Your best route would be as follows: Lanark, Symington, Abington Inn, Beattock, Lockerbie, Gretna Green, Carlisle, Bothel, Keswick, Ambleside, Windermere, Kendal, Lancaster, Garstang, Preston, Rufford, Ormskirk, Rainford, Rainhill, Widnes, by the Transporter Bridge to Runcorn, then through Northwich, Congleton, Leek, Ashbourne, Derby, Loughborough, Melton Mowbray, Oakham, Stamford, Wansford, Stilton, Huntingdon, Godmanchester, Cambridge, Chesterford, Saffron Walden, Dunmow, Chelmsford, Billericay, Tilbury, by ferry to Gravesend. It is a fairly good road all through. The distance is about 400 miles. This route is the best avoiding London.

Wear of Tyres.

Since fitting a leather belt (Whittle) to my 3½ h.p. motor cycle I find a rubber studded back tyre does not last me for more than about 500 miles, solo riding. I have been advised by one friend to use a Lomax band, and by another a "Duco" steel studded tyre, but I really want a tyre that will last. Will the ordinary motor cycle licence cover the keeping and driving of a motor cycle and ordinary push cycle coupled together, thus making a four-wheel machine?—E. J. J.

We regret that we are unable to advise any particular tyres. Both the makes mentioned have a good name. We would advise you to make certain your wheels are in track, as we have used the combination of Whittle belt and rubber studded tyre with very good mileage results for both. The addition of a push cycle coupled to a motor cycle converts the machine to a four-wheeler, or, under the present law, a car. A car licence is, therefore, necessary.



JACK SCRIVEN, ONE OF YORKSHIRE'S BEST KNOWN RIDERS.

Until his illness, Jack Scriven, of Bradford, was well nigh invincible on a motor cycle in the North. After a spell of car driving, he has returned to his first love—the motor cycle—his selection being a 1912 Scott, on which he was seen for the first time at the Leeds M.C.C. Beulah hill-climb. He is depicted chatting with Messrs. Wheater and Whittle, prominent members of the Leeds club.

Langley (Bucks.) to Helston (Cornwall).

I should be glad if you would mention the best road to Helston, Cornwall, for 8 h.p. and sidecar. —A.W.S.

Your best route would be as follows: Slough, Windsor, Egham, then take the main Exeter Road through Basingstoke, Andover, Salisbury, Wilton, Shaftesbury, Yeovil, Chard, Honiton, Exeter, Crediton, Okehampton, Launceston, Bodmin, Fraddon, Ladock, Truro, to Helston. The road through Truro is better than that through Redruth. From Fraddon to Truro *via* Ladock (not Mitchell) is one of the best roads in Cornwall or any other county.

Fitting Springs to Back Wheel.

(1.) What objection is there, if any, to springing the rear members of the Triumph after the manner of the N.S.U.? The Triumph frame is hinged near the bottom bracket, and perhaps the firm's own front fork spring and buttress could be adapted. Does any other firm supply spring attachments for Triumph? (2.) Which will last the longer, steel studs or rubber studs doing the same work and of the same size? (3.) Do you recommend the Lomax band for tyre economy? (4.) Is it detrimental to the engine to use paraffin and petrol mixed. I seem to get more power, and starting is unaffected.—L.M.B.

(1.) We do not know if there is any real objection to carrying out the modifications suggested except that it is rather a pity to try experiments with so fine a machine. You could use a spring seat-pillar fitted with steel or air springs, of which several are marketed. (2.) Probably the rubber studded tyre. (3.) We can recommend the band in question. (4.) No, provided you do not use too much paraffin there is no harm.

Care of a Clutch.

My machine is a free-engine Triumph, and in starting the clutch continues to slip for a time after I have removed my foot from the pedal. There is no sign of slipping when once the clutch is in, even on the stiffest hills. (1.) Can this be due to worn plates, or is it caused by the lubrication being too thick? If the latter, would the injection of a little paraffin put matters right? (2.) How would the injection of paraffin affect the wheel bearings? (3.) In what position should the spark be when starting by the clutch? (4.) Can this particular clutch be successfully slipped in traffic without danger of ruining it? (5.) Is the ordinary lubrication of the back wheel axle also sufficient for the needs of the clutch?—A.P.

(1.) If you put a little thin oil into the clutch we think it will cure the trouble. After all, it does not appear to be very serious. (2.) If you take our advice there will be no need to put any paraffin in the wheel bearings. It would do no harm, provided that they are properly oiled afterwards. (3.) The spark should be nearly fully advanced. (4.) The clutch will stand a good deal of slipping, but, of course, this should not be overdone. (5.) The Triumph Co.'s handbook will give you full information regarding lubricating the clutch.

Registration and Licence for A.C. Tricar.

Can you tell me where I can register an A.C. tricar as cycle, so that I may use it under the motor cycle £1 tax? The local authorities in my district will only register as car and want the car licence of £2 2s.—G.E.T.

We are afraid it is impossible at the present time to register an A.C. tricar as a motor cycle. The authorities now know a good deal more about certain motor cycles than they did a few years ago, and they all know that this machine is well over the 3 cwt. limit. The fact that the machine has not more than three wheels renders it eligible for the £1 local taxation licence, but it must be registered as a car. If the authorities in your district refuse the £1 local taxation licence they are clearly in the wrong, and we should recommend you to place the matter before the legal department of whatever motoring organisation you belong to.

Setting Plug Points.

My machine is a 1908 twin Rex de Luxe, and runs perfectly on the level at 20 to 25 m.p.h., but when I want to go faster or to climb hills I cannot get a suitable mixture to fire. What I want to know is: (1.) Should the magneto platinum points be set very fine to fire a stronger mixture with plug points as close as possible without touching, or can you give me a better setting? (2.) Do you think I should get much better results from a 1912 B. and B. carburetter in the place of the one supplied with machine?—T.H.C.

Do not have the platinum points separating very wide, but you may overdo close setting as regards the sparking plug points. You had better try the points until you find which is the best gap. You may get misfiring at slow speeds if the gap is too small. You will get better results from a modern carburetter, when properly adjusted to the engine.

READER'S REPLY.

Oiling an Engine-shaft Gear.

With reference to the query, "Oiling an engine-shaft gear," in the issue of the 2nd inst., the writer need have no anxiety on the point of whether the gear is getting oil, so long as he can see oil coming through the square opening on the outer side of the gear, into which the tool provided for the purpose of adjusting the gear fits, assuming, that is, that the machine is also a N.S.U., the explanation being that the shaft is hollow with the express purpose of allowing the oil pumped to the engine getting through to the gear. I rode my N.S.U., bought in August, 1909, over 8,000 miles before parting with it, and never once oiled the gear. On the other hand, if the machine is not of the same make as the gear, it is then, of course, necessary to inject oil, as you state in your answer. In the new models of this gear a long screw has been fitted by the makers to stop the oil coming out at this opening; to inject oil, this screw has to be removed by means of a thin screwdriver and oil injected with a "gun." I use Price's lubricant jelly, which must first be heated.—A.P.S.

NOTE TO QUERISTS.

If "B.F.H." (London), "J.McN." (Ballymena), "AD 2075" (Acock's Green), and "A.J.W." (Swindon) will comply with our rules and forward stamped addressed envelopes we shall be pleased to forward replies to their queries.

EXPERIENCES WANTED.

"E.K.R." (Manchester).—A.C. tricar.

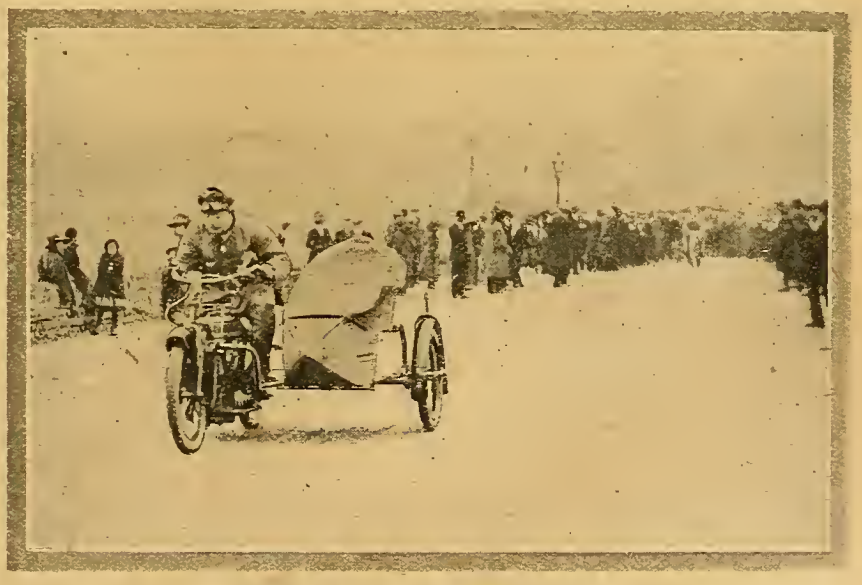
"S.L." (Maidstone).—3½ h.p. T.T. Rudge.

"A.F." (St. Helens).—Jones petrol atomiser.

"C.E.R.B." (Oxford).—6 h.p. Royal Enfield with sidecar.

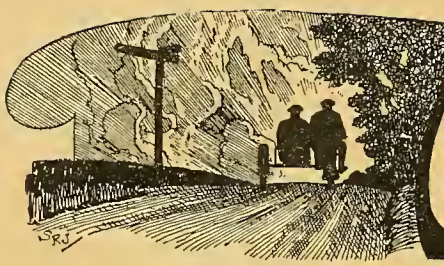
"R.D.C.D." (Punjab).—3½ h.p. Triumph, two or three-speed, with sidecar, in hilly country such as Devonshire.

"Rector" (London).—J.A.P. or other automatic carburetter on 3½ h.p. Bradbury and sidecar.



HANDICAP HILL-CLIMB AT BEULAH HILL.

J. Bateson (8 h.p. Chater-Lea sidecar) leads from Wilkinson (6 h.p. Matchless) in the Leeds M.C.C. contest, but is eventually overtaken higher up the hill.



Traffic Dodging Routes Across London.

On March 14th we published a map, issued by the R.A.C., giving a circular route round London which should be useful to those who wish to avoid the Metropolis itself when riding to places beyond. The following article and maps will show the more desirable routes to take when passing through the suburbs, and should be especially useful to those who reside in the suburbs or in London itself.

AS enquiries are frequently made by riders living on the outskirts of London who wish to get across and escape the traffic, especially tramcars, as far as possible, the following routes may be useful to many. Street names are given as far as possible to allow of the routes being followed on any large scale map. The greater density of traffic in the north and east makes it inevitable for both routes to pass south and west of the central districts.

Route A. West to East.

Bearing in mind the great extension of London in a westerly direction, and the fact that the typical western road, the Bath Road, leads infallibly to Brentford, the starting point will be fixed some distance out, namely, at Staines. This is a centre easily reached from Reading, Windsor, Bagshot, etc. In the main street turn right as directed by the sign-post for Sunbury and Kingston. This road may be followed past Hampton Court and through Kingston, then joining the Portsmouth Road and proceeding over Wimbledon Common to Wandsworth. It is better, however, to turn left at Sunbury Station (four miles from Staines) for Twickenham, continuing straight on with the tramlines to Richmond Bridge, where the trams cease. Shortly before reaching the bridge, and right through Richmond, a ten-mile limit is imposed. After the short rise from the bridge, turn to the left down the slope—many maps wrongly show it proceeding straight on—then to the right at the bottom (George Street), and take the right-hand road at the fork which follows. The Upper Richmond Road is soon reached, which provides a delightful run over well-laid wood paving with scarcely a break for four miles, of which, however, the first portion is occasionally trapped. A double bend at Hogger's Corner and the crossing at Putney High Street require care. After passing East Putney Station, the alternative route *viâ* Kingston is joined.

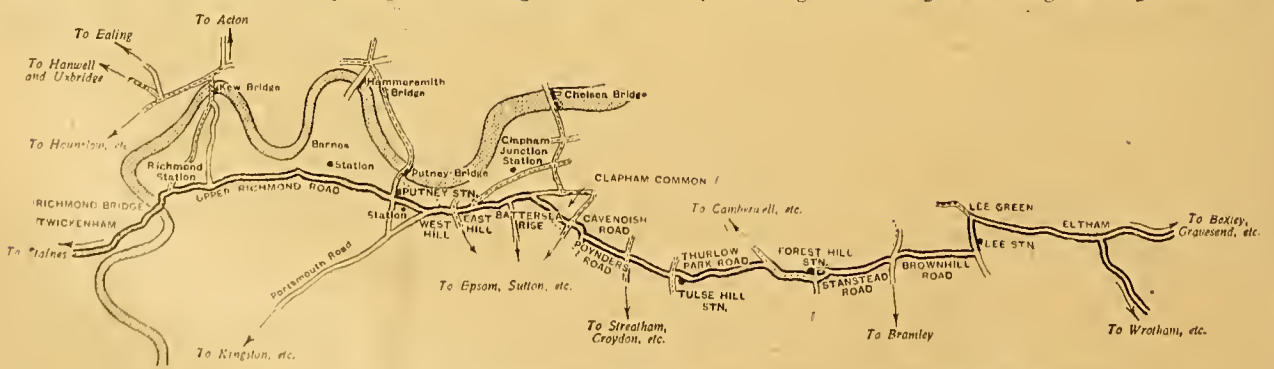
Continuing on through Wandsworth, cross over the tramlines at Garratt Lane, and ascend East Hill, which should give no trouble. Take the right-hand side of the building which faces you at the top, thus avoiding the trams which run to the left, and proceed along past Wandsworth Common and across the railway. The road (Battersea Rise) now dips to an awkward crossing, and rises again to Clapham Common. Here turn right immediately, and proceed along a road, occasionally somewhat bumpy, which crosses the common near this edge. On the right a narrow strip forms a tennis ground. Just before leaving the common take the left-hand fork, and cross straight over the tramlines (Clapham Road) to Cavendish Road. Follow this road as it bends to the right, and then immediately turn to the left along the wide Poynder's Road, which, continuing as Queen's Road and Streatham Place, leads to the Streatham Road. Again cross straight over to Christchurch Road, which terminates at Norwood Road.

Here turn to the left for a few yards to clear Tulse Hill Station before turning to the right along Thurlow Park Road and on through Dulwich Common Lane to Lordship Lane. From this point follow the trams to Forest Hill Station, to which the road drops after a steady climb up London Road. Cross the railway and turn to the left along Stanstead Road, which soon resumes your original direction by bending to the right, and leads past Catford Station to Rushey Green (Bromley Road). Again turn to the left for a few yards and then to the right along Brownhill Road to Burntash Road, where a further sharp left-hand turn leads past Lee Station to Lee Green. Turning to the right, there is a clean run through Eltham to Maidstone, or *viâ* Bexley and Crayford, the Canterbury Road can be joined, Blackheath and Shooter's Hill having been avoided.

The Chief Feeders.

In dealing with the chief feeders, it may be assumed that riders starting from districts south and east of Kingston will follow a wider sweep than the road given. Kingston itself has been already mentioned. From Hounslow the road to Richmond is very difficult to follow, so that through Brentford to Kew Bridge seems the only course. From Hanwell, Ealing, and Acton, Kew Bridge is also easily reached. Cross the bridge, and for simplicity, follow the horse tram tracks to Richmond, where, after passing the railway station, turn to the left at the fire station into the continuation (Sheen Road) of the Upper Richmond Road. A shorter route is to turn left at the far side of Kew Green, and taking the first on the right (Sandycombe Road) cross the railway at the gasworks, taking the right-hand side of the gasometer (sign-post directs to Richmond Hill), and then joining the Upper Richmond Road at the Black Horse.

From Willesden and Harlesden there is a fairly quiet tram road to Hammersmith, where the Broadway has to be negotiated. At the present time this crossing is undergoing improvements It is then best to follow Fulham Palace Road over Putney Bridge and along the High Street. The



Route A, crossing London from West to East, avoiding most tram routes and thick traffic. The tram lines are denoted by dotted lines.

Traffic Dodging Routes Across London.—

route is joined at Putney Station, where turn left.

From districts lying north and east of these, if Route B below be followed to join the other at Clapham Common, this comparatively slight detour will enable all the worst of the central traffic to be avoided.

Route B. North to South.

In traversing London from North to South, it has been found somewhat difficult to choose the best road. Although the route given comes as near the centre of London as the Marble Arch, yet it has the great advantage of simplicity on the northern side. The recent improvements, moreover, at the Marble Arch have robbed this crossing of much of its difficulty. On the southern side, it has not been found possible to avoid trams to the same extent as on the other cross route, but those encountered are mostly newly laid on wood-paved roads, and there are very few points of difficulty.

Starting from Barnet, then, to ride across to the Brighton Road, follow the North Road to Friern Barnet, where, instead of continuing on to Highgate, take the right-hand road to Golder's Green and Child's Hill. Just after passing the tram terminus, when the road shows signs of dropping, bear right at a horse-trough, but do not turn sharply. The road bends to the left, falling rather sharply at first, and leads into West End Lane, which is followed through some variations of surface and width until it ends at the Edgware Road. At one junction the correct road is not obvious, but the name is prominently posted on the wall. The termination in the Edgware Road is rather narrow, and its position should be carefully noted with a view to the return journey. Bank premises stand at one corner, and, turning left and proceeding south along the Edgware Road, Kilburn Station is reached.

Southwards from the Marble Arch.

Now follow the Edgware Road to Marble Arch. It is a fine wide road, with very little slow traffic to cause obstruction, and none but an absolute novice need fear it. Pass across the Park to Hyde Park Corner, and proceed straight over along Grosvenor Place, keeping the wall of Buckingham Palace grounds on the left, and turn to the right along the front of Grosvenor Hotel (Victoria). Continue as straight as possible by steering round a refuge, and immediately turning to the left (Commercial Road). When further progress is barred, turn to the left over Chelsea Bridge, and follow the trams along Queen's Road, crossing other tracks in Battersea Park Road, and then Wandsworth Road, until Clapham Common is reached. On the opposite side of the Common lies the direct Epsom Road, which can be reached at once by circling round the eastern end. It is advisable, however, to make a detour by turning to the right along the north side. The first turning to the left across the Common leads direct into the Brighton Road *viâ* Cavendish Road, etc., as in Route A.

Continuing along the north side, drop down Battersea Rise and climb the other side—quite a gentle slope—until near the top a cemetery is seen, where turn left along Bolingbroke Grove, which runs beside a common similarly named. At the end of the common bear to the right across the railway, turning to the left at the foot of the bridge. (St. James's Road, leading to Trinity Road.) For Streatham and Croydon cross over the main road along Tooting Bec Road, and at the end of it make left and right round a fountain. For Epsom, Horsham, etc., turn to the right instead of crossing over. For Mitcham, Sutton, and Reigate also turn to the right as far as



Route B, crossing London from North to South.

the misnamed Tooting Broadway (tramway crossing), and then turn to the left.

This is also the commencement of a useful by-pass which avoids Croydon and joins the Brighton Road at its junction with the Eastbourne Road at Purley. At the clock-tower at Mitcham Green, soon after entering the ten-mile limit, bear to the left, and after crossing the first railway bridge turn left again. Now take the first road on the right, which passes the railway at a level crossing and continues in unmistakable fashion past Beddington to Purley Station, just at the tram terminus. At the only point where doubt might arise a sign-post points to the right fork as the road to Purley, which is finally reached by a steep drop down Plough Lane, which appears as the right hand road of a fork on the return journey after having turned left out of the Brighton Road. This road through Beddington is to be preferred to the parallel one through Wallington, which comes out farther south still.

The chief off-shoot from the main route is to join the Portsmouth Road, and is as follows: Proceeding down Grosvenor Place from Hyde Park Corner, watch the wall of Buckingham Palace on the left. When it terminates at a side road turn right directly opposite, and continue as straight as possible past Sloane Square and along King's Road, turning to the left when the tramlines are met to cross Putney Bridge. Continue straight on up the hill, turning to the right on reaching the Heath and proceeding *via* Kingston, etc.

How to Join the Route.

To join the route on the northern side make for the Edgware Road, or for Hammersmith and Putney, as indicated under Route A. To avoid trams from Hammersmith to the Portsmouth Road cross the bridge, and at the end of the broad Castelnau turn left for Barnes Station. Cross the Upper Richmond Road and follow Roehampton Lane until the Portsmouth Road is joined at the top of the hill. For the Brighton Road or the Epsom Road turn left at Putney Station along the Upper Richmond Road as far as Wandsworth, and then turn to the right along the tram track (Garratt Lane) to Tooting Broadway. Here join the Epsom Road or proceed to the Brighton Road *via* Mitcham.

From Cheshunt, Waltham Cross, Enfield, etc., riders may either strike across country to the North Road or tackle the Seven Sisters Road and Camden Road from South Tottenham, circling Regent's Park and passing Lord's cricket ground before joining the Edgware Road. R.J.T.

A CYCLOMETER TRANSMISSION.

Mr. C. C. Hawkins, C.I.E., Bridgemary, Fareham, Hants, sends us particulars of a device he has patented for driving an ordinary cyclometer on the handle-bar. The device consists of a bracket clipped to the handle-bar, which will take a Veeder or Lucas cyclometer. On the bracket is a bearing, in which runs a small flexible shaft, ending in a prong coupling, which engages the star wheel on the cyclometer. At the other end of the flexible shaft is another bracket for attaching to the front wheel spindle. This bracket also carries a bearing for the end of the flexible shaft, and on the extremity of the latter is a star wheel similar to the one on a cyclometer, and which takes the drive from the small roller fixed to the spokes of the front wheel. The cyclometer is always under the rider's eye and is away from dust and mud. The inventor informs us that he has had one of these cyclometer drives in use for a long time and has found it to work perfectly.

THE PUCH SIDECAR.

AN ORIGINAL DESIGN WITH SEVERAL NEW POINTS.

INASMUCH as the sidecar is a thoroughly British production, which only within the last few months has shown any signs of gaining favour in America and on the Continent, one would suppose that for some time to come home manufacturers will introduce new ideas in sidecar design. It is true that the sidecar has been improved very much, but except in point of body design and detail fittings not a great deal of change has taken place. Hence the new ideas which are contained in an Austrian design should not fail to be of interest.

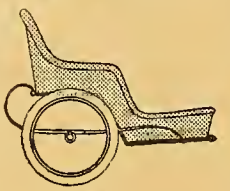


Fig. 1.

At first sight the Puch sidecar presents much the same appearance as any other, though it must be admitted that the shape of the body is not quite of the most modern type. As a matter of fact, however, its construction is quite different. In the ordinary design the "chair," or body, is slung both fore and aft upon S springs, which, in turn, are supported upon a rigid chassis. In some cases this chassis is itself sprung from the axle, but in the ordinary and most common type the frame is rigid. The principal individuality of the Puch design is that there is no rigid chassis at all. As shown in fig. 1, the chair springs, which are attached at the seat and the toe, are carried direct on the wheel axle, which is made of unusual strength, and is connected to the chain stay and back hub of the motor cycle in such a manner that it cannot possibly twist round. It is, as usual, further reinforced by a cranked diagonal tube leading from the saddle pillar clip to the stub end. The sidecar chair is made of wicker, underneath which is a light steel tubular framework, which follows its under contour and upon which it is built up. This framework is shown in bold lines in the sketch. From the

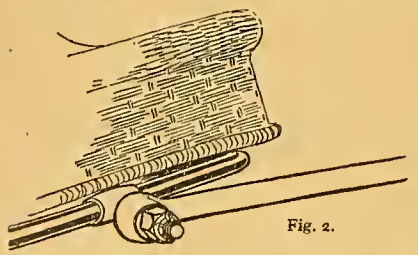


Fig. 2.

front end of it there proceeds a tubular cross-piece to the steering head of the motor cycle frame; this cross-piece acts as a coupling rod, and is jointed at each end as shown in figs. 2 and 3.

The Distribution of Weight.

The loose joints allow the "toe" of the sidecar to rock up and down quite freely under the action of the springs. At the same time they ensure that none of the passenger's weight comes upon the bicycle steering wheel, all of it being taken upon the sidecar axle.

The principal advantage of the system is that a general reduction of weight is effected, to say nothing of simplifying the whole design. The chair frame weighs, of course, very much less than the ordinary chassis. On the other hand, the system is open to some objection on the score that most of the tractive effort has to be transmitted through working joints, the wear upon which, and strain, may be somewhat excessive, and as a corollary to this the chain stays of the cycle frame may be liable to be strained. Certainly, however, there appeared to be no signs of wear or strain upon the model we have had the pleasure of inspecting, although it is quite clear that the combination has travelled a considerable distance. Another point that struck us as being open to objection was the fact that the sidecar joints are not particularly easy of detachment, as they are of the plain split-pinned nut and bolt variety.

Points for Designers.

The Puch sidecar, however, contains several points which deserve the attention of home designers, and undoubtedly

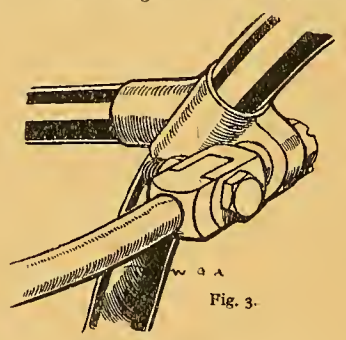


Fig. 3.

show that it has been produced by a practical man.

Point number one is that the sidecar joint lugs are made permanent attachments to the cycle frame. This, in our opinion, is far and away the best plan, as it prevents the tube being strained by careless handling with a big spanner, preserves enamel, and facilitates the initial setting and alignment.

Point number two. There is a spare petrol tank in addition to the unusually large capacity of the main one. It seems to us that there is little reason why such an eminently useful and simple attachment should not be made an integral part of every sidecar (see fig. 4). No one likes stopping for petrol, yet to carry a spare tin either inconveniences the foot room of the passenger or makes it necessary to kneel in the road when a roadside fill-up is wanted. Petrol cans are also not the last word in æstheticism. The Puch spare tank holds, we judge, about one and a half gallons—the weight of which is sprung—and is fitted with a pump connection nipple whereby the main tank can be quickly refilled through a rubber tube with no liability of wastage or danger from fire. Painted to match the rest of the machine, it is also not in the least unsightly.

Point number three consists in the fact that a very practical sprag is fitted, which is simplicity itself, and is just a fork-ended tube pivoted to the sidecar axle and normally held off the ground with a strap. Anyone who has used a sidecar in really hilly country will realise the value of this inexpensive fitting, not only in holding the machine up when it is stopped on a hill, but also

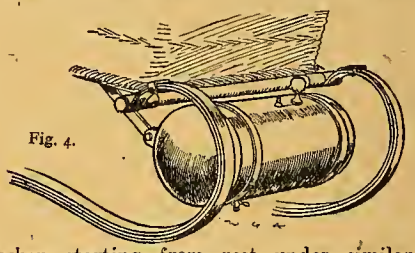


Fig. 4.

when starting from rest under similar circumstances. There is, furthermore, no reason that we can see why such a sprag should not upon occasion be made to serve the purpose of a stand, when repairing sidecar wheel punctures.

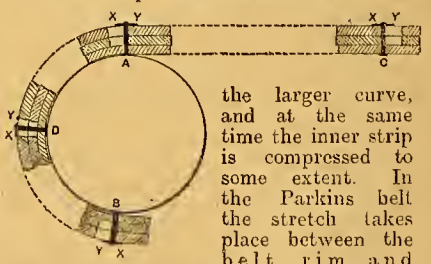
The fourth point is that the upholstery of the sidecar is carried out in really good glazed patent leather, which will stand any amount of wear and weather without looking in the least shabby. It does not scratch, nor does it tear, and can easily be cleaned up after a dusty run to look as glossy as when new. There is no doubt that its employment would add but little to the initial cost, and, in any case, the additional expense would be well justified.

Fifth point. A silencer of sensible dimensions is attached to the sidecar axle, and coupled by a long tube to a small exhaust pot near the engine.

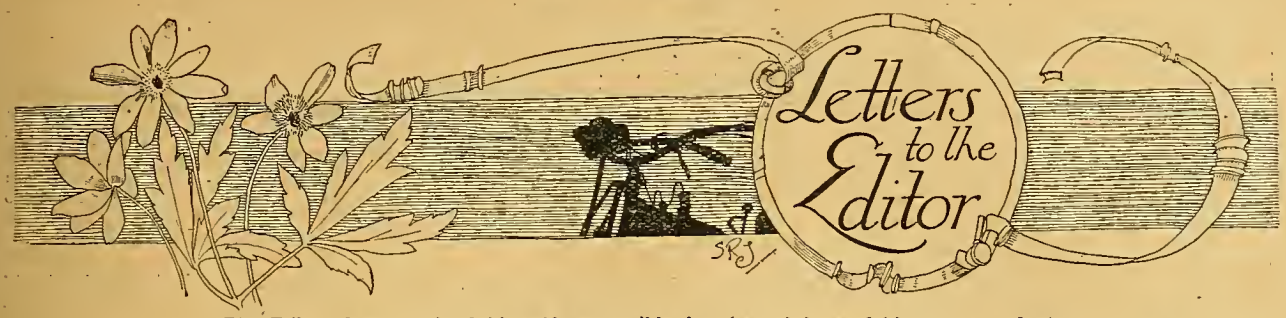
The address of the Puch Motor Cycle and Car Agency is Ladbroke Road, Notting Hill, W.

THE PARKINS MOTOR CYCLE BELT.

The belt which we illustrate herewith is made on a new principle. When an ordinary leather belt bends over a pulley the outer strip has to stretch as it takes



the larger curve, and at the same time the inner strip is compressed to some extent. In the Parkins belt the stretch takes place between the belt rim and pulley, viz., on the straight portion of the belt instead of on the curved. This is brought about by the rivets moving in slots in the two outer strips. It will be noticed that at A, where this first contact of the pulley takes place, the point Y is next to the rivet. At D, the mid-position on the pulley, the rivet is half-way between X and Y, while at B and C, the last contacts with the pulley and belt rim, the rivet is close to X. This shows that the strips slide over one another as the belt moves round, and thus it is claimed make the belt more pliable than it would otherwise be.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street E.C., and should be accompanied by the writer's full name and address.

A Suggestion Regarding Competitions.

Sir,—As a keen motor cyclist, I write to suggest that some of the reliability trials and special events be held occasionally on another day in the week than Saturdays, say Thursdays. My business will not permit me leaving on a Saturday, and I am convinced there are thousands of business and professional men in the same position, who, if another day were fixed, would take the opportunity of taking part in or witnessing these special events.

ONE IN A THOUSAND.

Manufacturers' Resolution re Hill-climbs.

Sir,—I regret a mistake has been made in the wording of this resolution.

Will you please cancel my last communication, and accept the following amended matter:

Resolved: "That in future members of the Motor Cycle Section will not support either by entries or by contributions to prize funds any hill-climb or any reliability competition which includes 'timed' hill-climbs, unless the personal assurance of the promoters is given that the hill, in the case of a timed hill-climb, or timed hills, which may be selected in reliability trials, are free from dangerous corners or hair-pin bends." ALF. BEDNELL (Secretary),

The Cycle and Motor Cycle Manufacturers' and Traders' Union, Limited.

Washing Shower-proof Overalls.

Sir,—In answer to J. L. Hoffmann's query *re* the washing and proofing of overalls [page 494, May 2nd], they can be washed in the ordinary way. After washing, pass the garment through a warm soap bath, 1 lb. to the gallon. Leave in the soap bath for about half an hour so that the soap will penetrate; it should then be removed, wrung out, and passed into an alum solution—alum, 1 lb. to a gallon of water. After removal from the alum solution the garment should be again wrung out, passed once or twice through clean water, and then put through a mangle. The object is to get the cloth saturated with soap solution, so that the alumina soap is deposited in the fibres. It should be dried in the open air. When finished it will be quite waterproof.

R. MASON.

Carburetter Design.

Sir,—*Re* your description of "A Simple Carburetter without a Float Chamber," page 458, issue April 25th. I do not know whether this is supposed to be a new idea for a carburetter, but I may say that my old Mitchell machine was fitted with a carburetter identical with that described by Mr. B. Cooper. I still have same in my possession, and would be pleased to submit it for your inspection. It must be about ten years old now, but still works well, though I had to give more air (about two years ago) by opening up the intake. I cannot understand this, as the carburetter worked all right up till that time, and then quite suddenly refused to supply enough air, and it still has the holes drilled to supply the needful. I find that, unless the needle valve is kept open only just sufficiently to supply enough petrol for the conditions, it is rather extravagant, but I run on just a minimum, and open the needle valve when required.

SEVEN YEARS' READER.

Sidecars and Modern Lightweights.

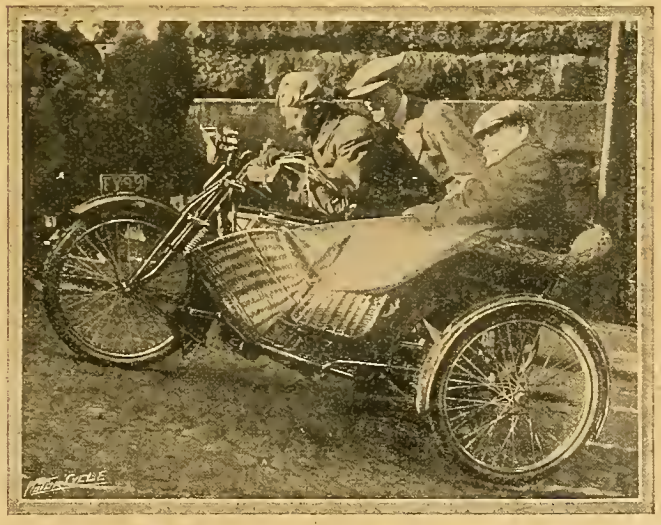
Sir,—It may interest some of your readers to hear the results of attaching a light sidecar to my 1911 model E Douglas.

I had not previously driven one until the 27th ult., but after a short spin without a passenger I found one sufficiently daring to trust herself in my hands. To my surprise the little twin made comparatively light of Highgate Hill on the low gear and took Barnet Hill on top, and continuing my trip to Hitchin I had only to use the low gear occasionally, and, but for a strong headwind, I think this would have been unnecessary. I might add that I have no interest other than that of a thoroughly satisfied user.

R. W. WEBB.

Dangers of Running Backwards on a Hill.

Sir,—I am the fortunate possessor of a Rudge Multi and No. 4 Gloria sidecar complete, which I have acquired for touring purposes. The total weight of combination, passengers, luggage, and tin of petrol is just over 5 cwts. With this weight my Rudge has taken White Horse Hill, Canterbury Road, at 32 m.p.h. This speaks volumes for engine power and the variable gear. There is, however, one danger always to be looked for on hill work with a combination; and that is belt breaking and the running backward of the machine. Of course prompt application of brakes may prevent this, with the prompter exit of the passenger; but promptness of the latter in a torpedo sidecar is not always possible. In order to obviate this *contretemps*, I have had a sprag fitted to the sidecar operated by a strap from the motor cycle. The sprag does not grip the ground rigidly on contact. It is bolted on the axle with a certain amount of revolving "give" thereon. The driver drops the sprag, at the same time slightly releasing foot brake pressure; allows the machine to move backward until he feels



Quite recently, Hugh Gibson (3½ h.p. two-speed Bradbury sidecar) climbed Arthur Street, Edinburgh, with three passengers whose combined weight was thirty-six stones. He also ascended the Mound with two passengers.

the sprag hold the ground. Rider and passenger can then dismount with ease. Experimental use of this sprag on a steep decline proves its efficacy, and I think sidecarists should consider the utility of the suggestion. I have communicated the idea to the makers of the Gloria sidecar, and recommend it to your readers. D 7580.

Unofficial Records.

Sir,—There seems little doubt that several attempts on long-distance records will be made during the coming summer, and it would surely be a wise move if a body were to be formed to hall-mark such performances. It may be urged that such a body would be acting illegally; but I cannot agree with this contention, since their supervision would not in any way prevent action being taken by the A.C.U. or the authorities. The time is not far distant when someone will beat the six days' record by one mile, or the End-to-end by five minutes. As things stand, it is necessary for the individual claimant to record honours to prove that he has been honest, and it speaks volumes for English sportsmanship that there has been no question of *bona-fides* up to date.

It is all very well to say that such attempts should not be permitted, but they never will be entirely suppressed so long as men wish to go one better than their predecessors, and therefore every effort should be made to check such rides. The A.C.U. could still drop heavily on to the malefactors, and would no doubt apply to the R.R.A. (Road Records Association), who would be bound to assist.

I have promised the A.C.U. that I will take no part in racing (?) on the road until June, 1913, and therefore have no interest in any proposed association, but I feel that something of the kind should be done before some dispute about time or distance arises. I. B. HART-DAVIES.

The Problem of the Automatic Carburetter.

Sir,—We seem to be hearing a lot about the automatic carburetter just now, and I should like to know what faults there are in the Fafnir carburetter and the means of control that that firm employs, namely, a variation of the lift of the inlet valve. This seems to me the right method—not to alter the quality of the charge, but the quantity sucked into the cylinder. J.G.B.

Sir,—I am particularly interested in the short article by "E.M.O." in your issue of May 2nd, and coming as it does from one who has evidently some experience of carburetters, it has some weight.

It is rather a coincidence that until a month ago I held practically the same views regarding automatic carburetters as "E.M.O.," and after studying the effects of results of various different makes of automatic carburetters, single and multiple jets, my mind was quite made up that the hand controlled carburetter was more satisfactory in the end, because it satisfied all the claims made on it by throttling, engine revolution, temperature, and density of spirit.

But just lately the Lukin carburetter has been brought before my notice and it seems to me that the vexed problem of carburation has been solved once and for all. I have personally tested almost every carburetter on the market, and no results are so satisfying as those given by the Lukin. More power and speed can be obtained than with the ordinary two lever carburetter. Dead slow running and "lightning" pick up acceleration are, perhaps, its strongest claims, where the throttle is closed a further movement of the lever allows the ports to open and cold air is drawn into the engine. This means cooling of the engine and a scavenging effect.

The Lukin principle is unlike any other, excepting that it has the ordinary float feed. The vaporisation of the mixture is proportioned "just right." Air is sucked in through the ports direct to the inlet valve, at the same time being impregnated with petrol vapour. The jet is fixed to the base of the carburetter. The petrol is sucked out of the two holes in the jet and passes through three holes in the spindle. It is obvious, therefore, that the vapour must be supplied in proportion to the port opening. This is effected by means of a second pair of plates above the jet in the top of the spindle. These provide three more ports which move simultaneously with the bottom ports, thereby increasing or decreasing the vacuum above the jet inside the spindle, and therefore the suction on the jet and the supply of vapour. At "full throttle" the top ports are dead shut, thereby causing maximum suction. As the spindle is revolved, closing the bottom ports, it proportionately opens the top ports, reducing the suction. Owing to the design of the ports the mixture is kept correct at all openings of the throttle. While I appreciate a good deal of what "E.M.O." writes, I think it is manifestly unfair to class the Lukin synchroniser among those modern "automatic" carburetters seemingly designed on the assumption that the engine speed varies always with the position of the throttle. It may be necessary to point out that I have no interest in the "Lukin device" beyond that it strongly appeals to me on scientific grounds.

W. GALLAWAY DUNCAN, M.I.M.E., M.I.A.E.

Sir,—I am flattered to think that my little article should have attracted the attention of such a well-known carburetter scientist as Mr. Charles Binks.

With regard to his first point, as to the petrol level, I contend that my statement is correct. Of course, my remark was meant more as a guide to those who use the standard two-lever carburetter, and I do not wish it to be taken as expressing a scientific dogma. The fact that an engine fitted with the Binks carburetter will go on running after the petrol tap is turned off has no bearing on the question at all. This virtue (if virtue it be) is not confined to the Binks carburetter. My Triumph runs for about 300 yards after the petrol tap is turned off, which distance would, I suppose, about empty the float chamber. It is one thing, however, for an engine to run with a low petrol level, and quite another thing for it to run well. I question very much whether Mr. Binks attaches as little importance as he pretends to the adjustment of the petrol level in the article he sells. Also, is it not one of the claims made for the Binks racing carburetter that when ascending a hill the jet at the end of the venturi tube gets an extra supply of fuel owing to the alteration in petrol level and increases speed?

With regard to my statement that on opening the extra air port, no more air is admitted to the cylinder, I cannot accept Mr. Binks's denial. While admitting that under abnormal conditions the volume may be increased, yet I maintain that in the main this is not so. I was correcting a rather prevalent notion that when the extra air lever is opened the flow of petrol remains constant, and the volume increased by the amount of the extra air admitted. This idea is incorrect, as I think Mr. Binks will admit.

As to the respective working limits of a car engine and a motor cycle engine, surely Mr. Binks does not seriously contend that a single-cylinder car engine works between such extreme limits as does a single-cylinder motor cycle? The presence of a gear box on every car shows the fallacy of this argument.

It is certainly a great achievement to have evolved a carburetter that will automatically give an explosive mixture at all speeds, but there is a great difference between an explosive mixture and a perfect mixture. E.M.O.



COVENTRY AND WARWICKSHIRE M.C. OPEN RELIABILITY TRIAL.
Climbing Saintbury Hill. V. Taylor (Rudge) is seen passing C. T. Newsome (Rover), whose belt jumped off the pulleys.

Sir,—One can hardly allow the egotism of Mr. C. Binks, as exemplified in your issue of May 9th, to pass unnoticed

I notice that he attacks your correspondent for stating "that petrol level must be kept close to the top of the jet in all carburetters with one exception," and proceeds to quote the smaller jet of a two jet carburetter.

His remarks may be true, but why do the manufacturers of these instruments take such pains to secure a constant petrol level for their instruments, and insist on this level being maintained by careful float adjustments?

In the truly automatic carburetters, constant petrol level is not essential, and, in addition to the Senspray, the makers of the Stewart-Precision and Brooke carburetters place the float bowl some inches below the top of the jet.

I seem to remember a short while ago that Mr. Binks claimed that his carburetter dribbled petrol through the jet (excluding any suction effect) when a cycle was hill-climbing. I will make no comment on this theory beyond remarking that cycles may happen to be left standing in an inclined position, and the dribble still takes place.

It is interesting to have the views of Mr. Binks on the resistance offered by a choke tube. The modern carburetter often works with an air velocity of nearly 300 feet per second, and if restriction occurs at ninety feet per second, I fail to see how Mr. Binks justifies the use of a choke tube.

I was personally of the opinion that the choke tube as understood by Mr. Binks was becoming obsolete, and it is interesting to note that in a recent classic article on carburetters by R. W. A. Brewer, a recognised authority on carburation, appearing in *The Automobile Engineer* for April, at least ten of the modern successful carburetters did not use choke tubes.

Regarding Mr. Binks's glorification of the two jet principle, I need only quote Mr. Brewer as follows:

"There is of necessity a certain amount of stopping up which is far more pronounced than in other types."

Again, two jet carburetters "have been somewhat difficult to adjust, and have not been well understood by the user."

I am a believer in the future of the automatic carburetter, but the cause is not furthered by letters of the type indicated.

F. N. PICKETT.

The Trade and the T.T.

Sir,—Unfortunately, few are aware that the letter which appeared in the last issue under the above heading is written under provocation by one who is apparently tasting "sour grapes," and who is one of a firm of motor cycle makers who make an ordinary touring machine for single and passenger work, which, in this category, we must admit has proved itself reliable, but to suggest for one moment that this type of machine would stand a ghost of a chance in the Tourist Trophy race is preposterous. Thus it goes that if a grumble is required we must go to those who feel helpless to compete. I say, without fear of contradiction, that no counter-shaft driven machine could hope to compete with the speed required of the T.T. if it is only of 3½ h.p. [We would refer our correspondent to the last T.T. Race, in which a Scott machine with counter-shaft two-speed gear accomplished the fastest lap.—ED.]

I trust, sir, you will find space to include this letter in your next issue in the interest of the sporting trade generally.

ONE OF THEM.

Sir,—The manufactures who have actual experience of the T.T. race will learn with interest from your correspondent, Mr. Marians, that, by their participation in this sporting event, they have sustained a "loss which can hardly be over-estimated," and that the race has meant "dislocation of system"—"special models, many weeks testing by the firm's most highly skilled riders and testers, the establishment of depots, and a huge stock of parts" in the island.

It would be more convincing, and certainly most interesting to your readers, if those manufacturers who have signed the bond gave us a detailed list of "that huge stock of spare parts" required for their racing machines.

A. A. SCOTT.

Disqualifications at Leathley Bank.

Sir,—"Iveona" requests some information on the above. In Class 3, for standard single-cylinders, the judge disqualified Mr. Newman (previous to him competing, mind you) because the machine was not, in the judge's opinion, a standard model, and according to Mr. Newman's letter the judge was correct, for does not Mr. Newman say, "I now wish to state that the engine was a standard competition Ivy-Precision engine"? He himself uses the word "competition" in describing his engine.

In Class 7, for any single-cylinder machine, Mr. Newman was disqualified for touching the ground with his feet contrary to Rule E, which reads as follows: "No pedalling will be allowed; neither may competitors place the foot or feet on the ground *under any consideration*."

Coming now to the statement, absurd by itself, but far more absurd when made by a rider of Mr. Newman's calibre, "that no ordinary touring engine could climb the hill in the time that I took, etc." Mr. Newman knows very well that in Class 3 I myself informed him he had been disqualified, and this previous to the class being run. After some talk with him over the matter I interviewed the judge, who eventually agreed to allow all competitors, whether disqualified or not, to run, and should any of them desire to object, then on the chance of their objection being upheld, the officials would be in possession of their times, etc. This decision of the judge was shouted out to the competitors before the start of Class 3. And, by the by, Mr. Newman did not object.

In Classes 1, 2, and 4, Mr. Newman was not disqualified, and as he only ran in two other classes, viz., 3 and 7, both of which I have fully dealt with, I trust the matter will now be satisfactory to the majority of your readers, including "Iveona."

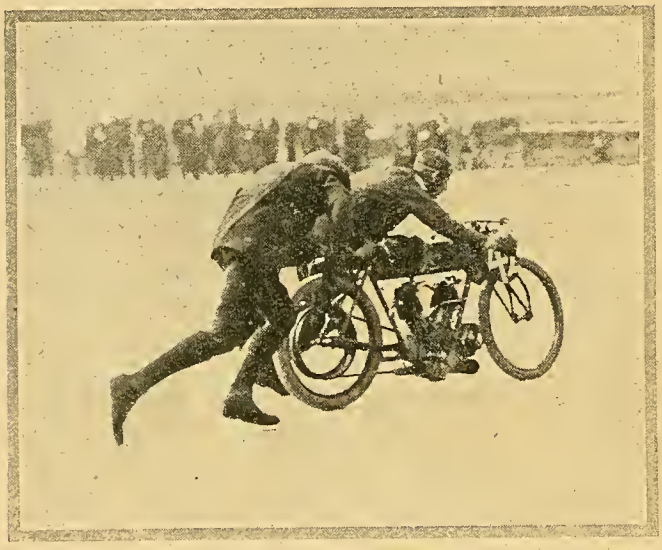
H. W. FORTUNE,
Hon. Sec. for the Leathley Hill climb.



Harrogate and District M.C.C. Handicap Speed Trials. W. Faweett (6 h.p. Zenith), after passing T. C. Atkinson (2¾ h.p. New Hudson) in the final. (See Club News pages).

B.M.C.R.C. MAY MEETING.

OWING perhaps to the clashing of other week-end events, many well-known names were absent from the B.M.C.R.C.'s programme at Brooklands on Saturday last, and possibly for the same reason the spectators in point of numbers did not come up to the usual standard. The time trials, which were conducted



C. R. Collier (8 h.p. Matchless-Jap), winner of the 1,000 c.c. race, starting.

on a part of the track almost invisible from the Fork, provided no very great excitement. Saturday was well-nigh ideal for time trials conducted down the railway straight, as there was a strong wind behind the competitors, and no one was surprised, therefore, to learn that records had been broken. The following are the flying mile and the flying kilometre results :

CLASS A.—Up to 275 c.c.

Rider and machine.	Kilom. Secs.	M.P.H.	Mile. Secs.	M.P.H.
H. Martin (1 Martin-Jap) ...	37.8	=59.18	59.8	=60.2

CLASS B.—Up to 350 c.c.

G. E. Stanley (1 Singer) ...	35.	=63.91	57.	=63.16
W. Hodgkinson (1 Caeco) ...	46.4	=48.2	75.4	=47.75

CLASS C.—Up to 500 c.c.

*G. E. Stanley (1 Singer) ...	29.65	=75.45	49.30	=73.02
W. H. Elce (1 Rudge) ...	31.8	=70.34	52.4	=68.7
S. R. Axford (2 Martin-Jap)	31.2	=71.7	52.2	=68.97
W. L. T. Rhys (1 Triumph) ...	34.	=65.79	56.	=64.29

*New record. Previous best: Km. 30.2os.; mile, 49.39s.

CLASS D.—Up to 750 c.c.

*H. Hunter (2 Corah-Jap) ...	28.75	=77.8	47.34	=76.04
*R. L. Printz (2 Bat-Jap) ...	29.28	=76.3	48.26	=74.6
C. R. Collier (2 Matchless-Jap)	30.8	=72.63	50.8	=70.87
A. J. Luce (2 Bat-Jap) ...	32.	=69.9	52.8	=68.18

*New record. Previous best: Km 29.78s.; mile, 48.76s.

CLASS E.—Up to 1,000 c.c.

C. R. Collier (2 Matchless-Jap)	26.2	=85.38	43.8	=82.19

CLASS E, with sidecar.—Up to 1,000 c.c.

*G. F. Hunter (2 Zenith-Gradua)	31.	=72.15	55.6	=64.75

*New record. Previous best: Km., 37.47s.; mile, 60.99s.

Printz improved on the previous best in Class D, but did not set up new figures, as Hunter had gone before him. G. F. Hunter also set up a new record in the sidecar class, and his figures for the kilometre are certainly extraordinary. They will, we imagine, stand for some little time. The successful Corah was provided with quite a new type of J.A.P. engine, which had been specially built for this rider, though its design conforms throughout to the usual overhead J.A.P. lines.

Car Challenge Race.

The second event was the 500 c.c. car challenge race, over a distance of three laps (8 miles 269 yards). The winners of the first and second prizes qualify for an invitation race with a selected motor car at the June Brooklands meeting.

G. E. Stanley took the lead from the start and was never seriously challenged, although Stanhope Spencer was hard on his heels at the end of the first lap. The gap between the two riders, however, slowly increased, and Stanley crossed the line 200 yards in front of Spencer, the third place being taken by Ayres, who managed to overhaul Elce in the last lap. There was a good quarter-mile between second and third. Winner's speed, 65.93 m.p.h. :

Rider and machine.	mm.	c.c.
1. G. E. Stanley (Singer)	85 × 88 ...	499
2. W. Stanhope Spencer (Rudge) ...	85 × 88 ...	499
3. N. A. Ayres (Singer)	85 × 88 ...	499
4. W. H. Elce (Rudge)	85 × 88 ...	499

Stanley's standing lap in the above race was actually done in 2m. 36s., or 62.71 m.p.h. a remarkable performance.

Cyclecar Handicap.

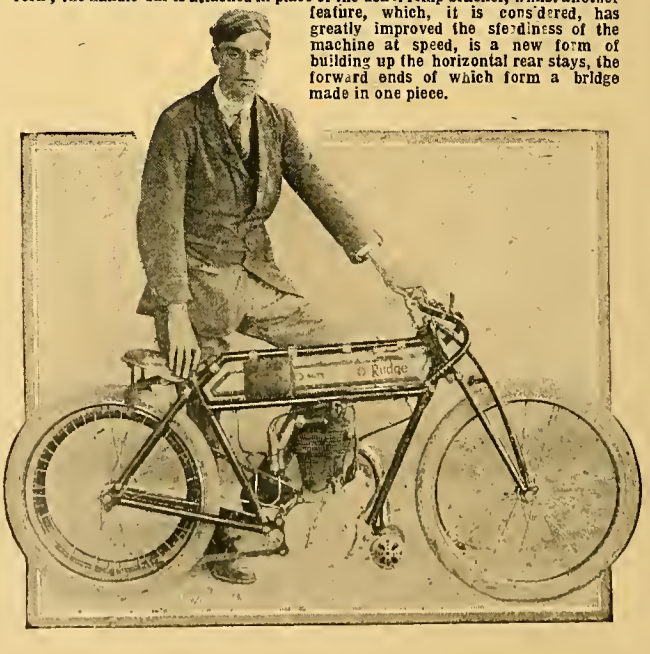
The third event the second five lap cyclecar handicap, distance 13 miles 1,035 yards, resulted as follows :

	mm.	c.c.	hd'cap.
1. J. T. Wood (2 G.W.K.) ...	86 × 92 ...	1,070 ...	3 0
2. F. Hill (1 A.C.)	95 × 102 ...	723 ...	3 20
3. H. Martin (2 Morgan-Jap)	90 × 77.5 ...	990 ...	scr.

Ward's Bedelia showed some disinclination to start, but when once the engine was turning got away very well. Its time allowance, however, enabled it nearly to complete a lap before the A.C. and the G.W.K. got away, which the former did in magnificent style, shooting off the mark like a stone from a catapult. Immediately it was under way the driver tucked himself down, and, except for a tuft of hair, disappeared until the end of the race. Martin also gave a good exhibition of how to get off, but in this he was helped by two stalwart pushers. Starters were not barred in the regulations for this event, but we think that in future it would be better that they should be. The A.C. and the G.W.K. were remarkably evenly matched, and lap after lap were covered with very little between them. The Bedelia after holding a

THE SINGLE CYLINDER HOUR RECORD HOLDER.

A new Rudge racer has been built for W. Stanhope Spencer. The front forks, as will be seen from the illustration, have been reversed, giving a splendid rigid fork; the handle-bar is attached in place of the usual lamp bracket, whilst another feature, which, it is considered, has greatly improved the steadiness of the machine at speed, is a new form of building up the horizontal rear stays, the forward ends of which form a bridge made in one piece.



B.M.C.R.C. May Meeting.—

rapidly decreasing lead for three laps came to a stop at some remote part of the track. Neither the Autotrix, which was the only machine carrying a passenger, nor the Morgan appeared to be going at its best. The latter passed the former at the end of two laps, and in the fourth lap lay third to the A.C. and the G.W.K. In the fifth lap the two leaders changed places, the G.W.K., which was certainly travelling very well, got to the front and won an exciting race by a matter of twenty yards, or one second, the Morgan being a long way behind. The winner's speed was 47.2 m.p.h.

The 750 c.c. Car Challenge Race.

This race immediately resolved itself into a procession, with Harry Collier in front, Printz second, and Hunter



The A.C. and G.W.K. (winner), starting in the 5-lap Cycle Car Race. C. M. Keiller on the G.W.K. was the ultimate winner.

third. This order was maintained throughout. Luce lost time through his belt coming off. The Matchless was evidently being held in a little, as when on the third lap it was challenged by Printz on the Bat, Collier had no difficulty in putting on a very marked amount of speed. The latter beat Printz by about 300 yards, or 9.3 seconds at a speed of 64.2 miles per hour.

		mm.	c.c.
1.	H. A. Collier (2 Matchless Jap) ...	85.4 × 64 ...	741
2.	R. L. Printz (2 Bat-Jap)	85.5 × 65 ...	746

The 1,000 c.c. Car Challenge Race was practically a foregone conclusion for Charlie Collier. Rhys got away from the mark with extraordinary celerity, whilst Collier was much slower away. However, C.R. had got well in front by the end of the railway straight, and with plenty of power in hand romped home an easy winner by two minutes, with Hunter a bad second. Rhys was suffering from misfiring. Winner's speed, 68.42 miles per hour.

		mm.	c.c.
1.	C. R. Collier (2 Matchless-Jap) ...	90 × 78 ...	998
2.	H. Hunter (2 Corah-Jap)	90 × 78 ...	738

The Fifty Miles Senior T.T. Race.

This event was for the "Alec Ross" Cup. Out of eleven entrants only six faced the starter.

Smith had entered a Singer, but elected to ride a S.I.A.M.T. of 216 c.c. Altogether this race was one of the most extraordinary that has yet taken place, not only for the unexpected finish, but also for the disappointing manner in which most of the machines behaved. Stanley, whose Singer was running in a really remarkable way, took the lead from the very start, the riders being sent off from the far side of the track at a point representing about the beginning of the half mile. Before many yards had been covered Foote had to retire through an unusual cause. His belt came off and the fastener struck him in the back, causing quite a nasty little wound.

At the end of the first lap Stanley was leading and drawing away from Elce, Ayres, and Haswell, all of whom were bunched closely together, whilst the tiny S.I.A.M.T. brought up the rear. Another lap saw Haswell get into second place. The gap between first and second steadily increased, and at the end of the tenth circuit the Singer lapped the Rudge. Ayres retired after four laps. At the end of twelve laps Haswell, who was nearly a whole circuit behind Stanley, gave up and came in with his tank smothered with oil; the cause of the trouble was not, however, given. Stanley's back tyre was evidently suffering from a puncture, but it looked as though it would hold him up long enough to finish. He stopped, however, on the sixteenth lap, as also did Elce. The latter was soon off again, but he did not appear to have much chance provided Stanley could get going once more, as with only two laps to go he was a lap and a half behind. Smith, whose little S.I.A.M.T. was running very steadily and fast, went to Stanley's assistance with a pump, but the tyre was evidently in need of repair and Stanley did not reappear. In consequence, Elce (Rudge) came in a winner, beating the S.I.A.M.T. by 1m. 3s. Stanley's luck was certainly execrable, as he had every chance of beating the fifty miles record. His best lap was done in 2m. 25s. at the rate of 67.47 m.p.h.

		mm.	c.c.
1.	W. H. Elce (Rudge)	85 × 88 ...	499
2.	S. C. W. Smith (S.I.A.M.T.) ...	65 × 65 ...	216

THE ARTHUR MOORHOUSE MEMORIAL FUND.

IN connection with the above fund, the decision to endeavour to endow a bed in the Weybridge Cottage Hospital is a particularly good one. It was felt that such a means of keeping alive the memory of one of our best known amateur motor cyclists would be entirely in accordance with what he himself would have wished. It will be in the shape of no lavish expenditure on wood, stone, or brass, but a lasting *monumentum aere perennius*—a sum of money year by year to benefit some poor sufferer in the Cottage Hospital at Weybridge, adjacent to the track on which Moorhouse spent so many happy hours.

Any contribution, however small, will be acceptable, and we hope all who knew Mr. Moorhouse or were pleased witnesses of his performances will subscribe of their ability. All subscriptions should be sent to the secretary of the A.C.U., Mr. T. W. Loughborough, 89, Pall Mall, S.W. The list of donations previously published amounts to £165 1s. 6d.

G.W.K., Ltd. ...	3	3	0	P. J. Evans ...	1	1	0
C. B. Franklin ...	2	2	0	Chas. Marks ...	1	1	0
Employees of the Rex Co.	1	1	0	Southcomb May...	1	1	0
H. P. Harding ...	1	1	0	G. W. Hillyard...	1	0	0
				E. J. Bass ...		10	6

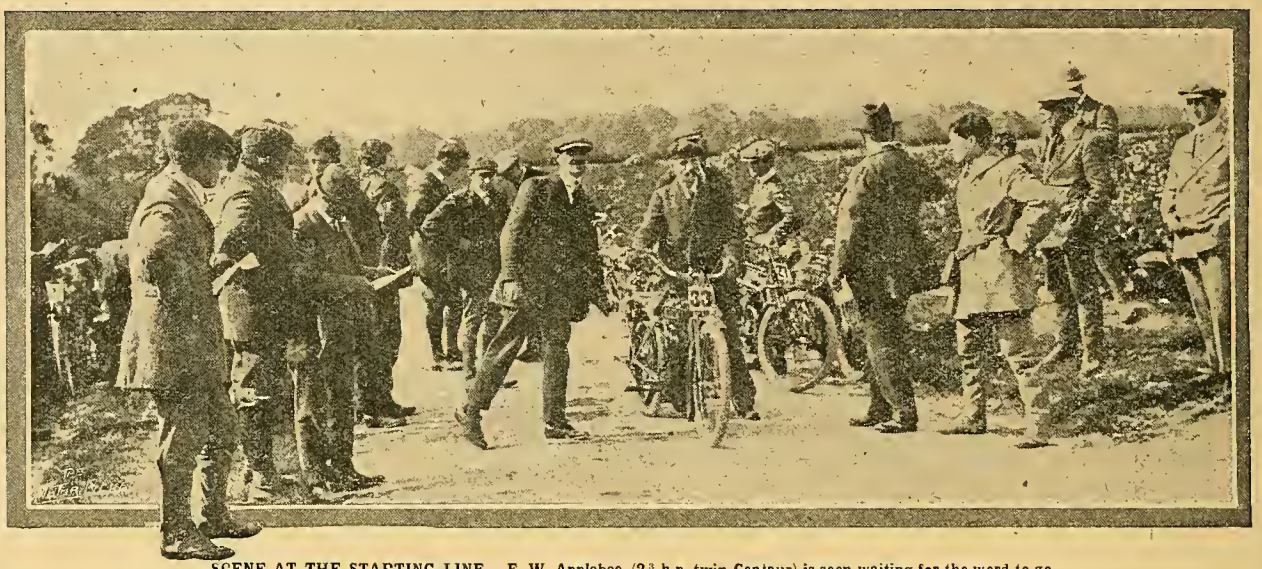
UNOFFICIAL RECORDS.

WE have been informed by W. J. Clarke, of Horncastle, that he has ridden 3,008 miles in six days by journeying daily round the following circuit: Horncastle, Market Rasen, Gainsborough, Doncaster, Gainsborough, Market Rasen, Mablethorpe, Louth, Horncastle. The circuit mileage (160) was officially supplied by Messrs. Bacon and Co. He tells us that he used a Win-Precision machine with Villiers free engine, Kempshall tyres, Druid spring forks, Eisemann magneto, Oleo plugs, Senspray carburetter, Garner exhaust whistle, XL'All pan seat, Parsons's repair outfit, Stanley rubber belt, Cox-Walker double electric lamp, Pratt's spirit, Wakefield Castrol oil, Bowden control, Burberry's overalls, trousers, and coat, Piggott's Motover boots, and Chappel and Co.'s goggles. His principal food was Oxo and Blakey's malted oats.

Mr. Clarke does not mention whose underclothing he wore, nor the brand of socks he favoured; there is also doubt about the name of his hatter.

EQ

M.C.C. MEMBERS' HILL-CLIMB.



SCENE AT THE STARTING LINE. F. W. Applebee (2¾ h.p. twin Centaur) is seen waiting for the word to go.

WE were told to rendezvous on Saturday last at that well-known and picturesque hostelry, the Lambert Arms, Aston Rowant, at 1 p.m., when the venue of the climb would be announced. Our journey down from London on a new 2½ h.p. Motosacoche, that *multum in parvo* among motor bicycles, was not entirely uneventful. In Acton the back tyre caught in a dry tram rail, and for some seconds the writer wobbled twixt a tramcar and eternity in the shape of a motor omnibus until a happy recovery enabled him to pull up with the belt thrown off the pulley. Then just after the dangerous cross road at Gerrard's Cross was passed, now happily made safe by the presence of a R.A.C. touring guide, the belt pulled through, probably owing to the wrench it had had in Acton. The Motosacoche, once a mere baby, has grown greatly in strength since its birth. It is now a sturdy youngster of 2½ h.p., 64 × 90 mm., and the way the engine pulls is truly remarkable. Fitted with variable pulley gear and free engine, it is a pleasure to drive in traffic, and stops at nothing.

Another Chiltern Acclivity.

But to return to the hill-climb. The hill is of the Chiltern range, but instead of winding up gracefully like Aston Rowant, it rises abruptly from the level and reaches a maximum gradient of about 1 in 5. It possesses a fair surface which is a trifle rutty near the summit, and two easy curves, easy that is for all but the riders in the 1,000 c.c. class, who did not like the top corner, owing to it being banked the wrong way. On each side there are trees, which gave welcome shade on one of the most beautiful days of this lovely early summer.

Mr. R. H. Head, the chairman of committee, who was in charge of the start, sent up the first man at 3.10 p.m., and despatched the remainder with a safe interval between each. In the 350 c.c. class (on formula), Jacobs and Le Grand (the inseparables) did well on their Singers. With Mundy they performed a "grand slam." Fletcher made a good showing on his Douglas, changing down just as the gradient became steeper. Applebee's Centaur was also running splendidly.

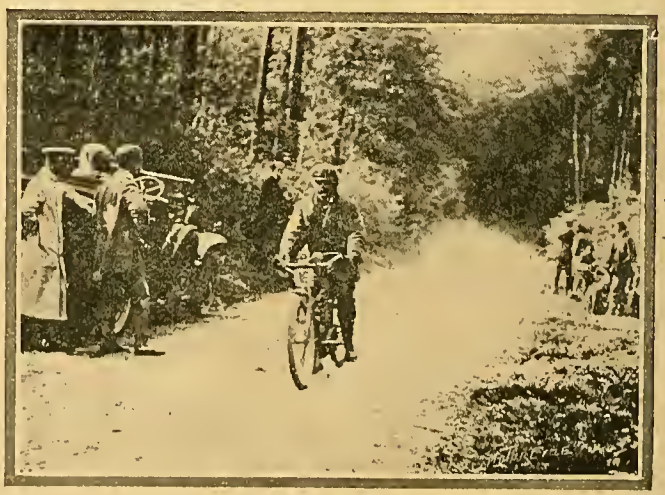
CLASS 1.—Lightweights, 350 c.c.

		Fig. of merit.
1.	J. P. Le Grand (2½ Singer)	14.5
2.	W. Jacobs (2½ Singer)	14.3
3.	R. G. Mundy (2½ Singer)	13.5

Class 2, for single-cylinder machines exceeding 350 c.c. (on formula), was naturally a little more exciting. H. E. Davison (Kerry) made an excellent ascent, but he swerved badly near the top. B. Marians on a P. and M. made a good ascent, and of the four Rovers entered, C. T. Newsome and C. Q. Roberts appeared to make fastest time. F. C. North's Ariel also gave a good impression of speed.

CLASS 2.—Single-cylinders exceeding 350 c.c.

		Fig. of merit.
1.	E. A. Colliver (3½ Zenith)	13.3
2.	F. C. North (3½ Ariel)	12.8
3.	C. Q. Roberts (3½ Rover)	12.4



Dr. C. J. S. Stanley (5 h.p. Indian) making a good climb.

M.C.C. Members' Hill-climb.—

Class 3 was decided on time.

Class 3.—Single-cylinders exceeding 350 c.c.

1. C. T. Newsome (3½ Rover) ... ... 52⅖s.
2. R. Croucher (3½ Kerry) ... ... 55⅘s.
3. D. H. Noble (3½ Rover) ... ... 56⅗s.

Naturally, Class 4, for multi-cylinder machines over 350 and up to 1,000 c.c. (on formula), provided some excitement. S. T. Tessier (5 h.p. Bat) and G. Brough (6 h.p. Brough) came up well. E. B. Dickson (8 h.p. Bat) rode sitting upright. F. W. Barnes and E. B. Ware (Zeniths) made splendid ascents.

Class 4.—Multi-cylinders not exceeding 1,000 c.c.

		Fig. of merit.
1.	E. B. Ware (6 Zenith)	13.4
2.	S. T. Tessier (5 Bat)	10.5
3.	F. W. Barnes (6 Zenith)	10.2

Class 5 was decided on time. Brough's machine had a weird guard over the valves, with copper pipes apparently connected to nothing at all issuing vertically therefrom. Brough said it was to keep the flies off the engine, but we venture to think otherwise.

Class 5.—Multi-cylinders not exceeding 1,000 c.c. (on time).

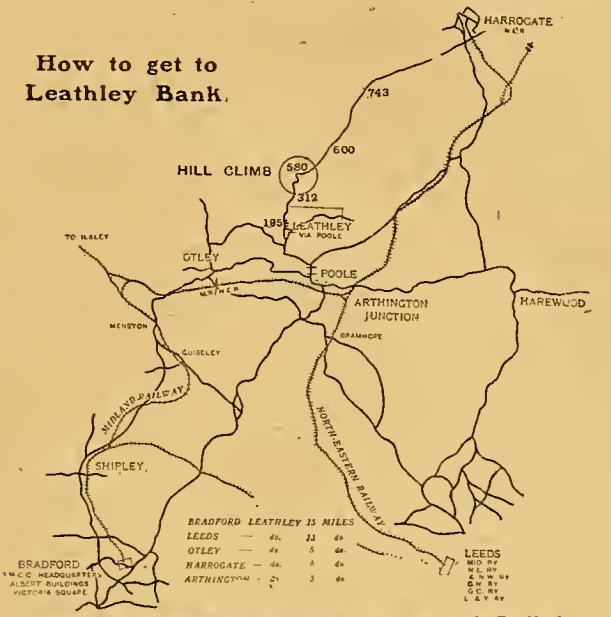
1. S. T. Tessier (5 Bat) ... ... 42⅖s.
2. G. Brough (6 Brough) ... ... 44⅖s.
3. F. W. Barnes (6 Zenith) ... ... 48⅗s.

The sidecar class finished the event as far as *The Motor Cycle* is concerned, as the cyclecar class was abandoned owing to lack of support. F. J. Watson (3½ h.p. Swift single-gear), with a child as passenger, made an excellent ascent. Barnes, with the faithful Weatherilt as his companion, made the star performance. Pratt, with the stentorian Cooper in the sidecar, made a good showing; while Wells, with Mrs. Wells on board, made a fast climb.

Class 6.—Sidecars not exceeding 1,000 c.c.

		Fig. of merit.
1.	F. W. Barnes (6 Zenith sc.)	11.3
2.	F. J. Watson (3½ Swift)	10.5
3.	W. Pratt (3½ P. and M.)	10.1

The awards were gold, silver, and bronze medals in each class, while gold medals were presented by Mr. E. B. Dickson to the fastest novices in Classes 3 and 5 if there were not less than six such entries.



Map showing the location of Leathley Bank, the venue of the Bradford M.C.C. open hill-climb on Saturday next.

RESULTS OF THE MERSEY M.C. 24 HOURS' RELIABILITY TRIAL.

The following riders in the Mersey Motor Club's open twenty-four hours' reliability trial (described in our last issue) have been awarded gold medals:

Winner of the Butler Cup.

Hugh Gibson (3½ h.p. Bradbury, Bradbury gear).

Gold Medals.

F. Rees (3½ h.p. Rudge, N.S.U. gear).
W. E. Rootes (3½ h.p. Singer, Sturmey-Archer gear).
N. Howarth (3½ h.p. Bradbury, N.S.U. gear).
N. H. Browne (7 h.p. Indian, Indian gear).
Alex C. Smith (3½ h.p. Rudge).
M. Rimmer (3½ h.p. Zenith, Gradua gear).
Rex G. Mundy (3½ h.p. Singer, Armstrong gear).
W. Scott Clarke (3½ h.p. Rover, Armstrong gear).
George Wray (3½ h.p. Bradbury, Wray gear).
J. Cadwallader (2¾ h.p. Enfield, Enfield gear).
A. Marston (8 h.p. Matchless).
Harry Reed (8 h.p. Dot-Jap, two-speed).
J. H. Roscoe (3½ h.p. Singer).
R. Lord (6 h.p. Rex Sidette).

Silver medals have been awarded to all who finished the course but did not keep to schedule time. They are:

W. Heaton (2¾ h.p. A.J.S., A.J.S. gear).
W. Davies (3½ h.p. Victoria-Jap).
C. Hobbs (2¾ h.p. Humber, Armstrong gear).
G. Gregson (3½ h.p. Bradbury).
A. J. Jenkins (3½ h.p. Macbeth, Armstrong gear).
W. Houghton (3½ h.p. Bradbury).

BIRMINGHAM M.C.C. MEMBERS' HILL-CLIMB.

A very successful hill-climb for members of the club only was held at Highley Hill, between Bewdley and Bridgnorth, on Saturday last. The hill is about a quarter of a mile long, and has a maximum gradient of 1 in 5, with an average of about 1 in 7.

R. H. Edwards (Triumph) and H. C. Newman (Ivy-Precision) tied for first place in Class 2. On running off, Newman improved on his first time by ⅖s., and beat Edwards by ⅖s.

In Class 1, Miss Hough and J. J. Woodgate tied, and on running off Miss Hough proved the fastest.

Electrical timing and a telephone were used, and the events were run off in seventy-six minutes. Results:

Class 1.—Lightweights.

1. F. S. Whitworth (2¾ Douglas) ... ... 22s.
2. P. W. Owen (2¾ Zenith) ... ... 22⅕s.
3. Miss Hough (2¾ Douglas) ... ... 25s.

Class 2.—Under 500 c.c.

1. H. C. Newman (3½ Ivy-Precision) ... 16⅕s.
2. R. H. Edwards (3½ Triumph) ... ... 16⅕s.
3. H. R. Fowler (3½ Norton) ... ... 17s.

Class 3.—Under 750 c.c.

1. A. D. Arter (James) ... ... 20s.
2. T. Pollock (James) ... ... 20⅕s.
3. T. F. Blumfield (Blumfield) ... ... 22⅖s.

Class 4.—Under 1,000 c.c.

1. H. C. Newman (3½ Ivy-Precision) ... 16s.
2. R. H. Edwards (3½ Triumph) ... ... 16⅘s.
3. H. R. Fowler (3½ Norton) ... ... 17⅕s.

Class 5.—Single-cylinder passenger.

1. H. C. Newman (3½ Ivy-Precision sc.) ... 25s.
2. C. Smith (4¼ Regal Precision sc.) ... 31s.
3. B. Bourke (3½ New Hudson sc.) ... 34⅕s.

Class 6.—Twin-cylinder passenger.

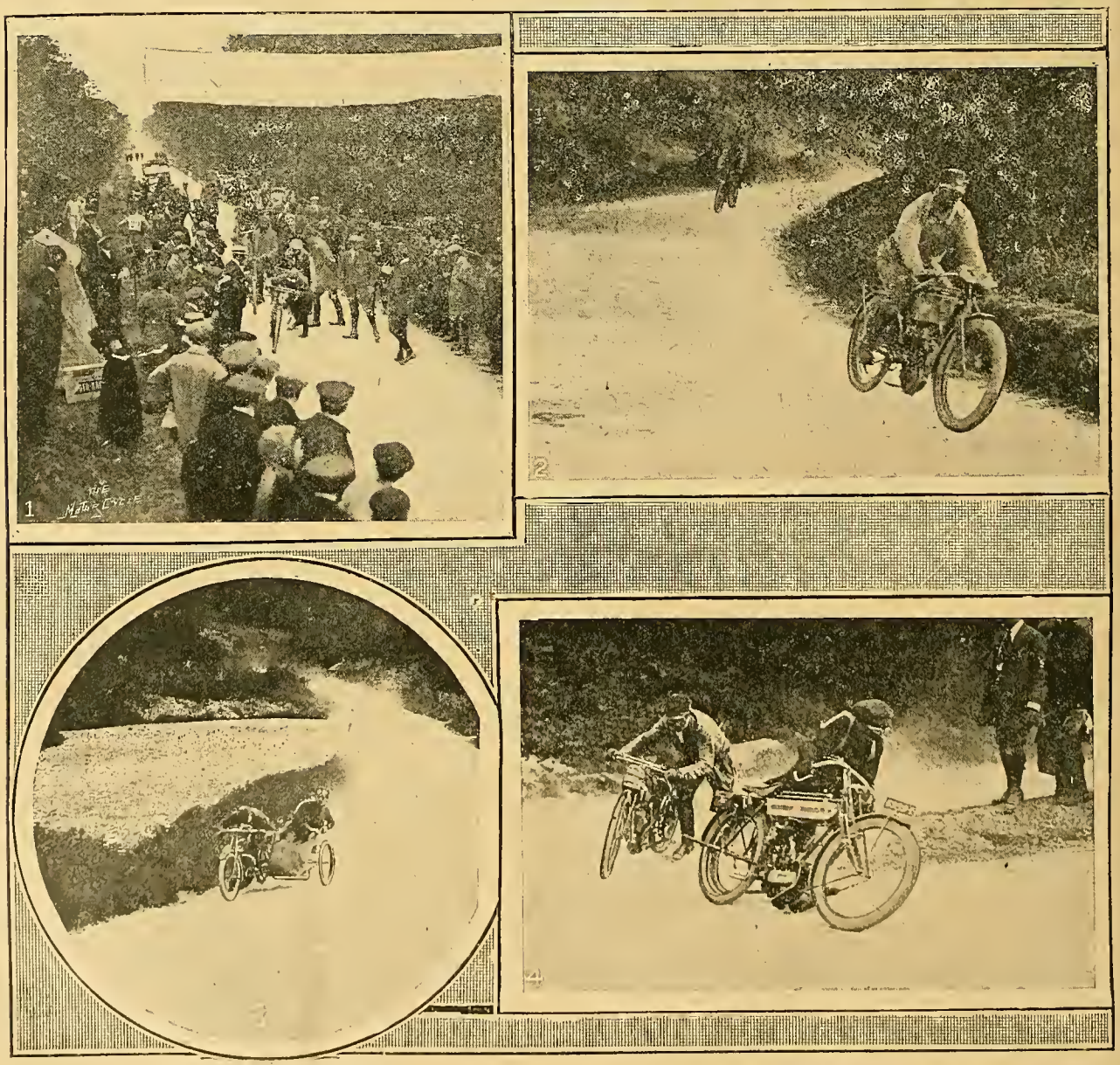
1. F. H. Southam (6 Zenith sc.) ... ... 29⅖s.
2. E. W. Starkey (8 Morgan Runabout) ... 31⅖s.
3. Dr. B. Fawsset (8 Chater-Lea sc.) ... 32⅘s

French Road Race—The Circuit de l'Eure.

AN important road race organised by the Motocycle Club de France, over a course of 288 kilometres in length, took place on the 12th inst. Competitors to the number of thirty, whose machines had been weighed and sealed the day previous, were despatched from Vernon at half minute intervals by M. Polack. The course, although not dangerous, was hilly, and comprised several sharp corners, eleven of the latter occurring in a distance of less than a quarter of a mile. There were also two or three hair pin bends which were difficult to negotiate, so difficult, in fact, that some riders had to walk round them. The first few circuits were covered at a hot pace, ten competitors giving the impression of being likely to win. Retirements commenced in the fourth round.

Positions at half-distance showed that Péan (Peugeot) was leading, followed by Pernette and Dancart (La Française), Lacroix (Peugeot), Naas (Griffon), Gabriel (Triumph), and Chartier Devarennes (Indian), in the order named. In the eleventh circuit Devarennes broke his handle-bar, and Gabriel (Triumph) suffered a burst tyre. Pernette lost ground, and Dancart and Naas improved their positions. The winner averaged 37½ m.p.h. The results by classification are :

			h.	m.	s.
		SIDECARS.			
Trade.—		H. G. Dixon (New Hudson)	6	36	48⅗
Amateur.—		Bloch (René-Gillet)	5	45	58⅘
		MOTOR BICYCLES, 350 C.C.			
Trade.—	1.	Péan (Peugeot)	4	46	18
,,	2.	Pernette (Française)	5	16	35⅕
		MOTOR BICYCLES, 500 C.C.			
,,	1.	Dancart (Française)	5	3	57
,,	2.	Brunet (Griffon)	5	52	15⅘
		MOTOR BICYCLES OVER 500 C.C.			
,,	1.	Naas (Griffon)	5	5	13⅖



(1) General view of the start.
(2) Naas (Griffon) at speed.
(3) H. G. Dixon (New Hudson) first of the trade sidecarists
(4) Gabriel (Triumph) and Peán (Peugeot) at one of the hairpin bends

CURRENT CHAT

TIME TO LIGHT LAMPS.

May 16th	...	...	8.43 p.m.
,, 18th	...	...	8.45 ,,
,, 20th	...	...	8.49 ,,
,, 22nd	...	...	8.52 ,,

Hill-climb in the North.

The Manchester Motor Club is to organise an open hill-climbing contest in July.

M.C.C. London to Edinburgh Run.

The entry for the London to Edinburgh run is again a record, beating last year's figures of 162. The next club run will give members an opportunity of becoming familiar with the first forty miles of the course which will have to be covered in the dark.

Police Traps.

A police trap is in operation during week-ends on the Ashford-Hythe-Folkestone road at Newing Green Corner. Motorists are warned to exercise caution when riding into Hythe on this road. At Christchurch, the police have a trap which is worked occasionally.

Imports and Exports of Motor Cycles.

Imports for the month of April and for the four months ending April 30th have increased considerably in value, while the British exports during the same period have increased to an enormous degree. Below are given the actual figures culled from the Board of Trade returns:

IMPORTS.

Month ending April 30th.

1910.	1911.	1912.
No. of machines—		
163 ...	203 ...	174
Value with parts—		
£11,020 ...	£12,106 ...	£17,534

Four months ending April 30th.

1910.	1911.	1912.
No. of machines—		
509 ...	612 ...	567
Value with parts—		
£35,817 ...	£40,661 ...	£50,721

The actual numbers of complete motor cycles imported have decreased, the increase in value being accounted for by imported parts.

EXPORTS.

Month ending April 30th.

1910.	1911.	1912.
No. of machines—		
171 ...	408 ...	779
Value with parts—		
£11,196 ...	£22,339 ...	£42,408

Four months ending April 30th.

1910.	1911.	1912.
No. of machines—		
801 ...	1,801 ...	3,483
Value with parts—		
£42,102 ...	£86,426 ...	£184,048

A.A. and M.U. Motor Cycle Members.

The increase of membership of the A.A. and M.U. in April was no less than 2,691. The total membership is well over 43,000, and it is interesting to note that of this number just under 10,000 are motor cyclists.

International Road Race in France.

The French representative of the Singer Company, Ltd., has entered four Singer motor bicycles for Le Mans automobile meeting. Two of these will compete in the 350 c.c. class and two in the 500 c.c. class. Entries close on the 19th inst., and should be sent to the Secretary of the Automobile Club de Seine et Oise, Le Mans, or the Manager of *L'Auto*, 10, Rue de Faubourg Montmartre, Paris.

The Team Trial.

Daventry (Northants) has been selected by the M.C.C. as the centre for the team trials on June 15th.

Further clubs which have notified the trials hon. secretary, Mr. F. J. Jenkins, of their intention to compete in the team trials are the North Middlesex M.C.C., the South Birmingham M.C.C., and the Walthamstow M.C., bringing the total number of teams to twenty-four—an easy record. It would appear that the Derby and District M.C.C. will have some difficulty in retaining possession of *The Motor Cycle* fifty-guinea cup in face of such opposition.

SPECIAL FEATURES.

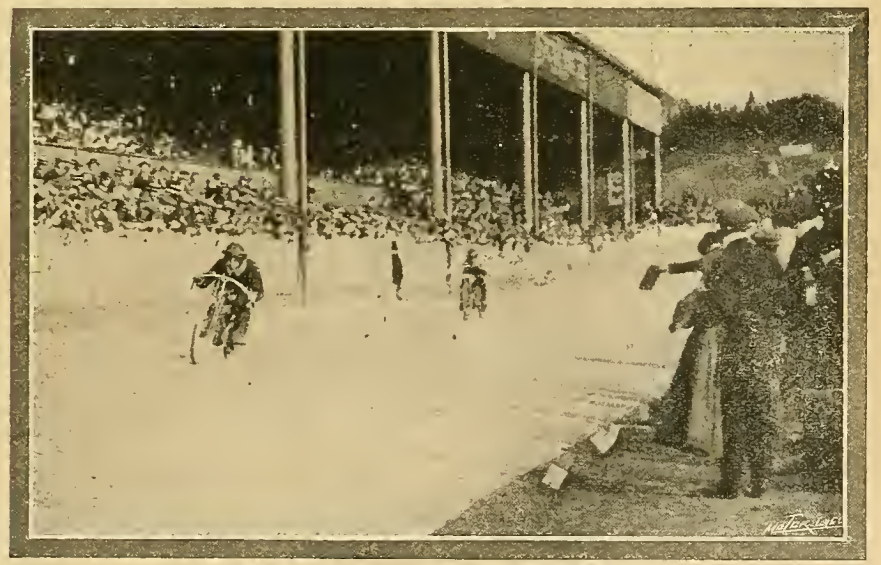
IMPORTANT FRENCH ROAD RACE.
(Illustrated.)

A SECOND MOBILISATION TEST.

WEEK-END COMPETITIONS.
(Described and Illustrated.)

Lightweight Racing at Aston.

The races arranged by the Sutton Coldfield and Mid-Warwickshire A.C., and which were to have been held on the 4th inst., were run off on the Aston track last Saturday. The first event was a three miles scratch race for lightweights not exceeding 350 c.c. The winners of the heats were as follow: Heat 1.—J. Woodhouse (2½ h.p. Regal-Precision), 4m. 3⅕s. Heat 2.—S. L. Bailey (2¾ h.p. Humber), 3m. 58⅘s. Heat 3.—F. W. Dayrell (2¾ h.p. Martin-Jap), 4m. Final.—1, Bailey; 2, Woodhouse. Winner's time, 3m. 50⅗s. This race was followed by a five-mile handicap for T.T. lightweights and resulted as follows: Heat 1.—S. L. Bailey, 6m. 8⅖s., handicap 7½s. Heat 2.—J. St. John (2 h.p. Humber), 8m. 32⅖s., handicap 10s. Heat 3.—J. Woodhouse, 6m. 46⅗s., handicap 3½s. Final.—1, S. L. Bailey, 7m. 50⅗s.; 2, J. Woodhouse, 8m. 0⅕s.; 3, J. St. John, 8m. 7⅘s. J. St. John won a gold medal in each event for best amateur performance. S. L. Bailey's riding was warmly applauded by the big crowd; he rode his T.T. Humber in fine style. Gears were restricted to 5 to 1.



SATURDAY'S ASTON TRACK RACE MEETING.

S. L. Bailey (twin Humber) lapping J. W. Woodhouse (Regal-Precision) in the last lap at Aston track, and making fastest time. Bailey, who is a well known Australian rider, won both the three miles scratch race and the five miles handicap, riding in superb style.

Proposed Ten-mile Limit.

The local tradesmen's association in Fulham is proposing a ten-mile limit along Fulham Road, and is canvassing householders for signatures.

Amalgamation of French Clubs.

The Touring Moto Club de France received the other evening a delegation from the Moto Club de France proposing that the two bodies should amalgamate. It appears probable that this amalgamation will actually take place.

Another Mobilisation Scheme.

The next mobilisation test of motor cyclists is arranged for Sunday, June 9th, at 1 p.m. The scheme is explained by "Celeriter" in another part of this issue. An exclusive announcement in the same article refers to a Cyclist Battalion for Birmingham.

French Motor Cycle Derby.

The Grand Prix de Champagne, to which we referred in our last week's issue, certainly promises to be an interesting event. Numerous competitors, we learn, have already begun to practise on the course.

T.T. Race Fund.

The following additional donations have been made to the above fund:

Price's Patent Candle Co. ...	5	5	0
Vacuum Oil Co.	5	5	0
Cambridge U.M.C.C.	1	1	0
E. M. P. Boileau	10	0	

The total amount subscribed is just under £31.

Prodigious Speed for a 3½ h.p.

The fastest speed accomplished on a 3½ h.p. single-cylinder machine was raised to 75½ m.p.h. by G. E. Stanley, riding a Singer, at Brooklands, last Saturday. It is not generally known that Stanley takes his inlet valve cam to all race meetings in his pocket, fits it on the spot, and removes it again immediately the event is over.

Open Amateur Hill-climb.

The Sutton Coldfield and Mid-Warwickshire A.C. have received good entries for each class for their open amateur hill-climb at Wenlock Edge on Saturday. Class I., for single-cylinder touring machines up to 520 c.c., has drawn sixteen entrants; Class II., twin and single tourist up to 350 c.c., 12; Class III., T.T. twins and singles up to 500 c.c., 27; and Class IV., unlimited, 15. The events will be run off on the knock-out system, and some good sport should be witnessed.

T.T. Entrants and the Olympia Show.

The Scott Engineering Co., Ltd., have sent us a copy of a resolution passed at the meeting of the Manufacturers' Union on the 1st inst., with a request that we give it publicity. The resolution reads as follows: "That in all cases where a bond is adopted by 80 per cent. of the members of any section those members of that section refusing to sign such bond shall be excluded the first ballot for space at any exhibition which may hereafter be promoted by the Union, and from all benefits as to rebates or allowances in respect of show charges." It will be remembered that the Scott Engineering Co., Ltd., and Messrs. H. Collier and Sons, Ltd., declined to sign the T.T. bond.

FUTURE EVENTS

May 18.—North West London M.C.C. Passenger Trial to Coventry and back.
„ 18.—Birmingham M.C.C. Open Cyclecar Reliability Trial.
„ 18.—Bradford M.C.C. Annual Open Hill-climb.
„ 18.—Sutton Coldfield and Mid-Warwickshire A.C. Open Amateur Hill-climb.
„ 24 to 27.—M.C.C. London to Edinburgh Run.
„ 27.—Dublin M.C.C. Open Reliability Trial and Sidecar Competition.
June 15.—M.C.C. TEAM TRIAL.

Remarkable Results in Consumption Test.

In the Oxford M.C.C. petrol consumption test on Saturday, H. S. Askew (3½ Triumph, single-gear, and sidecar), total weight 670 lbs., covered 36 miles with a petrol consumption of 31 ozs. 2 drams = 186 miles to the gallon. H. G. Hill (2½ Calcott) was first in the single class.

M.C.U. of Ireland (Ulster Centre).

An open reliability trial will take place on the 18th inst. The start will be from Fortwilliam Park, and the route *via* Cushendun and the Cush Lake Road to Ballycastle. There will be a non-stop from Cushendun to Ballycastle, and observers will be posted on the hills.

The T.T. Races.

Up to the present, nineteen machines have been entered for the Junior and thirty-three for the Senior Tourist Trophy Races, to be held in the Isle of Man on June 28th and July 1st respectively. The Auto Cycle Union, which is organising the contests, anticipates that by June 1st, the date for closing of entries, the total will reach between fifty and sixty for the Senior and thirty for the Junior.

20,000 Miles on a Singer Sidecar.

Harry Long completed the first 5,000 miles of his trip in Bristol on the 14th inst. He is now in Cornwall. Most of his ride so far has been in the North, and he has visited thirty-six counties. He has had no trouble with his engine or with the police, though he has passed through many police traps.

English-Dutch Reliability Trial.

Only a few voting sheets circulated among the clubs are still outstanding, and it is hoped to be able to announce the composition of the British teams by the end of the month. Club secretaries will oblige by bringing the names of the entrants to the notice of their respective committees at the earliest opportunity.

The R.A.C. and A.C.U. Guides.

Numerous R.A.C. road guides are now to be found on our highways. The services of these guides are at the disposal of all motor cyclists bearing the badge of the A.C.U. and affiliated clubs. Each guide is well acquainted with the district in which he is on duty, and will gladly give information and assistance to all who are in need.

Hammersmith Speed Limit Application Refused.

It will be remembered that a Local Government Board inquiry was held in February last into an application made by the London County Council for the imposition of a speed limit of five miles an hour at Hammersmith Broadway and its immediate approaches, and for a ten-mile speed limit along Hammersmith Road from its junction with Hammersmith Broadway to its junction with Brook Green. The application was strongly opposed by the Royal Automobile Club and the Automobile Association and Motor Union, and it is gratifying to record that the Local Government Board has refused the application.



M.C.C. MEMBERS' HILL-CLIMB NEAR ASTON ROWANT.
S. T. Tossier (Bat-Jap) at full speed past the bend. He was the winner of two classes.

Edinburgh and District M.C. Open Hill-climb.



The meeting at Manor Hill, near Peebles. Scene at the start.

THE above annual contest took place at Manor Hill, Peebles, on Saturday last, in indifferent weather. Rain threatened in the earlier part of the day, and gradually gave way to a strong westerly wind, which helped the competitors to some extent. The surface of the road had been specially swept overnight in readiness for the contest, but, in spite of this, it appeared somewhat loose in parts. The attendance proved to be the best the club has had at Manor Hill, and a greatly increased number of spectators, mostly from the adjacent districts, viewed the competition. As usual with the Edinburgh meetings, the contest started promptly at 4 p.m., and finished in good time.

Lindsay (2¾ h.p. New Hudson) made a very fine ascent, his time being better than many larger machines, and his figure of merit was the highest for the day. In the open scratch class, R. S. Morrison (5 h.p. Bat) and A. H. Alexander (7 h.p. Indian) tied for first place, but on a re-run the former improved his time by ⅗s., and so won. Reference must also be made to the performance of J. Donaldson (3½ h.p. Matchless), who in the open scratch class, competing against big twins, tied for third place.



A. H. Alexander (2¾ h.p. Douglas) awaiting the signal to start.

The Results.

CLASS I.—Formula. Not exceeding 400 c.c.

	Fig. of merit.	Time.
1. A. J. C. Lindsay (2¾ New Hudson)	1,019	35.2s.
2. H. Berwick (2¾ New Hudson)	710	40.4s.
3. A. H. Alexander (2¾ Douglas)	708	40.8s.

CLASS II.—Formula. Exceeding 400 and not exceeding 600 c.c.

1. P. E. Tolfree (3½ Matchless)	754	32.4s.
2. H. Berwick (3½ New Hudson)	665	34.8s.
3. O. G. Braid (3½ Norton)	652	35.2s.

CLASS III.—Formula. Exceeding 600 c.c.

1. J. D. Morrison (5-6 Bat)	619	28.8s.
2. J. Steele (5 Indian)	581	35.6s.
3. A. J. C. Lindsay (5-6 Matchless)	580	30.4s.

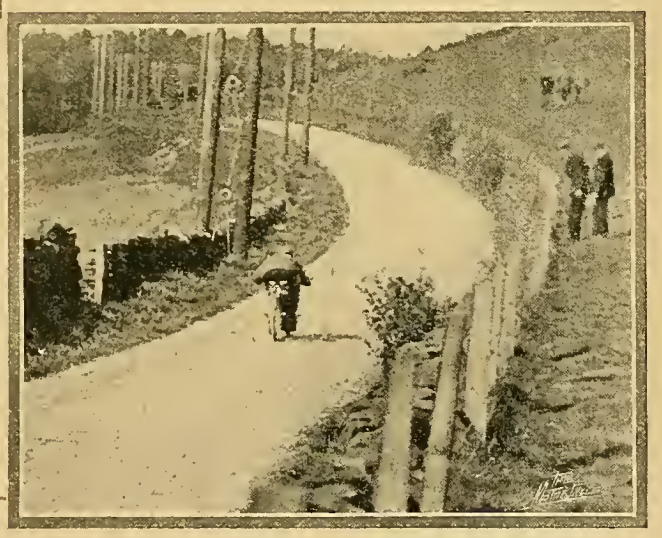
The results of Class IV. are withheld owing to a protest having been lodged.

CLASS V.—Formula. Passenger machines, any size engine.

1. H. Berwick (3½ New Hudson)	736	57.6s.
2. J. R. Alexander, jun. (7 Indian)	527	52.2s.
3. F. J. Hutchison (5-6 Rex-Jap)	459	64.6s.

CLASS VI.—On time only. Not exceeding 600 c.c.

1. P. E. Tolfree (3½ Matchless)	30.8s.
2. J. Gerard (3½ Bradbury)	33s.
3. A. B. Lindsay (3½ Triumph)	35s.



A. B. Lindsay (3½ h.p. Triumph) negotiating the bend.

CLASS VII.—Time only. Exceeding 600 c.c.

1. H. S. Morrison (5-6 Bat)	26.2s.
2. A. H. Alexander (7 Indian)	26.6s.
3. J. Donaldson, jun. (3½ Matchless)	28.4s.
3. A. J. C. Lindsay (5-6 Matchless)	28.4s.

It is an item of interest in connection with this hill-climb that each competitor was allotted a starting time in the programme, the exact time being printed alongside each name. It was also one of the rules of the competition that riders who were not ready to start at the appointed time would not be allowed to take part.

COVENTRY CLUB'S OPEN RELIABILITY TRIAL.

In our description of the above trial in last week's issue, we ascribed J. W. F. Crouch's stops on the hills to insufficient weight on the back wheel of his C.M.C. carette. Mr. Crouch differs in his opinion, being confident that the stops were due to the use of a plain driving tyre.

C. Q. Roberts (Rover) was stated to have pedalled on Ilmington Hill in the official results. We are asked to state that this was an error, Mr. Roberts in fact climbing the hill on the middle gear of his Armstrong.

It appears that H. G. Hill rode a single-geared Calcott lightweight, and not a three-speed as stated.

RACING AT PORTMARNOCK.

A VERY good entry was secured for the supplementary meeting of the Dublin and District M.C.C. at Portmarnock on Saturday last, and some good racing was seen. T. Summerfield, a novice, got into some loose sand, wabbled badly, and fell. He was unconscious for some time, but was ultimately able to ride home. This is the first accident at Portmarnock in ten years' racing. Results :

SIX MILES NOVICE HANDICAP.

		Handicap.
1.	J. L. Walshe (3½ h.p. Triumph) ...	1m. 0s.
2.	A. J. Read (3½ h.p. Indian) ...	1m. 30s.
3.	O. G. Price (3½ h.p. Rudge) ...	1m. 30s.

Twelve others competed; the winner finished 15s. in front of the second man, third close up.

FOUR MILES SCRATCH.—Engines under 520 c.c.

		Time.
1.	T. E. Greene (3½ h.p. Rudge) ...	5m. 19⅗s.
2.	F. J. Walker (3½ h.p. Rudge) ...	5m. 22s.
3.	J. Healy (3½ h.p. Rudge) ...	5m. 33s.

Four others rode.

TWENTY MILES HANDICAP.

		Handicap.	Time.
1.	O. G. Price (3½ h.p. Rudge)	6m. 0s. ...	31m. 27⅕s.
2.	T. E. Greene (3½ h.p. Rudge)	2m. 30s. ...	28m. 52s.
3.	F. J. Walker (3½ h.p. Rudge)	20s. ...	27m. 2s.

Eight others also rode. Won by 55s., 20s. between second and third.

OPEN HILL-CLIMB AT RHUBINA.

The annual event organised by the Cardiff Motor Club took place at Rhubina, near Cardiff, on Saturday. The feature of this year's contest was the invitation extended by the club to other clubs in South Wales for their members to compete. The entries numbered fifty-five, and a start was made about 3 p.m. The course was about 2,880 feet long, with an average gradient of 1 in 14.6, the steepest part being 1 in 7.8. The results in Classes 3, 5, 6, 7, and 8 being on the following formula $\frac{C \times T^2}{W}$, as recommended by *The Motor Cycle*; the results in Class 4 being on time only.

Some exceedingly close times were recorded, and as many as three competitors in Class 4 tied for fastest time. This necessitated a run off to decide the winner.

The results were as follows :

Classes 1 and 2.—Cancelled for want of entries.

In Class 3 (touring single-cylinders up to 560) there were twelve entries. Results.

		Time.	Fig. of merit.
1.	F. J. Tanner (3½ Triumph) ...	51⅗s. ...	253
2.	S. Davies (3½ Triumph) ...	55s. ...	246
3.	A. W. Jones (3½ Rudge) ...	55⅗s. ...	213

Fastest time : F. J. Tanner.

Class 4 (Tourist Trophy machines not exceeding 500 c.c.), also twelve competitors :

1.	J. C. Moore (3½ Rudge)	44⅗s.
2.	H. Britton (3 Pioneer)	45⅗s.
3.	H. Wessendorf (3½ Premier)	46s.

Class 5 (twin-cylinder machines exceeding 480):

		Time.	Fig. of merit.
1.	A. B. Wade (6 Zenith)	44⅘s. ...	252
2.	E. Chapman (6 Zenith)	45⅘s. ...	242
3.	A. V. Shirley (7 Indian) ...	44⅖s. ...	208

Fastest time: A. V. Shirley.

Class 8 (motor cycles with sidecar attachments):

1.	A. B. Wade (6 Zenith) ...	58⅗s. ...	239
2.	F. J. Tanner (3½ Triumph) ...	68s. ...	233
3.	E. Chapman (6 Zenith) ...	61⅕s. ...	215
4.	G. H. Smith (8 J.A.P.) ...	58⅖s. ...	208

Fastest time: G. H. Smith.

Winner of the Humber Cup, presented by Humber, Ltd., Coventry, awarded for the fastest time of the day: A. V. Shirley (7 h.p. Indian).

Winner of the Rudge Cup, presented by Rudge-Whitworth, Ltd., for the best figure of merit in Class 3 or 5 : Sylvanus Davies (3½ Triumph).

CLUB NEWS.

North Staffordshire M.C.C.

The members' reliability team trial took place last week in bad weather over a difficult course. Four teams, each made up of four riders, started, but only five men got through. The route was *viâ* Newcastle-under-Lyme, Cobridge, Leek, Burbage, Cat and Fiddle, Macclesfield, Congleton, Barbage, and back to Whitmore, and in the afternoon through Newport, Shrewsbury, and Market Drayton. Results :

		Marks lost.
	G. Jones (3½ Zenith)	0
	P. S. Clewes (2¾ Enfield)	6
	W. Baines (3½ Triumph)	12
	J. A Prendergast (3½ Rudge)	16
	E. Bailey (6 Matchless)	50

Westmorland M.C.C.

A successful hill-climb was held on Aughton Hill on the 8th inst. Results :

LIGHTWEIGHTS.

		Formula.
1.	L. L. Pearce (2¾ Humber)	50.1
2.	F. Burn (2¾ New Hudson)	77.2

SINGLES.

1.	B. Jeffreys (3½ Triumph)	63.6
2.	G. W. Braithwaite (3½ Zenith)	64.8
3.	R. Bowness (3½ Matchless)	70.4

TWIN CLASS.

1.	L. S. Parker (3¾ Scott)	76.8
2.	E. Jeffreys (5 Indian)	84.3
3.	E. F. Baxter (6 Rex)	108.

Fastest time: Robin Bowness (3½ T.T. Matchless).

Nottingham and District M.C.C.

Results of the hill-climb, held at Hardwick on the 4th inst. :

	TOURING CLASS.	Time. m. s.	Fig. of merit.
1.	Reg. Holloway (2½ Premier) ...	2 3⅕ ...	106.95
2.	J. King (2½ Premier)	2 21⅖ ...	111.3
3.	J. R. Sylvester (2¾ New Hudson) ...	2 5⅕ ...	130.1
	T.T. CLASS.		
1.	J. R. Sylvester (2¾ New Hudson) ...	1 53⅘ ...	117.2
2.	J. J. Kelly (3½ Rudge)	1 53 ...	156.2
3.	*Reg. Holloway (3½ Premier) ...	1 48⅕ ...	159.

*Fastest time of the day.

Walthamstow M.C.

A non-stop and speed-judging competition was held on the Cambridge Road over a distance of fifty-one miles, which had to be covered at a speed of 20 m.p.h. Results :

	PASSENGER CLASS.	Time error. m. s.
1.	G. West (5 A.C. tricar)	1 50⅘
2.	— Shelley (3½ Humber sc.)	2 22
3.	G. Henbrey (5 A.C. tricar)	2 59
	MOTOR BICYCLE CLASS.	
1.	J. Beal (3½ N.S.U.)	2 54
2.	F. W. Applebee (3½ Centaur)	3 43⅗
3.	F. Gallehawk (3½ Rex)	5 33⅖

Essex M.C.

On the 28th ult. a club run took place to Laindon Hills, and an impromptu fast and slow hill-climb was held. Results : D. S. Kapadia (8 h.p. Rex-Jap and sc.), difference 10m. 5s.; F. W. Applebee (2¾ Centaur), 6m. 25s.; B. Alan Hill (7 h.p. Indian and sc.), 4m. 4s.



BRADFORD M.C.C. RELIABILITY RUN TO KESWICK AND BACK FOR THE N.S.U. CUP. J. Norman Longfield (Scott) starting. The results are not known as yet.

Ipswich and District M.C.C.

Results of members' hill-climb held on the 11th inst., in Woolverstone Park, by kind permission of Mr. Chas. Hugh Berners, J.P.:

CLASS I.—Single-cylinder Touring Models up to 500 c.c.
1. W. J. Coe (1909 Triumph) ... ... 24⅕s.
2. K. Portway (1911 B.S.A.) ... ... 26⅗s.
3. W. Sneezum (1912 L.M.C.) ... ... 28⅕s.

CLASS II.—Single-cylinder T.T. Models up to 500 c.c.
1. E. Herdman (1912 Rudge) ... ... 22⅗s.
2. D. Popplewell (1912 Triumph) ... ... 23⅗s.
3. W. Sneezum (1911 L.M.C.) ... ... 24⅖s.

CLASS III.—Any machine up to 500 c.c.
1. W. Sneezum (1911 L.M.C.) ... ... 23⅗s.
2. E. Herdman (1912 Rudge) ... ... 24s.
3. D. Popplewell (1912 Triumph) ... ... 24⅗s.

CLASSES IV. AND V.—Lightweights up to 400 c.c.
1. D. Popplewell (1912 Singer) ... ... 25⅕s.
2. F. G. Hammond (1911 Douglas) ... ... 35⅕s.
3. Dr. Hoyland (1912 Singer) ... ... 36s.

CLASS VI.—Any Machine up to 1,000 c.c.
1. E. Herdman (1912 Rudge) ... ... 22⅕s.
2. D. Popplewell (1912 Triumph) ... ... 23⅕s.
3. W. Sneezum (1911 L.M.C.) ... ... 24⅖s.

CLASS VII.—Slow Climb (knock-out).
1. D. Popplewell (1912 Singer)
2. Dr. S. S. Hoyland (1912 Singer)
3. W. E. Sneezum (1912 L.M.C.)

Fastest time of the day: E. Herdman (T.T. Rudge), 22⅕s. Course, 400 yards in length; hill with severe "S" bend.

Harrogate and District M.C.C.

A handicap speed trial was held on the 11th inst. The result was as follows: Semi-final.—T. C. Atkinson (2¾ New Hudson) a bye; W. Fawcett (6 Zenith), beat H. W. Fortune (3½ Brown). Final.—Fawcett beat Atkinson. W. Fawcett therefore holds the cup, and can now be challenged by any member to contest his position.

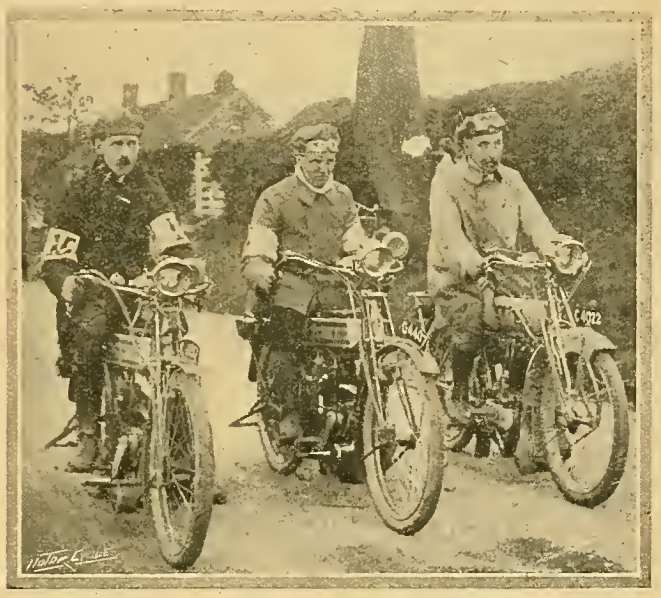
Sheffield University M.C.C.

The newly formed Motor Cycle Association of Sheffield University held its inaugural competition on the 11th inst. at Redmires, on a steep by-road having a gradient of 1 in 5. The results are as follow:

Heavyweights.—1, E. L. Moxey (8 h.p. Matchless), 40s.; 2, H. Hart-Davies (5 h.p. twin Rex), 53⅕s.

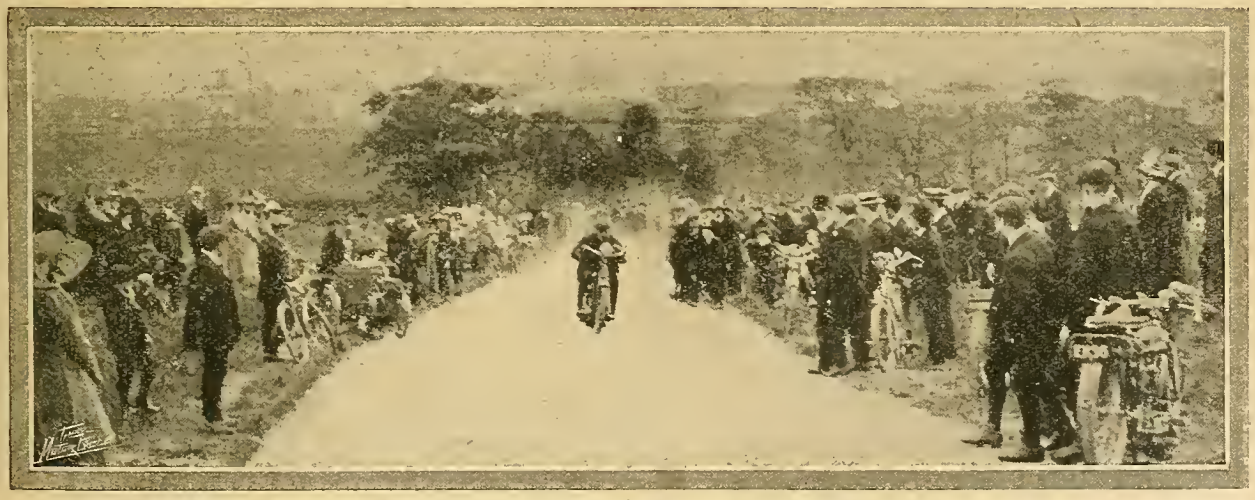
Medium Class (Singles).—1, H. Eardley (3½ h.p. T.T. Premier), 32⅖s.; 2, J. W. Gould (3½ h.p. Premier), 39⅖s.; 3, R. B. Nicholson (4 h.p. Campion), 40s.

Lightweights.—1, T. G. Hall (2¾ h.p. Minerva), 71⅕s.; 2, Birch (2¾ h.p. Douglas), 83s.



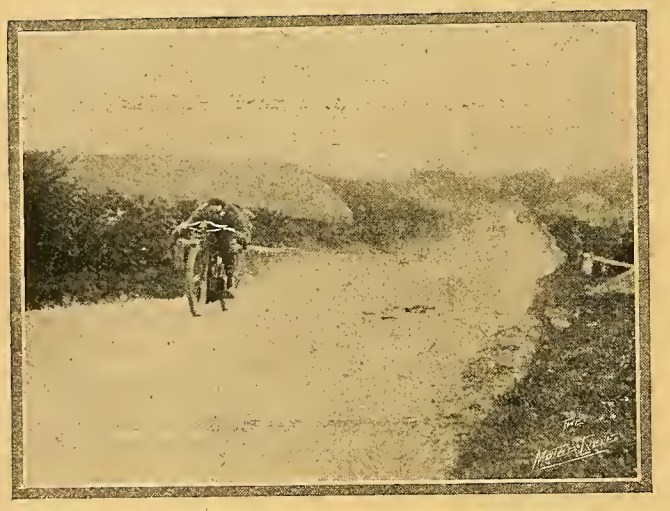
THREE ENTHUSIASTIC MEMBERS OF THE DONCASTER AND DISTRICT M.C.C.

E. Goult, the club secretary, is in the centre, F. H. Dunstan and J. Wilkinson to the left and right of him. The trio rode from Doncaster and took part in the Middlesbrough M.C.C. flexibility hill-climb at Yearby Bank the same evening, J. Wilkinson (5 h.p. Matchless-Jap) making fastest time, and Goult (3½ h.p. Rudge) being fastest of the single cylinder riders.



WIGAN M.C.C. HILL-CLIMB AT RIVINGTON PIKE.

Bolton (6 h.p. Enfield) making a good ascent. This competition was held on the 12th inst., and a big crowd was present.



E. H. Lees (7 h.p. Indian) at speed. He was winner of the All-comers' Class at the Cambridge University M.C.C. hill climb.

Cambridge University M.C.C.

A very successful hill-climb on the knock-out principle was held on Onvell Hill, near Cambridge, on the 8th inst. The hill is about five-eighths of a mile long and quite straight. Results:

Class I. (Standard Touring Singles), Final.—T. Reid (Triumph) beat N. B. Stewart (Zenith).

Class II. (Tourist Trophy Singles), Final.—E. S. Brittain (Triumph) beat J. Reid (Triumph) fairly easily.

Class III. (All Comers), Final.—E. H. Lees (Indian) beat G. F. Randall (Bat). Both started well, but the Indian drew away and romped home an easy winner.

Belfast and District M.C.

This club held a very successful hill-climb on Saturday last at Bangor, Co. Down. The afternoon was most favourable, and the hill, which measures a little over half a mile, was in capital condition. The result, which was based on A.C.U. formula, was very close. S. Corry (3½ h.p. Matchless), in addition to making the fastest time, won on formula, the placings being as follows:

	Time.	Fig. of merit.
1. S. P. Corry (3½ Matchless) ...	29s. ...	42.40
2. P. H. Dods (2¾ New Hudson-Jap)	44⅖s. ...	43.51
3. W. A. Conn (2¾ Humber twin) ...	41s. ...	43.57



DERBY AND NORTH STAFFS. A.C. SPEED TRIALS AT ETWELL, NEAR DERBY, LAST SATURDAY.

A. F. Wellesley Greeves (T.T. Triumph) on the right, winner of two events out of three. A. B. Bennett, the club secretary, is seen on the left astride his twin Brough.

Streatham and District M.C.C.

A trip to Ostend and Bruges is being held at Whitsun. The open speed trials have had to be cancelled, no course having been found suitable for the event.

Taunton and District M.C.C.

Owing to the recent decision of the Cycle and Motor Cycle Manufacturers' and Traders' Union, the hill-climb arranged to take place on Cothelstone to-day (the 16th inst.) has been indefinitely postponed and a hidden treasure hunt will take its place.

Doncaster and District M.C.C.

A paperchase was held on the 9th inst., in which twelve competitors took part. The hares (E. Goult and E. R. Scott) were caught fifteen minutes after they arrived at their destination. A good trail was laid with confetti over a very hilly course. C. Barnsdale (3½ h.p. Rex) and G. Brenchley (A.J.S.) divide the prize.

Wimbledon M.C.C.

This club held its first reliability trial on the 4th inst. The course was from Wimbledon to Hastings and back, including Westerham and Titsey Hills. The results are as follow:

Solo machines.—1, E. P. Lyon (3½ h.p. Triumph); 2, F. C. Neave (2¾ h.p. Douglas); 3, C. Stacy (3½ h.p. Kerry-Abingdon); 4, G. Cann (3½ h.p. Bradbury).

Sidecar Class.—1, E. Vallis (5-6 h.p. Clyno); 2, B. Williams (4 h.p. Matchless three-speed).



Leeds M.C.C. Hill-climb at Beulah Hill. Scene at the start (see last week's issue.)

Derby and District M.C.C.

The result of the reliability trial held on the 8th inst. was: 1, E. Horton (3½ h.p. Horton); 2, W. Cragg (3½ h.p. Singer).

Cork and District M.C.C.

The run off between the six riders who gained full marks in the Pohlmann Cup competition trial took place on the 8th inst. over a secret course of 38½ miles, speedometers and watches barred. There were six checks. Result:

	Total variation.
1. R. S. Russell (3½ T.T. Matchless) ...	5m. 30s.
2. W. J. O'Callaghan (3½ Zenith and sc.)	7m. 15s.
3. L. Dobbin (8 Matchless)	8m. 0s.
4. P. A. Egan (3½ T.T. Bradbury) ...	10m. 30s.

Russell also wins the Hutchinson Tyre Co.'s prize for best performance by an amateur, and O'Callaghan the special sidecar prize.

Burnley A.C.

The results of the hill-climb at Crown Point were:

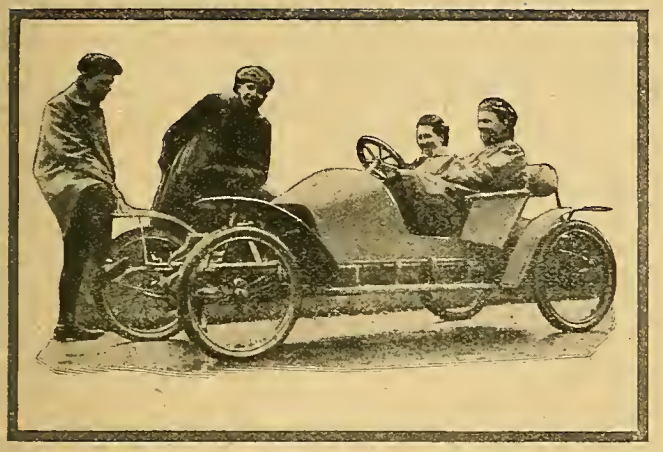
Class 1 (lightweights).—1, J. Hebden (2¾ Humber); 2, A. Clegg (2¾ N.S.U.).

Class 2 (members' class).—1, W. Simpson (3½ Rudge); 2, R. Winterbottom (3½ Rudge).

Class 3 (open class).—1, R. Winterbottom (3½ Rudge); 2, J. Hodkinson (3½ Precision).

Class 4 (open unlimited).—1, C. Smith (8 Matchless-Jap); 2, J. Hodkinson (3½ Precision).

Smith made the fastest time of the day, climbing the gradient of over half a mile in 35s. There was about sixty entries for the hill-climb, and over 1,000 spectators.



The Buck cyclecar which was out for the first time at the Notts Hill-climb at Hardwick. It is fitted with a Buck 8 h.p. twin engine (fan cooled), Buck two-speed gear, bevel drive, light back axle, Amac carburetter, and has ball bearings to most moving parts and automatic lubrication to the engine. The bonnet was not completed in time for the hill-climb.

Armagh and District M.C.

This club, which now has a membership of sixty-five, held a successful run to Newcastle Co. Down. The captain is Mr. D. H. McDowell, and the hon. secretary Mr. S. S. Sloane.

Fulham and District M.C.C.

A motor cycle club is being formed under the above title. The club is already assured of considerable support. Full particulars will be gladly sent to anyone interested by Mr. F. E. Morse, 76, Bishop's Road, Fulham, S.W.

Birmingham M.C.C.

The second annual competition for the Lycett Trophy will take place at Whitsuntide, the 25th and 27th inst. The route is to be *via* Cheltenham, Stroud, Bath, Shepton Mallet, Taunton, Exeter, Moreton Hampstead, Two Bridges, Tavistock, St. Austell, Truro, Redruth, Penzance, and Land's End. The schedule will be 20 m.p.h., and for passenger machines under 5 h.p., 18 m.p.h. Intending competitors should write at once to the Union Hotel or Perrow's Hotel for rooms, as the hotels in Penzance are likely to be very full at Whitsuntide.

Putney and District M.C.C.

A good entry was obtained for the reliability trial at Worthing, the winners being:

	Total error.
T. F. Agar (6 Zenith)	31½s.
F. R. Tillman (6 Zenith and sc.)	32⅝s.

Members are reminded that a tour to the Wye Valley is fixed for Whitsuntide.

Derby and District M.C.C.

Speed-judging trials were held on the 4th inst., starting from Dalbury Lees. Rain poured ceaselessly the whole of the afternoon, and no doubt this accounted for only a small number turning out. The result of the trial was a win for the secretary, A. B. Bennett (6 h.p. Brough); second, A. L. Spriggs (3½ h.p. Bradbury).

Purley and District M.C.C.

The hill-climb at Pebblecombe attracted thirty-seven entries. The results were as under:

Class 1. Lightweights up to 350 c.c.—1, L. F. Ebbutt (2¾ Humber); 2, S. J. Tayler (2½ A.J.S.).

Class 2. Touring and T. T. Machines up to 600 c.c.—1, H. E. Startin (Ivy-Precision); 2, V. Tomkins (Rover); 3, R. W. Gaskins (Rudge).

Class 3. Multi-cylinders up to 1,000 c.c.—1, L. F. Ebbutt (2¾ Humber); 2, C. M. Webster (8 Matchless).

Class 4. Passenger machines up to 1,100 c.c.—1, T. L. Kemp (6 Zenith and sc.); 2, D. H. Ebbutt (A.C. Sociable).

Class 5. Any machine ridden in one of the previous classes.—1, H. E. Startin (Ivy-Precision); 2, E. M. Oliver (Trinmph); 3, H. B. Willoughby (Rudge).

Silver cup for fastest time, presented by Mr P. J. Collins.—E. J. Webster (8 Matchless)

Gold medal (presented by Mr. F. Straight) for best result on *The Motor Cycle* formula $\frac{C \times T^2}{W}$.—H. E. Startin (Ivy-Precision).

North Middlesex M.C.C.

The annual reliability trial to Stratford-on-Avon and back for the Premier trophy was held on the 5th inst., twenty-two of the twenty-eight entrants starting. The course for the outward journey was East Finchley, Hendon, Edgware, Watford, Berkhampstead, Tring, Aylesbury, Bicester, Banbury, Sunrising Hill, to Stratford. From Banbury to Stratford was a non-stop section.

The return journey was Sunrising Hill, Banbury, Buckingham, Bedford, Hitchin, Hatfield, Barnet, to Highgate. From Stratford to Banbury was a non-stop section. The following observations were made on Sunrising Hill: Jennings (Win-Precision), pedalled; Hemy (Service-Jap), failed; Lloyd (Rudge), ran; Parker (N.L.G.), failed; Hilger (Premier), ran; Porterfield (Triumph), stopped with sooted plug; Carodus (P. and M. and sc.), failed. Other ascents were good, Bennett (Norton) and Fletcher (Douglas making fine performances.

The awards are as follow: H. C. Mills (3½ h.p. Premier), Premier trophy and medal. Silver medals: Noble (Rover), Jennings (Win-Precision), Lambert (Chater-Lea and sc.), Dangerfield (Premier), Bennett (Norton), A. Cass (Quadrant), and Miss Hammett (Douglas). Bronze medals: Fletcher (Douglas), Lloyd (Rudge), and Carodus (P. and M.). Mills wins the trophy for the second year in succession.

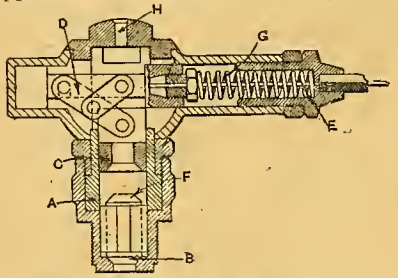
A fancy dress run and competition will be held on Saturday, June 1st, starting from Ye Olde Gatehouse, Highgate, at 3 p.m. This will be open to any motor cyclist, and awards will be made to competitors having the most original costume relative to the motor cycle.



MOTOR CYCLISTS EMPLOYED IN THE CAR INDUSTRY. Group of members of the Daimler M.C.C. at the start of the opening run to Leicester on the 4th inst.

The Amac Decompressor.

This decompressor is arranged to screw into a valve cap or other convenient aperture in the cylinder. Within the body A is arranged a fixing seat B and a seating C, which is movable by means of the irreversible toggle mechanism D and Bowden cable E. Between the seatings A and B is arranged a double-faced valve member F. When the movable seating C is allowed to be moved by the spring G into its lowest position, the movable valve member F is forced down on the seating B closing the passage, the irreversible toggle mechanism preventing accidental movement of the parts. When the Bowden mechanism is operated to raise the movable seating, the compression of the engine causes the movable valve F to travel from the seating B until its opposite face comes into contact with



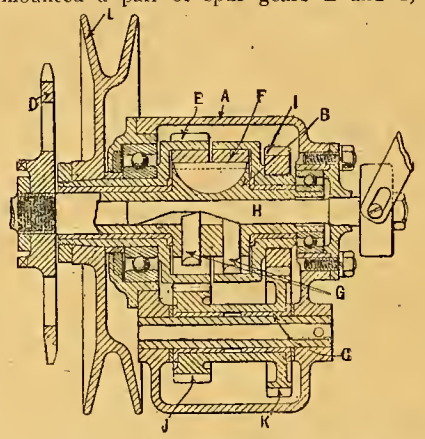
the seating C, and during this time a portion of the gas being compressed in the cylinder is allowed to escape past the seating issuing from the aperture H, and so relieving the compression with the well known advantages.—F. H. de Veulle, No. 13,953, 1911.

PATENTS

by Eric W. Walford A.C.I.P.A.

A Two-speed Countershaft Gear.

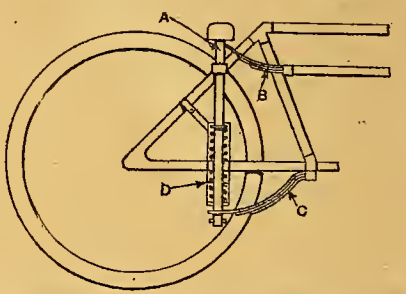
Within a casing A is arranged a shaft B and a layshaft C. Motion is transmitted from the engine to the chain wheel D driving the shaft B upon which are mounted a pair of spur gears E and I,



which are carried by drums, within which are arranged expanding brake bands F. These brake bands are operated by suitably shaped segments G, operated by incines on a movable rod H. The spur gears E and I gear with corresponding wheels J and K on the layshaft C, and the wheel E is positively connected to the belt-driving pulley L. In operation, when the brake band holding the gear wheel E is expanded, the motion is direct from the shaft B to the gear E, and thence to the belt pulley L. To obtain a reduced gear the brake band wheel F is released, and that holding the gear wheel I is operated. Motion is now from the chain wheel D to the shaft B, thus driving the gear wheel I, thence to the layshaft gears K and J, and from J to the gear wheel E, again rotating the pulley L, but at a reduced speed.—The Minstrel and Rea Cycle Co., Ltd., and G. W. Hands, No. 5,927, 1911.

An Anti-vibratory Seat Support.

The drawing illustrates a method for carrying the seat supporting pillar A by means of a pair of laminated springs B C,



supplementary spiral springs D being employed to take the lighter shocks.—F. A. E. Nicholson, No. 15,359, 1911.

Change of Address.

Owing to the demand for Stewart magnetic speedometers the Cooper Stewart Engineering Co. have been compelled to remove to larger premises at 11, Broad Street, Bloomsbury, W.C.

Boscombe Garage.

An up-to-date garage recently opened at Boscombe, on the main road from Christchurch to Bournemouth, is Messrs. Hart and Lord's, where motor cyclists will receive every attention at moderate charges.

Inner Tube Specialists.

The Standard Rubber Co., Berner's Place, Berner's Street, W., are making a speciality of inner tubes for motor cycles of the highest possible grade. They are constructed of almost pure Para rubber, are black in colour, and of great strength and elasticity. Though of ample thickness they are not heavy.

A Successful Lightweight.

The lightweight Alcyon, which did so well in the various trials and competitions during last season, has been considerably improved for this year. The machine is now fitted with wider and more substantial mudguards, with side flaps to the front mudguard, stronger carrier, rubber covered foot-rests, a new frame, and a larger silencer. A Claudel-Hobson carburetter is fitted. This carburetter is, we understand, most successful and renders the engine extremely flexible. So much so that the machine can be easily turned round in the width of an ordinary road with the engine firing.

SPARKLETS

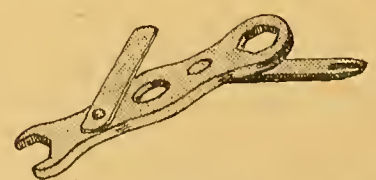


Pillion Seats.

The Michell pillion seat mentioned by Mr. R. T. Adams in the Correspondence columns of the issue of May 2nd is now known as the V.M. tandem seat. It is supplied by C. F. Michell and Co., 17, Wormwood Street, E.C.

A Fibre Bush Reamer.

A few weeks ago we suggested that a small reamer might be supplied with advantage by magneto makers for sizing the hole in the fibre bush of the contact breaker to enable the fulcrum to work freely in the bush when the latter has swollen through damp. The Simms Mag-



neto Co., Ltd., Welbeck Works, Kilburn, N.W., acting on our suggestion have sent us a small reamer embodied with the usual magneto gauge and spanner. These they are ready to supply to anyone who needs them at a very small cost. Our sketch of the tool renders further explanation unnecessary.

Trial of a New Plug.

We have had one of the new type Forward plugs in use for the last week or so. This plug has a bent over central wire, which projects through a ring in the centre of the earthed electrode. This plug has been quite satisfactory in every way; it does not soot up, and so far we have not found it necessary to remove it from the cylinder.

Catalogues Received.

The Service Co., Ltd., 292-293, High Holborn, W.C., were one of the earliest firms to publish a catalogue specially for motor cyclists. Their latest production is a bulky work which consists of no less than 224 pages. In it there are 1,000 illustrations and over 4,000 articles separately enumerated. The catalogue deals with complete machines down to the smallest accessory. Valuable hints to those about to buy machines are embodied in the preface entitled "Selecting a Motor Cycle."



A new Simms plug. The chief novelty is in connection with the shape of the electrodes. The central wire is round and the earthed electrodes are semi-circular at the ends, so providing a correct gap which forms almost a continuous circuit of the central wire.

Buy the

P&H

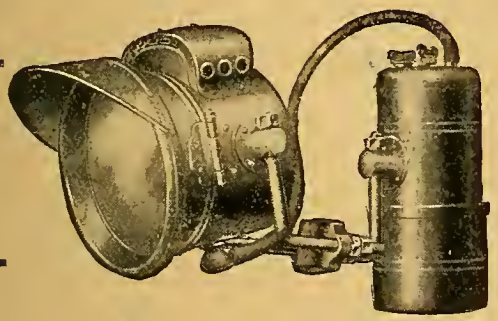
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Motor Cycle Headlight

THE famous "P. & H." reputation for "Quality" is fully maintained in the "Model 125," illustrated here. British-made, thoroughly reliable, it is the Lamp you need to search out the danger of the road, and ensure your perfect safety awheel.

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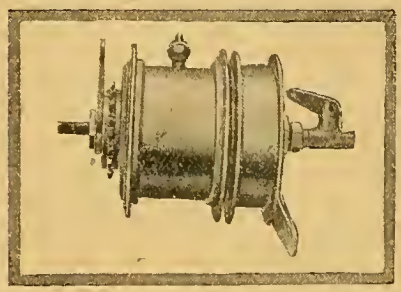
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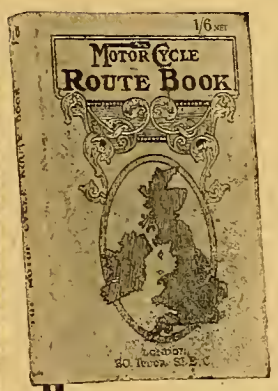
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—Here are two of our Fitments—the best and strongest Models of Single and Double Controls on the market.

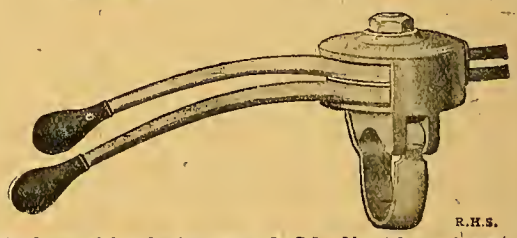
—Note them—and that these and many others are fully described in our 1912 Book of "BOWDEN Motor Cycle FITMENTS"—and NOW write for a copy of this interesting publication. It's free.

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Single Control for Magneto. B.C.L., No. 200, price 4/6

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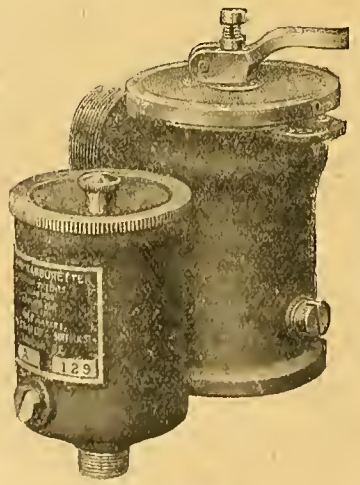
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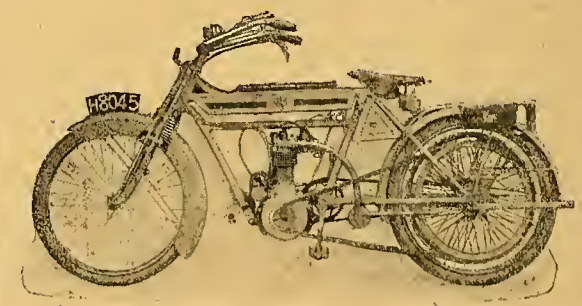
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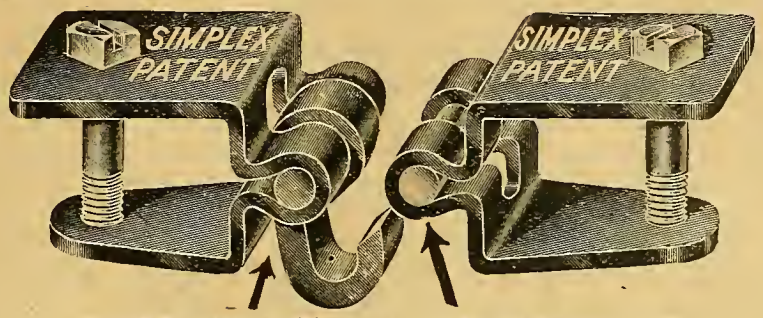
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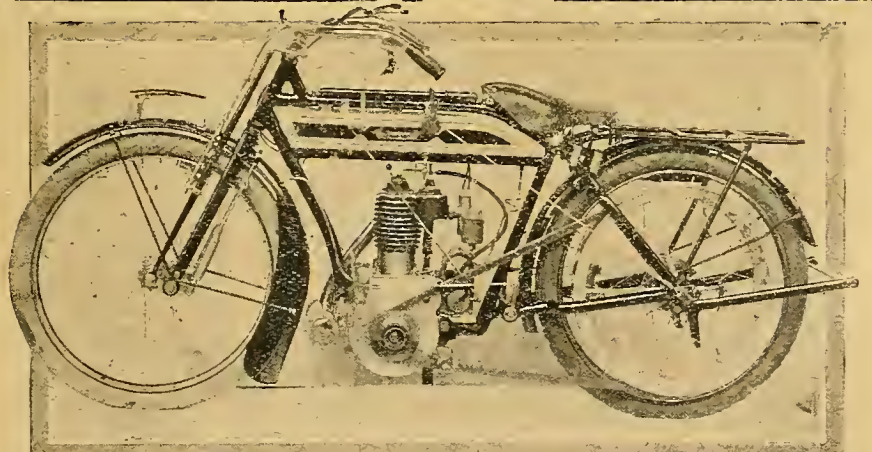
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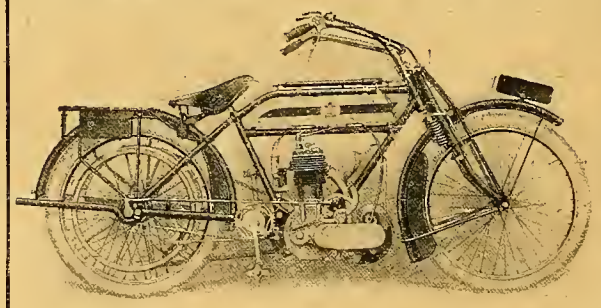
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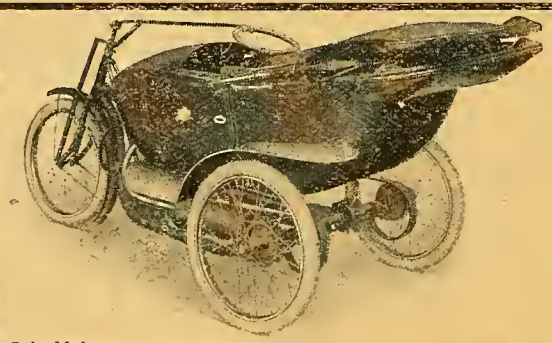
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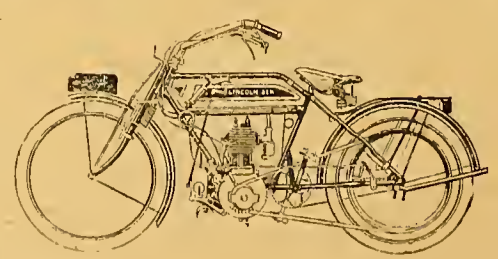
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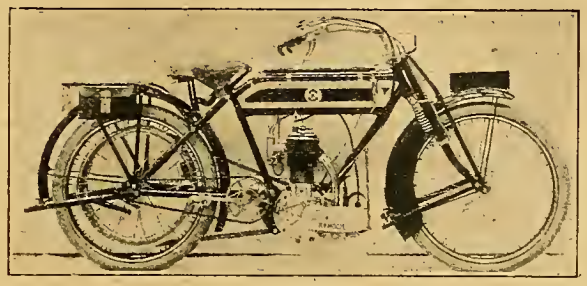
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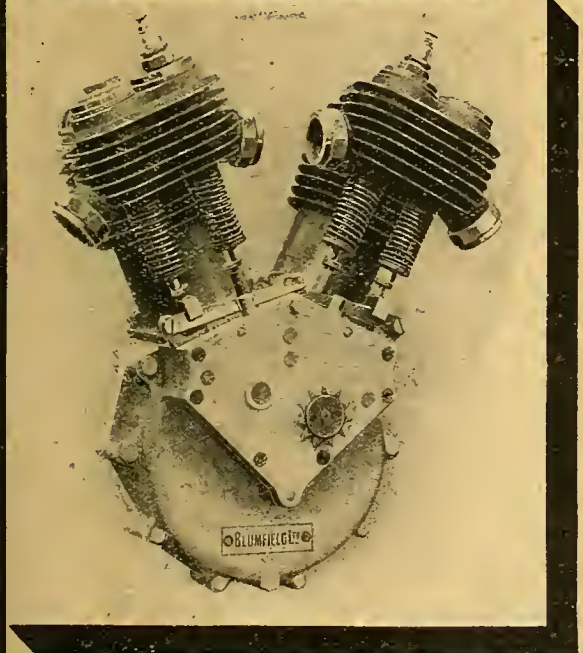
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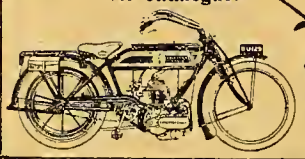
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Extract from letter in "The Motor Cycle," May 2nd.

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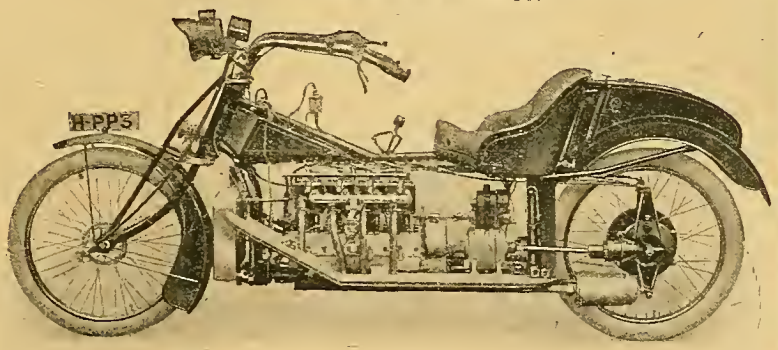
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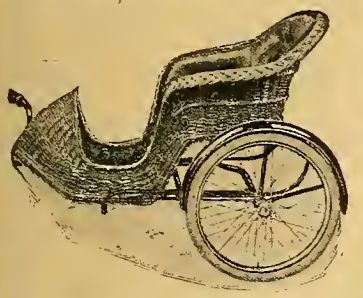
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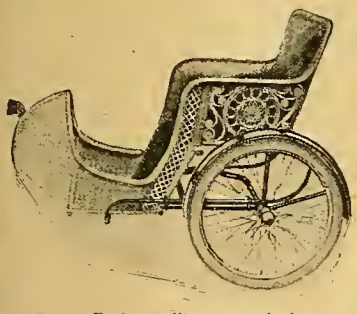
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1912 3½h.p. Premier, with 2 speeds, sidecar, and all accessories, one week old, £57/10; 1912 3½h.p. Zenith, one month old, £45; 1911 3½h.p. Humber, 2 speeds, £38; 1911 3½h.p. Premier, 2 speeds, sidecar, all accessories, £40; 1908 3½h.p. P. and M., £30; brand new machines in stock; Clyno and sidecar, £85; Premier, 3½h.p., 2-speed gear, £58.—10, Horton Rd., Bradford. Tel.: 5361.

TIMBERLAKE, Wigan, for Premiers; in stock.

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TIMBERLAKE, Wigan, for Rovers; in stock.

TIMBERLAKE, Wigan, for Triumphs; in stock

TIMBERLAKE, Wigan, for New Hudsons; in stock

TIMBERLAKE, Wigan, for sidecars; large variety in stock.

TIMBERLAKE, Wigan, for exchanges; we are open to take second-hand machines and sidecars of any known make in part exchange for new one; we allow best market value.

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ZENITH, 1911, good condition, 3½h.p.; £36, very fast.—Jeffries, 206, Psalter Lane, Sheffield.

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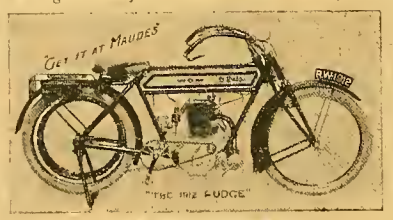
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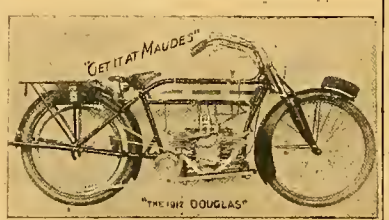
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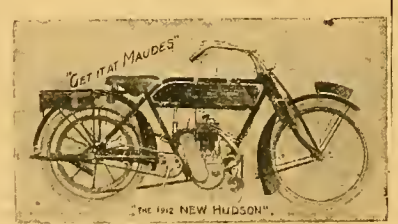
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THE 1912 RUDGE.
All Models immediate delivery.



THE DOUGLAS.
All Models immediate delivery.



THE NEW HUDSON.
3½ h.p Models immediate delivery.

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REX.	CHATER.
KERRY.	INDIAN.
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BAT.	BRADBURY.

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3½h.p. Bradbury, new Oct., 1911, everything as new, mileage 600: £33 offer.—2, Paradise Terrace, Blackburn.

1¾h.p. N.S.U. Magneto Lightweight, new belt, perfect order; £11. — Fisher, 76, Scotforth Rd., Lancaster

PREMIER, 3½h.p., brand new, 1912; owner cannot complete purchase; sacrifice £39.—17, Peel St., Accrington.

3½h.p. Triumph, 1907, good sidecar machine; any trial; £20.—Slater, Whittingham Lane, Goosnargh, Preston.

1911 (late) 2h.p. Humber, not done 500 miles, excellent condition.—Johnston, 1, Cunard Rd., Letherland, Liverpool.

TRIUMPH, 1910, free engine, scarcely ridden, many accessories and spares; £36.—Whitehouse, Market Place, Oldham.

1912 3½h.p. Premier, 3-speed, done 700, perfect condition; £48, lowest.—Blackbourn, 261, Ecclesall Rd., Sheffield.

MERRICK for Bradburys, Chater-Lea, Rudge, A.J.S., Matchless, etc.—Merrick's Stores, Listerhills, Bradford. 'Phone: 2439.

1910 F.E. Triumph, just overhauled, new bearings and piston, spare tyre, tube; £37.—Collins, 5, Promenade, Bridlington.

1911½ James, 3½h.p., not done 1,000 miles, in perfect condition: owner bought car.—7, Sunnyside, Prince's Park, Liverpool.

N.S.U., 1910½, 4h.p. twin, 2-speed gear; £30, or close offer.—Motor Exchange, 32, Downing St., Manchester.

CLYNOS.—We are the largest contractors in the world, wholesale or retail. Write at once.—Hitchens, Ltd., Morecambe.

1912 3½h.p. T.T. Rudge, guaranteed new this month. Cowey horn, not done 150 miles; £48.—509, *The Motor Cycle* Offices, Coventry.

HUMBER Lightweight, run 200 miles; £25; exchange with cash for free engine and sidecar.—60, Rigby Lane, Bradshaw, Bolton.

3h.p. Rex Lightweight, 1908, magneto, £14, or exchange sidecar machine, cash adjustment.—Coldwell, 19, Victoria St., Holmfirth.

LOOK.—N.S.U., 1909, 2-speed, £21/10; 1911 clutch model Moto-Reve (single), run 900, £21/10; exchange.—40, Andover St., Sheffield.

CROSS for Triumphs, Matchless, Bradbury motors; Douglas in stock. £41; also 1911 Rudge, as new, £36.—Cross, jeweller, Rotherham.

2h.p. Moto-Reve, bought new this Easter; price £22/10; reason for selling, going in for sidecar combination.—North, Market Place, Malton, Yorks.

1911 T.T. Calthorpe, £32; 1911 T.T. Singer, £34; 1911 T.T. Rex, as new, 5h.p. twin, £35; cash; no swaps.—Hitchens, Ltd., Morecambe.

4h.p. Campion-Jap, late 1911 model, special finish, Palmer cord tyres, 2 lamps, spares, perfect condition; £40.—G. Walker, jun., Wales, Sheffield.

2¾h.p. Minerva, Bosch magneto, Chater-Lea frame, Continental tyres, and new belt, splendid low machine; £20.—Batten, Hampden St., Bolton.

1912 Bradbury and Sidecar, Lucas King of the Road lamp, Dunlop and Whittle belts; buying T.T. model; accept £49.—19 Moorgate, Rotherham.

1912 Blue Indian, 7h.p., 2-speed, kick starter, Kempshall tyres, condition as new, done 250 miles; £65 cash; no swaps.—Hitchens, Ltd., Morecambe.

PREMIER, clutch model, £54/17, uncrated; through unforeseen circumstances will accept first cheque 12 guineas.—35, Hough Lane, Leyland, near Preston.

BOLTON.—Immediate delivery special sidecar model 4h.p. 2-speed Singer, with grey coach-built torpedo sidecar; £75.—Grosvenor Motor Co., Bradford St. West, Bolton.

3½h.p. Triumph, 1908½, magneto, just been overhauled, in perfect condition, tyres, belt, enamel, plating good; £28/10 cash.—Crewe, Ledger Lane, Outwood, near Wakefield.

TRIUMPH, 1909, engine recently overhauled, new tyre, Autoclipse lamp, horn, back rest, spare belt bag; £25 cash.—Goodbehive, 167, Plymouth Grove, Manchester.

F.N., 2¾h.p., new accumulator, h.b.c., B. and B. carburetter, footboards, good tyres, ready for the road; £11/10. — R. Greenwood, 10, Stannally St., Lydgate, Todmorden.

FOR Sale, 3½h.p. Brown, £18, Roc free engine, 2-speed, Whittle, Brown and Barlow control, magneto, spring forks; no offers; condition good.—Apply, Calvert, Picture Hall, Eston.

1912 6h.p. Rex, cone clutch, car tyre on back, 1in. Dunlop belt, De Luxe saddle, run about 300 miles, more suitable for sidecar; £54.—J. Flewitt, Barrows Green, Widnes.

2¾h.p. Minerva, m.o.v., h.b.c., Whittle belt, adjustable pulley, just been thoroughly overhauled, very reliable; £7/10.—Hodgson, Mayfield, Fairfield Rd., Latchford Without, Warrington.

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IF you want a Second-hand Motor Cycle—

GET IT AT MAUDE'S.

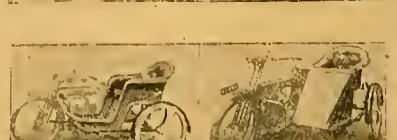
No pig in a poke business about us. You may know what you are buying, and we GUARANTEE even our SECOND-HAND MACHINES. That's worth bearing in mind. Nothing is too much trouble to satisfy you, and you may have the satisfaction of knowing that the price you pay is the very lowest limit at which such a machine could be obtained. We are cheaper than private advertisers, and we are always here if you want us. That's another useful point to remember. Here are a few—

ALL GUARANTEED.

Stock No.		
210.	**REX DE LUXE** 7 h.p., 1911 model	£44
228.	**F.N.** 4½ h.p., 4-cylinder model	£22
247.	**CHATER-J.A.P.** 4 h.p., 1910 model	£26
183.	**N.S.U.** 5½ h.p., 1908 model, 2 speeds	£25
177.	**N.S.U.** 5½ h.p., 1908 model, 2 speeds	£26
236.	**REX** 3½ h.p., 1911, cone clutch, new ..	£39
148.	**N.S.U.** 3½ h.p., 1908, 2 speeds	£22
170.	**SCOTT,** 2-stroke, 2 speeds, Palmers	£25
276.	**PHŒNIX** Quadcar 8 h.p., 2-seater, mag.	£30
294.	**REX** 5 h.p., tourist, spring forks	£17
207.	**REX** Airette 5 h.p., wants overhauling..	£14
293.	**STAR** Car 6 h.p., 2-seater	£20
295.	**F.N.** 5-6 h.p., 1910, 4-cylinder	£29
195.	**ANGLIAN** 2 h.p., vertical engine	£9
198.	**CENTAUR** 2 h.p., belt drive	£6
275.	**MINERVA** 2 h.p., M.O.V., low built	£8
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	REX, 5 h.p., 1911 model, 2-speed	£42
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334.	**DOUGLAS.** 1911, 2¾ h.p., carefully used	£33
339.	**PORTLAND,** 3½ h.p., 1911, tourist, complete	£33
346.	**MINERVA,** 3½ h.p., Chater frame, spring forks	£24
345.	**TRIUMPH,** 3½ h.p., 1910 model, lovely order	£33
344.	**PREMIER,** 3¾ h.p., 1910 model, twin..	£28
338.	**EXCELSIOR,** 3 h.p., 2 speeds, 3-wheeler	£12

THE PORTLAND SIDECAR





£6 0s. to £15 15s. All guaranteed twelve months. Michelin or Continental tyres. Call and inspect.

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POWELL STREET,
HALIFAX.

RUDGE 2-speed and free-engine and adjustable pulley; engine starts with the back wheel on the ground £56 10
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ROYAL ENFIELDS, 1912, any model.
NEW HUDSON 3-speed ..... 57 Gns
ZENITH GRADUA £55 13
ZENITH GRADUA, 1912, 4 h.p., guaranteed not to have done 50 miles; a bargain £50 0
NEW HUDSON, 3-speed several improvements, not done 200 miles £51 0
BRADBURY, 1911, all improvements .. £36 0
PREMIER, 1912, 3-speed Armstrong gear with special sidecar hub £59 0
JAMES, 1912, any model. Delivery from stock.
J.A.P.-CAMPION, new, 1912 ..... £38 0
TRIUMPH, 1911, clutch model, not done 400 miles £49 0
HUMBER, 1911, like new, complete £44 10
F.N., 1911, 6 h.p., 2 speeds and free engine, 4-cylinder, with 1912 engine £40 0
F.N. 4-cylinder, splendid running order .. 18 Gns
TRIUMPH 3½ h.p. £20 0
PREMIER, not done 500 miles £36 0
MOTO-REVE, late 1911, like new, 3 speeds and free engine £34 0
REX, 1910, several improvements £27 10
REX, 1910, Binks carburetter £25 0
N.S.U. 5 h.p., 2 speeds, spring forks, B. and B. h.b.c. carburetter £24 0
CHATER-LEA-PEUGEOT 3½ h.p., magneto ignition h.b.c. £18 0
N.S.U. 3 h.p., all improvements £18 0
QUADRANT 3½ h.p., will take sidecar .. £12 0
REX DE LUXE, 1908, 5-6 h.p., 2 speeds and free engine, handle starting £20 0

50/- down and **5/-** weekly secures any of the following:
MINERVA 2⅞ h.p., h.b.c. £10 0
FAFNIR 2¾ h.p., h.b.c. £10 0
HUMBER 3 h.p., h.b.c. B. and B. carburetter, 26×2¼ non-skid tyres, chain drive £11 0
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DE DION, Phœnix 2-speed gear, chain drive £10 0
REX 2h.p., spray carburetter £7 0
HUMBER 3 h.p., chain drive, low built £10 0
SINGER, 3 h.p., chain drive, high tension magneto ignition, h.b. control, 26in. wheels £12 0

PEUGEOT Car, 9 h.p., 2-seater, 3 speeds and reverse £17 0

S. & R. Sidecar, wicker basket, nicely upholstered £5 5
S. & R. with wheel supported at both sides £6 6
Write for a sidecar catalogue which tells you the latest improvements in sidecars.



Footrests, post paid 2/10

MISCELLANEOUS.

Second-hand coach built £9 9s. Sidecar £5
Second-hand £8 8s. Coronet Sidecar £4
New Motor Head Lamps, with separate generators. Special line 9/6
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New Fuller Midget Coil 7/3
Long Handle-bars 4/9
Tubular Carriers ..... each 4/-
Rubber Goggles, 2 sets of glasses ....1/8 per pair
Horns, Triumph pattern 4/9

SCOTT'S,
Victoria Motor House,
POWELL STREET, HALIFAX.
Telephone—433 National.
Telegrams—"SCOTT, Powell Street, Halifax."

MOTOR BICYCLES FOR SALE.

DOUGLAS, 1911, like new, lamp, generator, horn, spares; £30.—Knight, 42, St. John's Hill, Shrewsbury.

1911 Singer, 3½h.p. F.E., only slightly soiled, as new, £35; 1911 Humber, 3½h.p. F.E., 2-speed, perfect condition, £30; 1911 Humber, 2¾h.p., lightweight, as new, £25; 1911 Bradbury standard, only slightly soiled, £33.—W. Chetwood, Hospital St., Nantwich.

NO. 7 Chater-Lea and Sidecar, J.A.P. engine, 8h.p., 3 speeds, 800×80 car tyres, only done 2,800 miles, complete, speedometer, watch, lamp, horn, 3 spare tyres; £80/10; any trial given; can be seen any time, Sunday included.—Alfred White, 162 and 163, Summer Lane, Birmingham.

ROYAL Enfield Twin, cost £45 four months ago, condition and appearance exactly as new, accept £33, nearest; N.S.U., 1908, 3½h.p., magneto, Palmer cords, new tubes, splendid condition, climb anything, £16/16; 3h.p. Brown, new tyres, tubes, spring forks, bargain at £9/10; agency for Bradbury, B.S.A., Singer.—Watson, Motors, Ripley, Derby.

SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

2¾h.p. Forward Twin, 1911¼, equal to new; £25.—D. Cocke, Gas Works, Smethwick.

ZENITHS, 3½ and 6h.p., in stock for immediate delivery.—Taylor, cycle agent, Kettering.

RUDGE, 3½h.p., 1911, little used, new belt, valves, perfect; £38.—A. Cole, Revesby, Boston.

3½h.p. N.S.U., 2-speed, free engine, battery, reliable machine; £13.—Warr, Duncombe St., Grimsby.

REX de Luxe Twin, handle starting, perfect condition; £25.—Smith, 47, Court Lane, Erdington.

DRUMMOND Lathe and Tools, cost £22, accept quick sale £15.—White, 162, Summer Lane, Birmingham.

SCOTT, 1910, just overhauled, excellent condition inside and out; 35 guineas.—Vickers, Dunchurch.

RUDGE, free engine, 1912, new; cannot accept delivery; £50, no offers.—Forinton, furnisher, Boston.

1912 Triumphs, Bradburys, Premiers, Humbers, Rudge, in stock.—Clifford's Motories, Eastwood, Notts.

PRECISION late 1911, 3½h.p., F.E., speed gear, and sidecar; £40; trial arranged.—9, Charleville Rd., Handsworth.

1911 Humber Lightweight, very little ridden, condition perfect; accept £23.—Kerby, 14, Little Park St., Coventry.

1912 Bradbury, Rudge, B.S.A., Alldays, New Hudson, 2¾h.p. and 3½h.p. 3-speeds in stock.—Blackburn, Spalding

PREMIER, 1912, 2¾h.p., free engine, Armstrong 3 speeds, only ridden few miles.—Swan, Fieldgate Lawn, Kenilworth.

INDIAN, 1911, 5h.p., clutch model, enamelled blue, excellent order; £35.—P. J. Evans, 358, Stratford Rd., Birmingham.

1911 Rex, 5h.p., clutch model, and sidecar, complete with all spares; £35.—P. J. Evans, 358, Stratford Rd.

LADY'S Hobart, 1911, with Armstrong 3-speed; £35.—P. J. Evans, 358, Stratford Rd., Birmingham.

CLYNOS.—Book at once for immediate delivery. Don't wait months; also one 1912 second-hand, done about 600 miles, £60, complete, lamp, and horn.—P. J. Evans, sole Birmingham agent, 358, Stratford Rd., Birmingham. Tel.: 13 Victoria.

TRIUMPHS, 1908, standard, excellent order, £27/10; 1909 T.T., very fast, £27/10; 1909 standard, free engine, £19/10; 1910 standard, complete, £32.—P. J. Evans, 358, Stratford Rd., Birmingham.

HUMBER, 1911, 2-speed, splendid condition, £37/10, with sidecar £42; 1911 Humber lightweight, as new, £25.—P. J. Evans, 358, Stratford Rd., Birmingham.

DOUGLAS, 1910, standard, £24; 1911 standard, £28/10; both guaranteed perfect.—P. J. Evans, 358, Stratford Rd., Birmingham.

1912 Rudge, F.E., lamp, generator, tools, and spares, ridden 3 weeks; selling through illness; £45.—Hart Davies, Southam.

IVY-PRECISION, 1911, 3½h.p., Dunlops, perfect condition; £27/10, complete with spares.—77, Edward's Rd., Erdington

TRIUMPHS, one 2-speed and one direct drive, both perfect; bargains.—James Allday, 11, Vernon Rd., Edgbaston, Birmingham.

1911 T.T. Roadster Triumph, superb condition, new back cover; nearest offer to £40, or £46 with sidecar.—Rev. P. W. Bischeff, 1, Kerr St., Northampton.

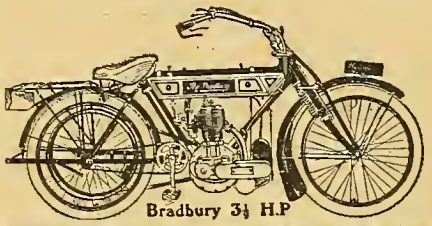
1912 Precision, with or without sidecar, enclosed magneto, variable jet carburetter, only used a few miles, complete; £38.—162, Summer Lane, Birmingham.

Collier's Motories,
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ENGLAND.

1912 BRADBURYS.
THE IDEAL SIDECAR MACHINES.

The greatest power in single-cylinder machines, giving maximum efficiency and freedom from attention.

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3½ h.p. 2-speed BRADBURY £55
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Bradbury 3½ H.P

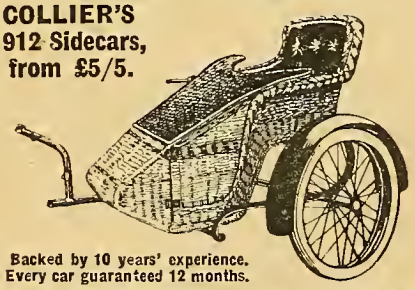
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SECOND-HAND MACHINES.
—CASH, EXCHANGE, OR EASY PAYMENTS.—

1910 2-speed **SCOTT** £37 10
1912 3-speed **NEW HUDSON**, only had road tests £49 10
1911 Twin 2-speed **REX DE LUXE** £47 10
6 h.p. 2-speed Twin **ANTOINE**, Druids, as new.... £35 0
1911 3½ h.p. Tourist **REX**, new and unused ..... 34 gns.
5 h.p. 2-speed free-engine **ROC** £29 10
1910 7 h.p. Twin **REX**, M.O.V. £37 10
Magneto **TRIUMPH**, spring forks, very smart.... £23 10
Magneto Twin **REX**, new and unused ..... 33 Gns.
REX, 1909, 3½ h.p., spring forks, h.-b. control .. £24 10
4½ h.p 4-cylinder **F.N.**, magneto £19 19
2¾ h.p **KERRY**, runs well, spring forks £10 10
1910 3½ h.p. T.T. **REX**, very fast £27 10
2¾ h.p. **DE DION**, spray carburetter £10 10
1911 3½ h.p. 2-speed **N.S.U.**, spring frame..... £35 0
3 h.p. **HUMBER**, chain drive £7 10
1911 3½ h.p. Magneto **REX**, spring forks..... £29 10
2¾ h.p. Magneto **MINERVA** £16 10
1910 3½ h.p. **REX**, brand new, spot cash, bargain £29 10
1910 New Twin **REX**, Cantilever seat ..... 35 Gns
1910 Twin **REX DE LUXE** and sidecar £45 0
MOTO-REVE, magneto, Druids £19 19
1910 **ROYAL ENFIELD** Lightweight, very smart £22 10
2½ h.p. **J.A.P.**, spring frame, h.-b. control..... £9 10
3½ h.p. Light Low **REX**, h.-b. control..... £12 10
1911 3½ h.p. Tourist **REX**, 100 miles only £32 10
1911 Single-cylinder 2-speed **REX**, 300 miles £37 10
5½ h.p. Twin **REX**, spring forks £16 10
2¾ h.p. **ALCYON**, wants slight attention £6 10
3 h.p. **M.M.C.**, special finish..... £10 10

A CALL WILL REPAY YOU.

COLLIER'S 1912 Sidecars, from £5/5.



Backed by 10 years' experience. Every car guaranteed 12 months.

"Popular" Chipper or Continental tyre £5 5 0
"Superbe" type, with best tyre, apron, etc..... £6 6 0
Side-entrance body, as illustrated £7 10 0
Ditto, with best coach-built body £7 12 6

Improved Quick Detachable Joints, Cranked Extra Strong Back Axle and Spindle to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

Discount to Trade Exchanges entertained.

1911 **Brand New Tourist and de Luxe REXES from Stock. Liberal exchanges in addition to special Cash Discount.**

MOTOR BICYCLES FOR SALE.

J.A.P., 2½h.p., Chater frame, low, B. and B., new dry battery, climbs well, perfect running order; £12.—32, Manor Rd., Rugby.

9h.p. Bat-Jap, everything in perfect order; price £32; full particulars on application.—Williamson, St. George's Sq., Stamford.

£7.—Humber, 3h.p., just bored and re-bushed, B. and B., h.b.c., good tyres, new belt.—Glenroy, Wake Green, Moseley, Birmingham.

2½h.p. Rex Lightweight, Bosch magneto, in good running order; £16, or near offer; exchange considered.—11, Conway Rd., Leicester.

2¾h.p. De Dion, low frame, long handle-bars, B. and B. carburetter, h.b.c., good condition; £8.—Beckham, Hallaton, Uppingham, Rutland.

1911 Humber, 3½h.p., 2-speed, sidecar, Cowey, lamp, generator, horn, whistle, only used 2,300 miles; owner gone abroad; £45.—Plastow, Grimsby.

PLASTOW, Grimsby, has the following new F.E. and multi-speed models in stock: Triumphs, B.S.A.'s, Rudges, Premiers, Bradburys, and Humbers, for immediate delivery.

PLASTOW, Grimsby, has the following second-hand machines for sale: 3h.p. Griffin, £6; 3½h.p. Minerva, £9; 1¾h.p. Clement-Garrard, £8; 3½h.p. Chase, £10/10; 2¾h.p. Fairy, Bosch magneto, £12/10; 1908 Triumph, £24; 1909 Triumph, £26; 1910 F.E. Triumph, £37/10; 1911 Standard Triumph, ridden 1,200 miles, £40; 1911 F.E. Rudge, only ridden 1,800 miles, £43; 1911 2¾h.p. Hobart, £27; 1912 2¾h.p. Premier, run 100 miles, £33.

SCOTT, 3½h.p., 1911½, new Palmer tyres and chains, all necessary spares and tools, spleadid condition throughout, in perfect tune; £45.—W. Pennell, Swallowbeck, Lincoln.

REX, 1911, T.T., 3½h.p., very speedy machine, Druid forks, Bosch magneto, B. and B. carburetter, in first-class order throughout; £25.—G. Peace, Esrlsdon St., Coventry.

LADY'S 2¾h.p. J.A.P., just overhauled by makers, splendid condition, magneto; selling through illness; £25.—Box L6,992, *The Motor Cycle* Offices, 20, Tudor St., E.C.

REX De Luxe, 5-6h.p., twin-cyl., free engine, 2 speeds, Bosch magneto, spring forks, fitted with coach-built sidecar; sell turnout £36.—Brown's, 12, Bull Ring, Birmingham.

DOUGLAS Motor Cycle, 2¾h.p., magneto ignition, spring forks; sell, bargain, £22/10.—Brown's, 12, Bull Ring, Birmingham.

REX, twin-cyl., 5-6h.p., 1910 model, free engine, Palmer tyres, spring forks and seat pillar; sell, bargain, £32.—12, Bull Ring, Birmingham.

TRIUMPH Motor Cycle, 3½h.p., magneto, Dunlop and Michelin tyres; bargain, £28.—12, Bull Ring, Birmingham.

PRECISION, 3½h.p., 1912 model, Bosch magneto, Druid spring forks, Palmer tyres, lamp, horn, etc., as new; bargain, £32.—12, Bull Ring, Birmingham.

BRADBURY Motor Cycle, late 1911 model, free engine, 3½h.p., excellent condition; sell, bargain, £38.—12, Bull Ring, Birmingham.

SPEED King Rex, 3½h.p., m.o.v., 1911 model, magneto, very fast; bargain, £24.—Brown's, 12, Bull Ring, Birmingham.

F.N., 4-cyl., magneto, spring forks; bargain, £16.—Brown's, 12, Bull Ring, Birmingham.

INDIAN, red, 1910 model, 5h.p., free engine, spring forks; sell £32.—Brown's, 12, Bull Ring, Birmingham.

1911 Bradbury, 2-speed and free engine, and side car, lamp, horn, spare belt and valves, good condition; any trial; £48. — Tomkins, Cotton End, Northampton.

REX, 3½h.p., accumulator ignition, Dunlop 26in. × 2in., heavy tread, and Bates ditto front tyres, spring forks, good order; photo.—Apply, Blake, Mill Lane, Kirkstead, Lincs.

FOR Early Delivery of Triumphs, Premiers, Rovers, Humbers, Singers, Rudges, Rex, and Clyno, order from the man on the spot, Brandish, motor agent, Foleshill Rd., Coventry.

B.S.A., 2-speed and clutch models in stock; why wait for delivery; first cheque secures one of these famous monats.—Official agent, Newell, Lozells Rd., Aston, Birmingham.

3½h.p. Rex, 1910, reliable and fast machine, Lucas lamp, N'all saddle, all spares, including cover and tube, both tyres as new; £25. — E. Turner, The Grove, Sutton Coldfield.

TRIUMPH, 1909, fixed engine, standard specification, good condition and appearance, guaranteed throughout, what offers? also 1910 2¼h.p. twin Enfield lightweight, Palmer cord tyres, Brooks saddle, khaki, used 600, guaranteed; approval either.—Holt, Motors, Leamington.

NO. 7 Chater-Lea and Sidecar, J.A.P. engine, 8h.p., 3 speeds, 800×80 car tyres, only done 2,800 miles, complete, speedometer, watch, lamp, horn, 3 spare tyres; £80/10; any trial given; can be seen any time, Sunday included.—Alfred White, 162 and 163, Summer Lane, Birmingham.

WE CAN DELIVER

FROM STOCK

the following new 1912 Motor Cycles:

TRIUMPH (Free Engine).
ZENITH-GRADUA, 6 h.p.
INDIAN, 7 h.p., two-speed.
N.S.U., 3½ h.p., two-speed.
REX (all models).
HUMBER, 3½ h.p., two-speed.
HAZLEWOOD, 2¾ h.p., three-speed.

We carry a complete range of Lucas Lamps, Miller's Lamps, Cowey Speedometers, etc., and can equip the machine to your own specification without any delay.

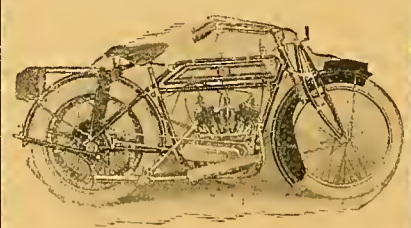
Exchanges or Easy Payments.

List of Second-hand Motor Cycles free upon request.

The Premier Motor Co., Ltd.,

Aston Road, BIRMINGHAM.

Telegrams: "Primus," Birmingham.
Telephone: Central 4310.



The 1912 REX J.A.P.

The proved best Sidecar machine.

Write for Catalogue.

MOTOR BICYCLES FOR SALE.

1912 N.S.U., 3h.p., twin, free engine, 2-speed, brand new, advertiser paid £5 deposit, cannot take delivery, unforeseen circumstances; will sacrifice deposit.—217, Heathfield Rd., Handsworth, Birmingham.

RUDGE, 1911, April, free engine model, mileage 1,855, new Dunlops and belt recently fitted, good appearance, very powerful, guaranteed perfect throughout, spares: £40; approval.—68a, Regent St., Leamington.

TRIUMPHS, 1910 T.T. roadster, all racing equipment, Triumph-Gradua, Millford sidecar, both recently overhauled (Triumphs), perfect order; genuine bargains.—Details, Box 512, *The Motor Cycle* Offices, Coventry.

1911 Model de Luxe Rex, 5h.p. twin, free engine, 2-speed, perfect sidecar machine, practically new, only ridden a few hundred miles; too powerful for owner; cost £63, sacrifice £42.—54, Lozells Rd., Birmingham.

TRIUMPHS.—Five good second-hand Triumphs, also one 1911 unused, one free engine, and one 1912, one standard, all ready for immediate sale, from £25.—Call or write, Colmore Depot, 49, John Bright St., Birmingham.

SECOND-HAND 3½h.p. Machines, in good condition: Humber, Premier, Arial, Bradbury, Zenith, Macbeth-Armstrong (3-speed); one of each of these in stock, ready, inspection requested; prices from £25; all good machines.—Colmore Depot, 49, John Bright St., Birmingham.

SECOND-HAND Big Twins for Sidecars, all very powerful machines: Vindec, Scott, Chater-Lea, N.S.U., Rex; one of each of these for sale, some ready, some being overhauled; call and select one.—Colmore Depot, 49, John Bright St., Birmingham.

SECOND-HAND Lightweights, the handy and economical type of mounts, in stock, some 1910 and 1911 Douglas machines, also a 2¼h.p. Enfield, 2¾h.p. Enfield, a Moto-Reve, and a Motosacoche; price £16 to £30.—Colmore Depot, 49, John Bright St., Birmingham.

SCOTT, 1910, 3h.p., price £36; or with sidecar £39.—Colmore Depot, 49, John Bright St., Birmingham.

F.N., two, special, 4-cyl., shaft-driven, the F.N. special, smooth running machines, 5h.p., solo or sidecar. — Colmore Depot, 49, John Bright St., Birmingham.

WOODGATE, for immediate delivery of all models of Singers, Triumphs, Enfields, Rudges, and Ariels, and Canodet and J.J.W. sidecars; also for a splendid range of second-hands, varying from £5 to £45. Get my prices and save money; exchanges and payments arranged. — J. J. Woodgate, the Motor Cycle Depot, Small Heath, Birmingham. 'Phone: 372 Victoria.

SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

CHIEF Triumph Agents for Cambridge (early deliveries), King and Harper, Cambridge.

1909 Triumph, in real good order, all spares; £24.—37, Searle St., Cambridge.

ALLDAYS Motor Cycle, 2¾h.p., carrier, etc., not heavy; cash only, £5.—Bailey, jeweller, Soham.

TRIUMPH, 3½h.p., 1910 free engine, very fine condition, flexible engine; £35. — Bailey, jeweller, Soham.

BRADBURY, 1911, standard, just through from works, plate, enamel unscratched; £35.—Bailey, jeweller, Soham.

BRADBURY, 1912, free engine, slightly soiled; cash only, £50, no offers.—Bailey, jeweller, Soham.

1911 3½h.p. Premier, delivered June, excellent condition, very little used; £35.—Bird, Harrold, Beds.

TRIUMPH, F.E., in stock, also 2-speed B.S.A.'s, 2-speed Humbers, Bradburys, etc.—Lambert, Thetford.

1911 T.T. Triumph Roadster, condition equal to new, Dunlops, horn, mirror, spare valve; £43.—Parker and Son.

1911 F.E. Quadrant and Sidecar, shop-soiled; absolute bargain, £53.—Parker and Son, St. Ives, Hunts.

LADY'S Royal Enfield, 1912; £45; owner getting higher powered machine.—Ackroyd, Pemberley Av., Bedford.

NEW Hudsons; delivery from stock.—Sole agents for Suffolk, T. H. Nice and Co., Bury St. Edmund's, and Ipswich.

PREMIERS, all models; delivery from stock.—Suffolk agents, T. H. Nice and Co., Bury St. Edmund's, and Ipswich.

TRIUMPHS, Humber, Bradbury, B.S.A., Rudge, new and second-hand, also sidecars.—T. H. Nice and Co., Bury St. Edmund's, and Ipswich.

TRIUMPH, 1912, clutch model, scarcely soiled, Garner whistle, etc.; £50, no offers. — Stevens, Lopham, Thetford.

MINERVA, 2¾h.p., magneto, spring forks, Amac, adjustable pulley, Brooks saddle; £12/10.—B. Jones, Downham, Norfolk.

LATE 1910 8h.p. Twin Bat-Jap, free engine, Dunlop tyres almost new, engine is perfect; £34. — 3a, Bridge St., Cambridge.

THE MOTOR CYCLE

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Colonial and Foreign Agents.—United States: The International News Agency, New York. Paris: Smith's English Library, 248, Rue Rivoli. Australia: Gordon and Gotch, Ltd.; Melbourne (Victoria), Sydney (N.S.W.), Brisbane (Queensland), Adelaide (S.A.), Perth (W.A.), and Launceston (Tasmania). New Zealand: Gordon and Gotch, Ltd.; Wellington, Auckland, Christchurch, and Dunedin. Canada: Gordon and Gotch, Ltd., 132, Bay Street, Toronto. South Africa: Central News Agency, Ltd.

ADDRESS: 20, TUDOR STREET, LONDON, E.C.

Should Ladies be Allowed to Race?

RECENT events have helped to strengthen an opinion we had formed that racing uphill and round corners at breakneck speed is not a pastime recommended for a lady. The straightforward reliability trial with an occasional steep hill included certainly must appeal to the sporting type of lady motor cyclist, and further one cannot but admire the pluck and courage of a lady who is willing, nay anxious, to try her prowess in a speed event, but many, we fear, are little aware of the risks they run, and how near on several occasions they have been to a severe accident. We will ignore for the moment the question of whether it is becoming or not for a lady to be spread-eagled on a speed machine of any kind. Fortunately, we shall not be excluding a large section in pleading that ladies be henceforth debarred from speed events, and we do so in the best interests of the sport and pastime. When one thinks the matter over, should the governing body be agreeable to adopt our recommendation, it would not be taking the lead but merely following the example of the parent body, the Royal Automobile Club, and also of the Brooklands Automobile Racing Club. The average lady is not possessed of the self-restraint, or presence of mind, which a man can command, and we know we have many supporters in recommending that ladies be discouraged from taking part in speed events. Pondering over this year's events alone, we can recollect having seen three ladies experience severe falls, and a case of another accident this month has come to our ears. Instead of benefiting the pastime this sort of thing is proving a serious deterrent to converts, and the sooner our recommendation is adopted the better for all concerned. The ban is not intended to discourage the use of the motor cycle among ladies for touring purposes; on the contrary, more converts might result so soon as the frequent reports of accidents cease.

Holiday Rides.

IF the weather be propitious there will be a very large increase in the number of motor cyclists on the road this Whitsun holiday, and a big proportion of them will be first year riders. The increased traffic on main roads, and particularly in the neighbourhood of populous centres, renders it necessary to impress on all motor cyclists the desirability of exercising caution, particularly at cross-roads and corners. We say *all* motor cyclists, because the most experienced rider is not proof against accident when he is using the same roads as the novice, who, unaccustomed to the speed of a motor cycle, and not knowing the rules of the road so well, may issue from a by-road at a dangerous pace, and the expert rider, unless he be reasonably cautious at crossings, may find himself the victim of an accident through no fault of his own. It should be made illegal to enter a main road from a by-road except at a crawl, and although it is sometimes difficult to differentiate between main and other roads, the trunk route is usually fairly apparent. There is, however, little or nothing to fear if reasonable care be exercised.

Novices should ascertain before starting on a lengthy ride that every detail of the machine is in perfect order, and take care they are properly clothed. The season is a changeable one, and chills are easily caught. Goggles, too, are absolutely necessary to protect the eyesight.

Hill-climbing Formulæ, Old and New.

$\frac{C \times T^2}{W}$ recommended by "The Motor Cycle."

YEARS ago, when the speed of motor cycles was much less than it is at present, the A.C.U. formula $\frac{W}{C \times t}$ gave a fairly approximate result. We say "fairly" advisedly, because a formula which assumes that if the weight of a machine and rider is halved, the time is also halved, or that the speed can be doubled by doubling the horse-power, can never be more than approximate; but when the speeds were low in comparison with what they are to-day, and wind resistance had not so great an effect in consequence of these lower speeds, then the A.C.U. formula was sufficient. Nowadays, however, when speeds are high and wind resistance plays an important part, riders have discovered the weakness of the A.C.U. formula and the advantage of carrying extra weight, and often the fastest performance comes out low on formula. Hence the need of a revised formula to meet the newer conditions that at present obtain.

Points to be Considered.

If the weight lifted in climbing the hill were all that had to be considered it would be reasonable to include t in the formula, and the same applies to road resistance, which varies as the weight, but air resistance varies as the square of the velocity, and the horse-power required to overcome this varies as the cube of the velocity; hence we recommend the inclusion of t^2 (time squared) as a simple means of striking a fair average. The inclusion of t and t^3 is perhaps more scientific, but more complicated, and we showed last autumn, when discussing this question, that the formula which we recommended, and which was used by the Streatham and District M.C.C. at its hill-climb at Brasted about a fortnight later (the first time, we believe, that this formula was used for a British hill-climb), gave results which differed only infinitesimally from the more complicated formula, containing both powers of t, suggested by a correspondent. The formula recommended by this journal has since been used in a number of important hill-climbing competitions, and is likely to come into general favour.

Other Alternatives.

Some clubs, especially those in Scotland, prefer to use $t^{1.5}$ or $t^{1.3}$, but these values are not only much more difficult to calculate, but, in our opinion, the results are not so satisfactory. This opinion is corroborated by the fact that a competitor in a recent hill-climb where $t^{1.5}$ was used considered it advisable to attach 50 lbs. of lead to his crank case with the object of coming out well on formula. He overdid it, however, and failed on the hill, so his case does not point the argument as well as it might. To prevent the addition of extra weight one club (again the Streatham and District) has fixed weight limits in the various classes, and allows no credit for weight carried beyond that amount, though it does not disqualify machines that exceed this weight limit. This is another excellent plan, but we think that it makes a mistake in fixing the lightweight c.c. limit at 340, seeing that 350 c.c. is the Tourist Trophy limit as well as the Class B limit at Brooklands, and that the 340 c.c. limit excludes one or two well-known machines (among others the Royal Enfield, the new T.T. Douglas, and the Forward).

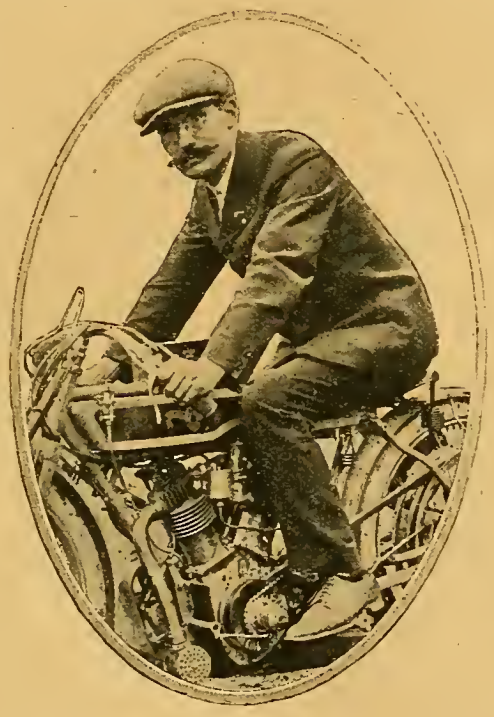


The sort of trick hill-climb the Motor Cycle Manufacturers' Union is objecting to. The event took place on Roper's Hill, Redmires, and was organised by a new Sheffield organisation, viz., the Sheffield University M.C.C. The motor cyclist in the act of falling is H. Hart-Davies (twin Rex).

My Most exciting Ride: No. 1. HARRY A. COLLIER.

Interrogated by L.C.

WHEN I interrogated the elder of the famous brothers, who are perhaps the best known motor cyclists in the world, he began to meditate, and gave me some interesting motor cycle history before he arrived at that event which provided the most exciting ride he had undertaken. The Colliers are essentially careful riders, and the fewness of their mishaps bears testimony to this. Harry Collier's first machine was a De Dion "quad," which he rode in 1899, and it was not until four years later that he began competitive riding. The eliminating trials for the International Race of 1905 saw him placed second, but still his riding was singularly uneventful. In 1906, however, he had an experience which he reflects upon with thankfulness for his immunity from an accident. After being chosen to represent England for the international race in Austria, he journeyed across to Patzau, where the big race was to begin. The course was over a road which had been primarily designed for oxen, and on the one side was a steep precipice, except for an interval of some miles, when the road ran along the side of a big lake. On the other side, the road was bounded, not by the grass mounds to which English riders are accustomed, but by huge stone boulders, while the road itself was terrible, both in its tortuous descents and in its irregular surface.



During the race, Harry Collier went all out, passing competitors time after time, and keeping to the road by the greatest efforts. All through his nerves were at a tension to which they were entirely unaccustomed, and when he did eventually finish, his first impression was one of relief at having come safely through the ordeal. He occupied third place. One unfortunate competitor hit the rocky side of the road and fell into the lake, breaking both legs and being nearly drowned, while others had accidents which Collier was thankful not to have heard about until he was through with the race. Collier has had some exciting times on road and track in so far as the striving for premier position has been concerned, but he reckons all his rides as child's play compared with that terrible race in Austria.

"What about the Tourist Trophy Races?" I remarked, thinking to recall experiences which had befallen him in Mona.

"I haven't had any excitement over there," said he, "other than the natural excitement of preparing for the event, for on each and every occasion I have started out with the idea of riding as carefully as possible, and consequently it has been nothing more than a somewhat monotonous run round the course at high speed. Charlie and I have always done well over there, but we have done it without excitement or untoward incident. No, the Austrian International Race was the most exciting event I have ever competed in, and I don't want to come across such another test of nerves. Of course, a motor cyclist cannot afford to be on speaking terms with 'nerves,' but on such an occasion as that, where it was a case of being between the boulders and the precipice, one is in a high state of excitement the whole time, especially when the course is unfamiliar."



Opening meeting of the Dutch Motor Cycle Club. Members to the number of forty journeyed from all parts of Holland to Het Loo, the summer residence of H.M. Queen Wilhelmina.

Occasional Comments by "Ixion"



Stripped Threads on Gear Controls.

I should advise all users of multi-speed hubs to keep a very wary eye on the details coupling their control rods to the gear and clutch mechanism protruding from their hubs. Very heavy strains are thrown on these details, and in several instances the screw threads, and indeed the parts generally, are far from being up to their work. When a low gear is in operation the thrust strains and the vibration at these points are often excessive, and heavier fittings are urgently required.

Decompressors.

Why have we heard so little of the new decompressors, which represent an even greater aid to starting than the free engine? Nearly a year has passed since I handled my first sample. It enabled a weakling to walk off a 200 lb. machine at about three miles an hour with a cold and gummy engine, and I thought the standardisation of the device would come immediately, and enormously popularise motor cycles among the non-athletic type of potential rider. One of my chief difficulties in making converts to the sport is the starting trouble, which disappears after a little practice, but is certainly formidable to a nervous novice; but the jumpiest tyro can step courageously on to the footrest of a machine which is just breathing quietly along at three miles an hour. It is much simpler than letting in a clutch with a nervous toe poised on a 5in. pedal of rather crude leverage. I had the opportunity of getting a decompressor fitted to my own 1912 machine, but I refused, as I want the machine for reliability trials, and the makers' slowness in standardising a device of such obvious selling attraction seemed to point to some defect in its present form. I sincerely hope that only the workshop difficulties of modifying engine design were responsible, but I advise my readers to watch the decompressor; it renders the starting of a heavy motor bicycle as easy as the starting of a push bicycle, and engine makers must be blind if they do not see that the decompressor is the most powerful selling factor on which they can concentrate attention.

A Warning to the "Knuts."

The desire for pre-eminence takes strange forms. A century ago periwigs, powder, patches, snuff, primrose waistcoats, and duelling were the rage, and Bath was the hub of the universe. To-day, amongst quite a large section of our juvenile male population, Brooklands is the axis of the universe, and not to have an open exhaust, dropped handle-bars, overhead valves, bread-trencher pulley, and gnome-like headdress is to be a back number.

Speed has its usefulness, but the genuine speed merchant is born not made, and the born racing man runs risks that are not enviable, witness the sad death of Arthur Moorhouse and the closing chapter of poor de Rosier's racing career. A good many of our younger riders appear to take it for granted that men of every temperament and mentality can freely indulge in speed on road and track without prolonged previous experience at a moderate pace, whereas many of these dashing riders cannot be trusted to pull up without capsizing if their front tyre burst at a mere 40 m.p.h. Recent events have clearly proved the risks latent in high-speed work even for men of unique skill and considerable experience; and the comparative novice who opens out his new machine to 65 m.p.h. within a week or two of delivery is nothing more or less than a crazy young fool.

Saddle Design.

I have been using a new and very comfortable saddle during the last few months which relies almost exclusively upon front-hinging, so that there is a huge amount of up-and-down movement at its tail. There is no disputing the comfort thus attained, but the design necessitates a high adjustment of the pillar, otherwise the tail of the saddle hits the mudguard or carrier whenever a real bump is crossed, and consequently the saddle design nullifies all the frame-builder's efforts in quest of a low sitting position. Unfortunately for me the front brake connections and steering stem of my new machine are too short for me to obtain a position in which the saddle does not hit the mudguard, as if I raise the saddle I have to leave the handle-bar in a position where it fouls my knees when turning corners.

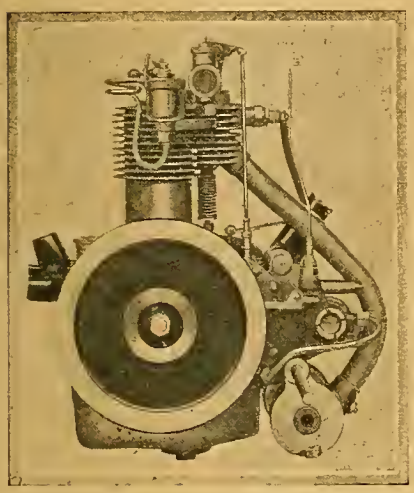
Wanted, some Real Hills.

Ever since I took delivery of a three-speeded 3½ h.p. I have been looking for a hill which could extend the machine on bottom gear. The report of the Coventry and Warwickshire M.C.'s one day trial put me on a new scent, and off I went to investigate, only to meet with disappointment. Provided one was willing to negotiate sharp bends with the machine leaning well over, there was not a hill on this much-belauded course which a well-tuned 3½ h.p. could not tackle on a 5¼ to 1 gear on dry roads; and if one funked the corners and dropped into the third ratio, the merest trifle of throttle opening ensured a safe and comfortable ascent. Sudeley, Saintbury, Birdlip, and Sunrising are easy climbs in dry weather for a single-geared 3½ h.p. with adjustable pulley, and I suppose I must wait for the freak 1 in 3 hairpins to grow anxious on the bottom gear of a three-speed hub.

My experience is that in solo work with a 7 or 8 to 1 gear on a 3½ h.p. the most freakish climbs are straightforward work, provided the rider can remain in the saddle at all, and provided he does not muddle the mixture of a sensitive carburetter when he drops the valve after rounding an acute bend. Hills like Farlow, Tornapress, and both sides of Amulree are rather exercises in steering and carburetter control than tests of engine power, now that variable gears have touched their present standard of evolution

A RUN ON THE VELOCE.

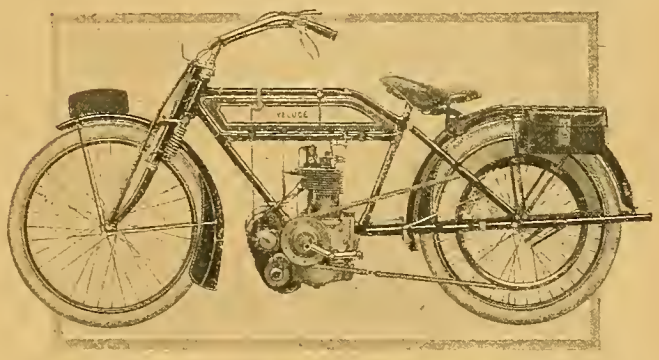
ON a recent visit to Birmingham we accepted an invitation of the Veloce Co. to sample the running of one of their 2½ h.p. machines. The day was not auspicious, for all the morning it poured with rain, and in the afternoon dried up just enough to give the tramlines and setts a treacherous coating of grease. However, the low build and light weight of the machine emboldened us to make a start, so the low gear was engaged and the machine given a push, whereupon the engine started to fire slowly, so slowly, in fact, that we were able to depress the gear pedal to the free engine position with great ease and then mount the machine in comfort and tuck in coat tails, etc., before engaging the clutch. The gears are operated by a rocking pedal with the left foot, pressure backwards engaging the low ratio, and forwards the high.



2½ h.p. Veloce engine, showing mechanical lubricator and oil pump under crank case, also outside flywheel and overhead inlet valve arrangement.

The Low Gear Seldom Needed.

On letting in the low gear the machine slid gently away, and after slight acceleration in went the high without a suspicion of jerk. As far as power was concerned the low gear need never have been used, but we found it a great blessing in the thick traffic and on the greasy roads. A slight sing in the gears was noticeable but not unpleasant, whilst the exhaust and the valve timing gear are beautifully quiet. Through seas of mud we churned our way all morning, and though the particular machine lent us was fitted up in T.T. style with only regulation width guards they were so well arranged that the mud thrown up was not excessive. In the afternoon we had a practical demonstration of the advantages of forced lubrication, for on slippery roads in thick traffic one is relieved of all trouble in this direction by an occasional glance at the indicator. We noticed two points in particular, one was that the outside flywheel permitted the engine to run very slowly, and although it revolves in a contrary direction to the road wheels the effect is not noticeable; in fact, the machine is very steady in grease. Secondly, that throughout the heavy rain there was no suspicion of belt slip, which may be accounted for by the large geared-down engine pulley. The gear ratios used were 5½ to 1 and 9½ to 1 approximately.



The complete machine. The large diameter geared down engine pulley will be noticed.

The Works Organisation.

On returning to the works Mr. Taylor showed us round, and we were delighted with the jigs and tools in use and the careful way in which the parts are turned out. For the present year the 70 × 76 mm. engine only will be manufactured, but it is possible that a larger model also will be marketed in 1913. Before leaving the works in Clissold Place we were introduced to Mr. Nat Woods, of Christchurch, New Zealand, who had just placed a considerable order for motor cycles with Veloce, Ltd.

BROOKLANDS WHIT-MONDAY MEETING.

Entries for the motor cycle races are as under:

2.20 P.M.—THE EIGHTH SHORT MOTOR CYCLE RACE (A HANDICAP).

E. F. Remington (Matchless)	W. Stanhope-Spencer (Rudge)
M. Campbell (Triumph)	H. Jepson (Zenith)
Captain P. Y. Harkness (Triumph)	R. L. Printz (Bat)
N. A. Ayres (Singer)	Paul Schmidt (N.S.U.)
G. E. Stanley (Singer)	A. G. Fenn (Humber)
E. A. W. Davis (Triumph)	E. Kickham (Douglas)
S. C. Winfield-Smith (Singer)	S. R. Axford (Martin)
S. L. Bailey (Humber)	D. Lavender (Triumph)
F. G. Edmond (Humber)	P. Weatherilt (Zenith)
W. G. Fowler (Rudge)	F. W. Barnes (Zenith)
J. A. Manners-Smith (Triumph)	Howard Smith (Triumph)
W. Dewar (Triumph)	S. M. Friedlander (Calthorpe)
W. H. Elce (Rudge)	R. Barclay (Rudge)
	M. L. Ainslie (Zenith)
	A. G. Walker (Rudge)

3.20 P.M.—THE SEVENTH LONG MOTOR CYCLE RACE (A HANDICAP).

E. F. Remington (Matchless)	W. H. Elce (Rudge)
M. Campbell (Triumph)	W. Stanhope-Spencer (Rudge)
N. A. Ayres (Singer)	H. Jepson (Zenith)
Capt. P. Y. Harkness (Triumph)	R. L. Printz (Bat)
G. E. Stanley (Singer)	Paul Schmidt (N.S.U.)
E. A. W. Davis (Triumph)	A. G. Fenn (Humber)
S. C. Winfield-Smith (Singer)	E. Kickham (Douglas)
S. L. Bailey (Humber)	S. R. Axford (Martin)
F. G. Edmond (Humber)	D. Lavender (Triumph)
W. G. Fowler (Rudge)	P. Weatherilt (Zenith)
J. A. Manners-Smith (Triumph)	F. W. Barnes (Zenith)
W. Dewar (Triumph)	Howard Smith (Triumph)
	S. M. Friedlander (Calthorpe)

Racing commences at 2 p.m., and in addition to car events, there is an aeroplane handicap.

AMONG THE ACCESSORIES.

Novel Spare Parts Case.

Quite a novelty is a new spare parts case which we illustrate. It has been brought out by A. W. Gamage, Ltd., of Holborn, and is shown fitted with the various items which a sidecarist would find useful on a long tour. It is intended



A sidecar spare parts case.

to be placed under the cushion of the sidecar seat. In it will be seen almost everything a sidecarist could possibly require, such as spare belt, Bosch magneto spares, Tinol outfit, high tension wire, belt cutter, tyre repair outfit, Philcut, spanners, exhaust spring compressor, spare exhaust valve spring, spare sparking plug, B. and B. jets. This method of carrying spare parts strikes us as a particularly happy one and likely to appeal to all sidecarists.

A Magnetic Speedometer.

The Stewart speedometer works on quite a different principle from that to which the average motor cyclist is accustomed. The principle of its working is magnetic, and the accompanying sketches illustrate clearly the method employed and its construction. In fig. 2, the hollow cup A fits into the groove between the magnet E and the outer shell C. On the underside of this shell a bevel is cut, meshing with the driving bevel driven by the flexible shaft. On the spindle, attached to the cup A, the

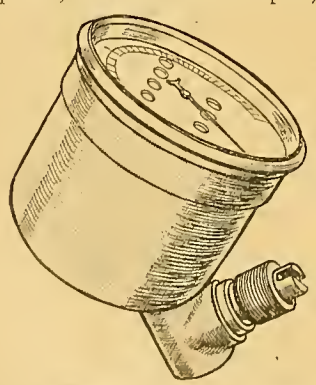


Fig. 1.—Indicating dial of Stewart speedometer.

pointer is carried. There is no mechanical connection between the cup and the magnet. On the movement of the rotor, as the whole of the revolving portion of

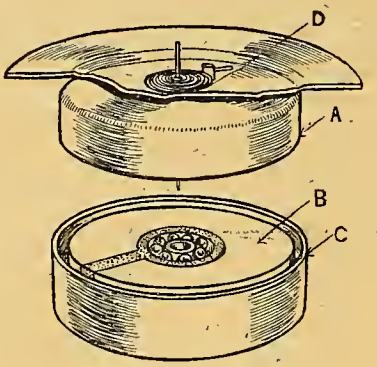


Fig. 2.—The cup and rotor.

which B and C are composed is called, eddying currents are set up, which cut the cup at its greatest diameter, while lines of force emanating from the magneto cut the cup directly over it. The tendency to revolve is resisted by the spring D, and is exactly proportionate to the speed at which the rotor turns. The only objection to this form of speedometer is that it is affected by the weather and temperature, and to overcome this difficulty an ingenious compensating device, illustrated in fig. 3, has been devised. It consists, as will be seen, of two bars of steel connected by a scissors joint at one end. As the long arm is extended owing to a rise in temperature, it raises the jewel bearing in which the cup revolves above the

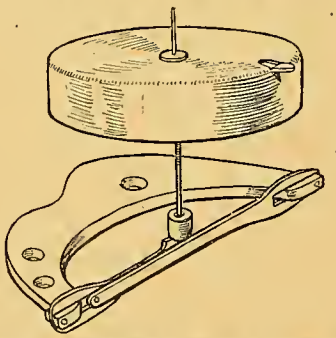


Fig. 3.—Compensating device for variations in temperature.

magnet, and consequently less force is exerted by the magnet upon the cup. The speedometer is very well made, and is of exceptionally simple construction. The method of transmission off either the front or rear wheel is by means of ordinary spur gearing. The reducing gear inside the swivel joint is by means of a worm, and gives a reduction of sixty per cent. This is a most important feature, as the rotor has only to revolve at about a quarter the speed of the mechanism of a speedometer working on the centrifugal principle. All the bevels and worm gears employed are particularly carefully cut. On the face of the instrument is an ingeniously made worm-driven distance recorder and trip with instantaneous re-set. The particular model we have illustrated is designed to be driven off the back wheel, the flexible shaft running horizontally along the top of the tank. Other models are designed to be front wheel driven in the ordinary way. This instrument is the production of the Cooper-Stewart Engineering Co., Ltd., 11, Denmark Street, Charing Cross Road, W.C.

Clothing for Motor Cyclists.

The East London Rubber Co., Great Eastern Street, E.C., have recently largely extended their clothing department, and are now paying special attention to this branch of their business. A novelty is the new all weather suit made of black rubber sheeting and lined with beaverteen—its chief feature is its complete impermeability to wind and wet. Another suit, known as the Kerry, is not without interest. It is made of ordinary waterproof material, lined with beaverteen, is of pleasing appearance, well finished, and provided with Raglan shoulders, storm collar, wind cuffs, and dome buttons. The trouser overalls are particularly sensible. They efficiently protect the seat, are furnished with a flap in front secured by spring buttons, a belt to go round the waist, and snow boot fasteners for the legs. Another suit, known as the Ideal, has the coat fitted with an overflap, forming an efficient protection against driving rain. A speciality is also made of oilskin suits. Quite a novelty is the Kerry cap. One type, known as the Shackleton, looks like an ordinary smart looking golf cap, but inside is folded a neat fur-lined flap, which, when pulled down, adequately protects the ears and back of the neck. On the occasion of our visit we were shown a new sidecar apron, of greatly improved pattern, which effectually protects the passenger, keeps the sidecar dry, and buttons up tightly round the neck. Yet another novelty sold by the East London Rubber Company is a complete waterproof outfit for ladies, consisting of a coat and skirt. It should



The Kerry waterproof coat and skirt for lady motor cyclists and passengers in sidecars.



The Shackleton cap with invisible fur-lined flap.

be quite as suitable for riding a motor bicycle as for wear by a passenger in a sidecar.

Latest News from the Isle of Man.

PREPARATIONS FOR THE TOURIST TROPHY RACE.

THE visit of Mr. T. W. Loughborough, secretary of the Auto Cycle Union, to the Isle of Man, which was referred to in a previous issue, came to an end on Wednesday, 15th inst. Our representative met Mr. Loughborough at Euston, and from him gathered all there was to know. He expressed himself as being delighted with his reception, and mentioned that everyone took the greatest possible interest in the races and desired to render every assistance to make them as successful as in previous years. The course he reported to be in excellent condition, except on the mountain road, where the surface was rather loose, but repairs were in operation, and by the time of the race it would be in perfect order. Several road improvements are also being effected, notably at Quarter Bridge, where the road is to be widened, and near Greeba Castle, where the corners are being improved. The starting point will be moved a little farther north, owing to building operations having occupied the old site of the grand stand. Better arrangements will also be made as regards the flagging of the course. Mr. F. Straight, late secretary of the A.C.U., was in the Island with Mr. Loughborough, and on account of his previous experience was able to render his successor a considerable amount of assistance.



F. H. Southam starting io the Birmingham M.C.C. members' hill-climb at Highley Hill, between Bewdley and Bridgnorth.
(*Photograph by T. Blyth Clayton.*)

Final Arrangements Completed.

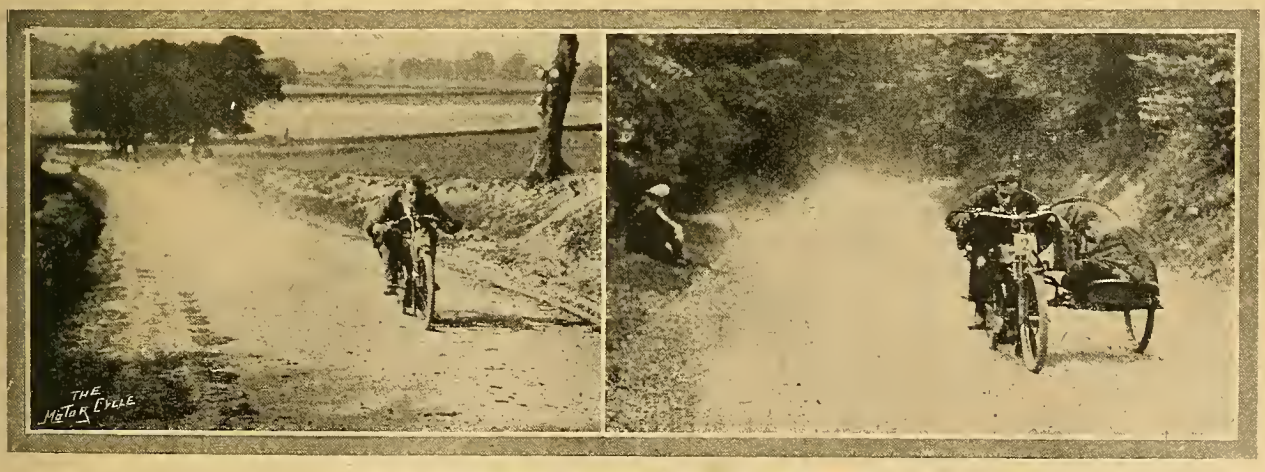
An important meeting was held at the Government Offices, at which Messrs. T. W. Loughborough, F. Straight, T. Sargeaunt (Government Secretary), C. T. C. Hughes-Games (chairman of the Highway Board), R. H. Cubbin (secretary of that body), and Colonel Madoc (Chief Constable) attended, when the final arrangements were completed. It was decided that no competitor would be allowed to use his machine on the course or any part of it after the hours of practice on any day, nor at any time on Sundays. Practising will only be allowed from Wednesday morning, 19th June, to Thursday, 27th June, from 5 a.m. to 7 a.m. A competitor must not leave Quarter Bridge after 6 a.m. During the whole of practice silencers must be fitted, but they are not compulsory in the race. Entries close on June 1st, and it is to be hoped that this classic event will receive the support it deserves. Everything points to the races being a complete success, and Mr. Loughborough, his co-workers, and the Isle of Man authorities will leave no stone unturned to render the two races as successful this year as they have been in the past.

Brief Details of Races.

JUNIOR T.T. RACE.—Friday, June 28th; distance, 150 miles; cylinder capacity limit, 350 c.c.

SENIOR T.T. RACE.—Monday, July 1st; distance, 187½ miles; cylinder capacity limit, 500 c.c.

Entries should be forwarded to the Auto Cycle Union, 89, Pall Mall, S.W.



M.C.C. MEMBERS' HILL-CLIMB ON THE CHILTERNS.
(1) H. E. Davison (Kerry-Abingdon) going well. (2) F. J. Watson (3½ h.p. Swift) making a good climb—this machine had a single gear of 5½ to 1.

Questions & Replies.



A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Newport to Brighton.

Will you be so good as to direct me the best way from Newport, Mon., to Brighton, and also give the distance? My machine is a 3½ h.p. Triumph with sidecar.—B.J.J.

Your best route would be as follows: Newport, Severn Tunnel Junction, by train to Pilning, and through Patchway, Mangotsfield, Bath, Beckington, Warminster, Heytesbury, Salisbury, Totten, Southampton, Fareham, Havant, Chichester, Arundel, Worthing, by the old road through Shoreham to Brighton. Be careful of police traps in the neighbourhood of Arundel. The distance is about 170 miles.

Cost of Running—Single and Twin.

I am using a 3½ h.p. Humber, and intend getting a 6 h.p. Matchless for occasional sidecar work. Please say if the cost of running a two-cylinder Matchless without the car would be more than that of running my Humber. Is the two-cylinder more apt to break down than the single-cylinder?—A.B.

The cost of running a twin-cylinder machine, with or without a sidecar, would be slightly more than that of running a 3½ h.p. The twin-cylinder and sidecar is not more likely to break down than a single-cylinder, but it requires rather more attention to keep in order.

Decompressors.

(1.) What is a decompressor? (2.) What does it do? (3.) What is the difference in a coil sparking plug and a magneto sparking plug?—T.S.P.

(1 and 2.) There are several forms of decompressor—their object being to allow a certain amount of the compressed charge to escape so as to render the engine easier to turn for starting purposes. This is commonly brought about by a cam (which can be brought into action when required) which slightly raises the exhaust valve during part of the compression stroke. A decompressor is not to be confused with an exhaust valve lifter, which, though it serves much the same purpose, keeps the exhaust valve raised till loosed by hand. (3.) There is practically no difference between plugs made for battery and coil or magneto ignition. We have used both indiscriminately; as a matter of fact there are very few plugs made now for battery ignition on motor cycles.

Intermittent Running.

I should feel grateful to you if you could explain the extraordinary behaviour of my 3½ h.p. Triumph. It has, during the last fortnight, begun to slow after running about three miles, and the speed has only been kept up by closing the extra air and giving more petrol until the throttle is about threeqnarters open and extra air closed completely. Then the machine will go for a little and eventually come to a stop, but will start again in half a minute or so, and then will go again for about three miles when the same symptoms develop. I cannot account for this at all, as the cylinder is quite free from carbon deposit (I am using Price's Motorine A), compression good, the magneto clean, and points set to gauge.—A.F.

The symptoms are probably due to a partially choked jet, which occasionally clears itself and then gets blocked up again, or to a stoppage in the petrol pipe, which allows the petrol to flow through but not fast enough to supply the needs of the engine. The float chamber would have time to fill up during your stops and so the engine would start again.

Wem (Salop) to London.

I shall be much obliged if you will inform me the best route from Wem (near Shrewsbury) to Clapham, S.W., avoiding the worst hills, as my machine is only 2½ h.p.—S.A.

Your best route would be as follows: Wem, Wellington, by Watling Street to Atherstone, following the R.A.C. signposts to London, going through Daventry, Towcester, Weedon, Fenny Stratford, Dunstable, St. Albans, Barnet, Regents Park, London. Your best way to Clapham is over Westminster Bridge, down Westminster Bridge Road, Kennington Road; at the end of this turn right and you are in the Clapham Road. There is much traffic and many tramlines after crossing Westminster Bridge.



A FRENCH TANDEM.

The tandem form of motor cycle is seldom seen in this country. In France it is more numerous. The Rene Gillett tandem illustrated was noticed among the competitors' machines at the Circuit de l'Eure race.

Police Traps on the Great North Road.

[?] I propose going from London to Aberford (Great North Road), and then across country to Ulverston *via* Ilkley and Kirkby Lonsdale. Can you tell me where I am likely to encounter the police on this route, and whether you think it possible for a fairly new rider to manage the journey in one day, starting from home at about 5 a.m.?—C.E.H.

With regard to the Great North Road, most of the villages in Huntingdonshire are trapped. There is a trap working four miles north and four miles south of Grantham, between Ponton and Colsterworth at the south and from the bottom of Gonerby Hill to Long Bennington on the north. The police do not prosecute if you do not exceed 25 m.p.h. These, with Retford, are the only likely traps on the North Road. With the exception of the two Grantham traps the open country is quite free. If your machine is running very well, you could manage the journey in the day if you started at 5 a.m.

Accident caused by Cricket Ball.

[?] Recently I was the victim of a somewhat unusual mishap. Opposite my house is a meadow used as a cricket ground by a large local school "for the sons of gentlemen." The match pitch is in the centre, but as the field is not wide enough balls are constantly driven over the road into the opposite property. When practising they play on the edge and bowl towards the public road, and as they seldom put up the nets nearly all balls missed come across the road, as hedge and fence are "thin." During previous seasons damage has constantly been done to gardens, windows, and things inside rooms, and several people have been hit and injured, but damage has always been made good. One evening recently, as I was riding at about 15 m.p.h., a ball came across the road right under my front wheel, bringing me down. I suffered several painful cuts and bruises, besides considerably tearing my overalls and clothes. Lamp and horn were smashed and machine itself considerably damaged, and engine injured, necessitating partial taking down. The master in charge referred me to the headmaster. When I called on him later he expressed regret. After some talk and putting the facts before him, he thought, perhaps, he was morally responsible, but had doubts about being legally so. However, he promised if I took machine to my repairer he would pay his bill up to £1. Now I find no one will take on the job under these conditions. I should be glad to know: (1.) If I have a reasonable claim for damages? (2.) If so, the best way to get it made good? I propose to hand him the repairer's estimate and ask him to settle with me personally at once.—S.R.

Our legal adviser writes as follows: "It is certainly a rather difficult case to answer. There is, of course, no doubt that if 'S.R.' is able to ascertain the particular boy who caused the ball to fly across the road, he could sue him for the damage sustained. His father would not be liable, but as the scholars are stated to be 'sons of gentlemen,' perhaps the money would be obtained. As regards the headmaster, I think there would be some difficulty in making him liable. Apparently, the field is a suitable one to be used as a cricket field, except for the proximity of the road, but the letter states that the master has provided nets, although these are seldom put up. I think that the headmaster might be held liable if it can be shown that he knew the field was being used on this occasion without the nets being put up, or if it can be shown that it is customary to allow the field to be so used without the nets. In addition, 'S.R.' would have to show that the headmaster allowed the boys to play near the boundary of the field and to bowl towards the public road. I see that your correspondent states that damage has been made good in previous cases. Has this been paid by the master or the boys? If the former, all the better. Your correspondent would be quite right in getting an estimate and letting the headmaster know the amount, and he had better consult a solicitor and get him to press for payment, if the headmaster refuses to settle with 'S.R.' personally."

Cambridge to Marlborough.

[?] (1.) I have a 1912 Triumph and am thinking of getting a sidecar. I do not intend it for touring, but only for short pleasure journeys. Do you think the 3½ h.p. will take one satisfactorily? (2.) Also could you give me the best route from Little Shelford to Marlborough, Wiltshire, and to avoid any bad hills?—W.W.S.

(1.) The machine would take a sidecar fairly well in not very hilly country. (2.) Your best route would be as follows: Little Shelford, Royston, Baldock, Hitchin, Luton, Dunstable, Tring, Chesham, Amersham, High Wycombe, Great Marlow, Henley, Reading, Hungerford, to Marlborough. This is rather hilly, but it is absolutely the best road. If you want to avoid the hills you must go through St. Albans, Watford, Rickmansworth, Uxbridge to Colnbrook, where you join the Bath Road, then go on through Reading. The latter route takes you through many suburbs with ten-mile limits, whereas the former takes you through exceedingly pretty country and over fairly good roads.

READER'S REPLY.

Sir,—Just a word of warning with reference to the best road to Cromer from the East Midlands. I rode from Spalding to Cromer through Long Sutton and Holbeach last Easter (the road you recommended) and back again, and on each occasion got a puncture (nail), once between Long Sutton and Holbeach, and once between Sutton and Lynn. The road runs near the railway, and the heavy carts that pass seem to drop nails. The best road, in my opinion, is through Mildenhall, Royston, Newmarket, and Fakenham, to Cromer. I am here speaking of road surface; no doubt the Holbeach Road is the more direct.—J. C. ALLEN.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

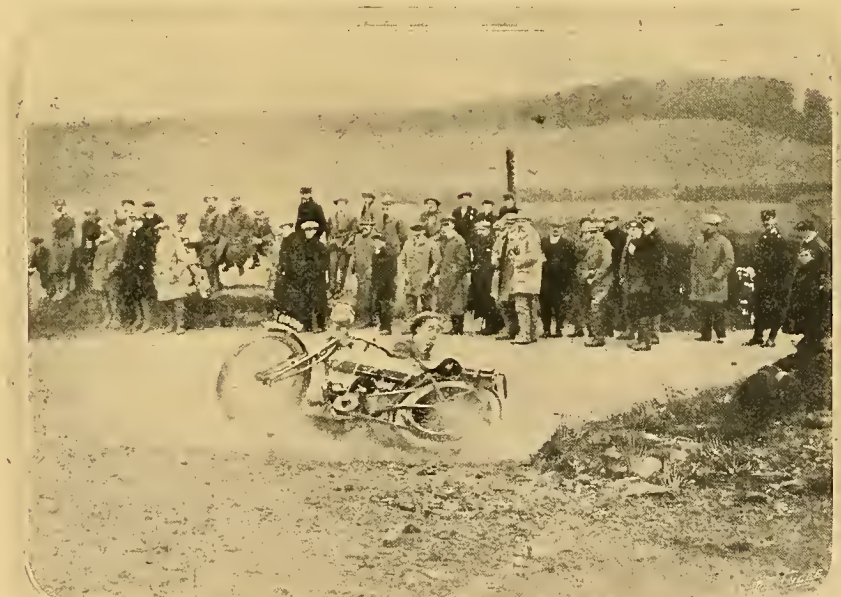
"E.J.W." (Ilford).—Wood-Milne steel-rubber tyres for 3½ h.p. machine.

"M.J." (Kensington).—5-6 h.p. four-cylinder F.N.

"F.E.A." (Askern).—6 h.p. Zenith and 6 h.p. Rex-Jap with sidecar.

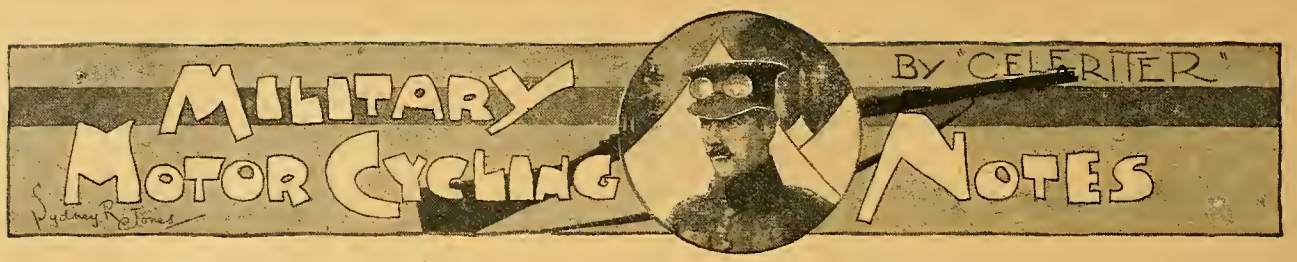
"T.A." (Peebles).—3 and 3½ h.p. Lincoln Elk.

"S.L.L." (Stonehouse).—Lomax non-skid band on back wheel used with sidecar.



THE OUTCRY AGAINST DANGEROUS HILLS.

Though it is not our usual practice to publish photographs of motor cyclists in the act of biting the dust, we do so in this instance in support of the manufacturers' outcry against the selection of unsuitable and dangerous hills for competition purposes. A rider who escapes from a fall such as the one illustrated must be regarded as extremely lucky.



The Army Manœuvres.

THIS year the grand autumn manœuvres are to take place in the vicinity of Cambridge and Thetford, and no fewer than eight battalions of Territorial cyclists are to be included amongst the combatants. Each of these battalions can boast of about a dozen motor cyclists at least, so that, apart from all staff orderlies and umpire's messengers, there should be about 100 combatant motor cyclists out on the warpath between September 15th and 20th. In addition to these there will be another twenty motor cyclists or so belonging to Divisional Royal Engineers, and about sixty more required for staff duties. Thus for the first time in English military history the motor cycle will be fairly represented at the manœuvres —truly a feather in the cap of the War Office.

Where the Motor Cycle Scores.

The motor cycle has many important advantages over the car from a military point of view, and these may be summarised as follows:

1. It moves more rapidly.
2. It can get along better on a road blocked with much traffic.
3. It does not congest traffic on a road.
4. It is easier to turn round and manipulate.
5. It is less visible, and can be hidden in a ditch
6. It consumes less petrol (which may be difficult to obtain).

All these points are matters of grave import from the military point of view, and it can be safely said that for all despatch work the motor cycle will utterly supersede the car in the course of the next year or two.

How to become a Military Motor Cyclist.

Those of my readers who feel a desire to take part in Army manœuvres in the future will naturally desire to learn how they can do so and what are the conditions of military service. At the present time there are only two ways of achieving the desired end The first way is to become a Territorial (if you are not one already) and join (or be transferred to) one of the fourteen Divisional Telegraph Companies R.E. Your obligations will be those of any other Territorial, and you will do all your soldiering on your own motor cycle. Whilst at annual camp or Army manœuvres you will draw the pay and allowances of your rank as a "sapper" plus 6s. 6d. a day petrol allowance and an annual grant of 30s. cycle allowance.

The second way is a trifle more complicated, but will appeal, perhaps, to more of my readers. First, you must join the Territorial Force as above, and then after completing your recruit's course, say after three months, you apply to be transferred to the Special Reserve Section B. Your obligations as to drill and musketry thus cease, and only two obligations remain to you:

(1) To come out each year for Army Manœuvres (pay and allowances as above).

(2) Or if the expeditionary force be sent abroad or mobilised at home, you are liable to be called upon to go with it as a motor cyclist.

You receive every year a retaining fee of £4, and in case of war your motor cycle will be taken over by the State at a valuation.

Within a few days yet a third door will be thrown open to motor cyclists.

The Cyclist Battalions.

There are fourteen cyclist battalions in the Territorial Army, each battalion consisting of 525 officers and men, all cyclists. A new regulation is in course of print which allows each battalion to enrol seventeen motor cyclists, including one officer, one sergeant, and one corporal. These whilst at camp, in addition to their ordinary pay and allowances, will draw petrol allowance at the rate of 7s. 6d. a day. The battalions are raised in the following districts:

London Cyclist Battalion.—Headquarters, Fulham House, S.W.
Kent Cyclist Battalion.—Headquarters, Tunbridge Wells.
Sussex Cyclist Battalion.—Headquarters, 8, Ship Street, Brighton.
Hants. Cyclist Battalion.—Headquarters, Southampton.
Devon Cyclist Battalion.—Headquarters. Exeter.
South Wales Cyclist Battalion.—Headquarters, Park Street. Cardiff.
Birmingham and Coventry.—Only just sanctioned.
Essex Cyclist Battalion.—Headquarters, Brentwood.
Suffolk Cyclist Battalion.—Headquarters, Ipswich.
Norfolk Cyclist Battalion.—Headquarters, Norwich.
E. Yorks Cyclist Battalion.—Headquarters, Hull.
Northern Cyclist Battalion.—Headquarters, Sunderland.
Lowland Cyclist Battalion.—Headquarters, Linlithgow.
Highland Cyclist Battalion.—Headquarters, Birnam, Perthshire.

The Legion of Cyclists.

In the meanwhile, all motor cyclists desirous of taking part in the military defence of this country, either now or in the event of invasion, are advised to join the Legion of Cyclists, which already numbers over 2,000 members.

APPLICATION FORM.

Full Name .....
Full Address .....
In which Group do you wish to serve—1, 2, or 3?.....
Age .....
H.P. of Machine .....
Previous Military Service, if any (Rank, Corps, duration) .....
Will you act as Local Organising Officer? .....

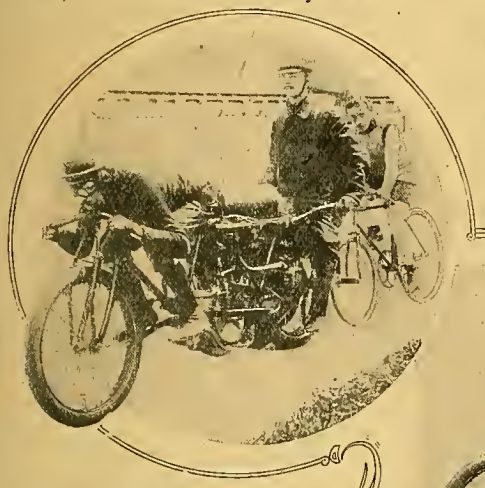
Oath: I, the undersigned, do sincerely promise and swear that I will bear true allegiance to His Majesty King George V., his heirs and successors, and that, in the event of a general mobilisation, I will take up arms and serve him, his heirs and successors, to defend the integrity of Great Britain against foreign invasion

Date ..... *191* .. *Signature* .....

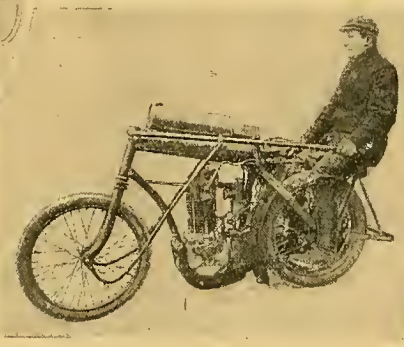
THE ART OF MOTOR PACING.

THE science of motor pacing, perfected by the continental riders, is practically unknown in this country, although we have many expert motor cyclists capable of holding their own in the best of company as regards racing and record breaking.

Therefore, in view of the fact that motor cycle paced events promise to figure to some extent in the sports programmes at home this summer, and as a result many motor cyclists will be making their *début* as pacemakers, the following hints, from the pen of a correspondent who has been closely connected with motor-paced racing abroad, will no doubt be appreciated.



STYLES OF PACING MOTOR CYCLES.
A German pacing machine which requires a man to steer and another to control the engine



The French style. The rider depicted is Franz Hoffmann.



An English pacing machine ridden by H. A. Cooper, who will pace H. H. Lee.

For all-round purposes a two-cylinder engine is to be preferred, the great secret being to have the motor running evenly, and it is absolutely necessary that the machine should start with the utmost ease. To obtain this result the carburetter and ignition should be most perfectly adjusted. It often happens that a two-cylinder will be firing without even a miss, yet it may be pulling irregularly, but this must be remedied, as if a motor is at all faulty in this respect it will "kill" the finest pace follower in the world. Ignition and lubrication are the principal causes of this fault. The timing of the two cylinders must be perfect, every part of the ignition must be spotless, and the oiling must be regular and given in small quantities, "little and often" being the motto. It is a decided advantage to have the spark advance fitted on the handle-bar, which for pacing purposes is considerably lengthened, so that the rider can sit well back and upright, and then it is not necessary to let go the bar when changes of speed are necessary. The method of fitting this by Bowden wires is very simple, and can be adopted with advantage.

Feet on the Ground.

The position of the saddle should be exceptionally low, so that either foot can be placed upon the ground, or if this be not possible a powerful brake should be fitted, but the combination of the two is preferable. The advantage gained by this is that the pacemaker when picking up his man is able to dash up at full speed, and suddenly slow up in a few yards, obtaining, if possible, the inside position so as to be able to get his man away first. A good "pick up" in a short distance race and half the battle is over, so it is advisable to practice this together in training. If it be possible to touch the ground with the feet as soon as the rider is "hooked on" the feet can still rest upon the ground for a time so as to steady the motor at this critical moment when the cyclist has quickly to work up his speed. The wind is one of the pacemaker's chief annoyances, as the speed of the machine has to be carefully regulated with and against the wind in order that the pace may be uniform the whole of the lap, and it is here that the handle-bar spark control comes in. In motor pacing machines, contrary to racing machines, weight is of little consideration; in fact, up to a certain point, the heavier the machine the smoother it runs.

When travelling at full speed the pacemaker, in the straights, should be able to watch his man by glancing over the right shoulder, and for this purpose again it is advisable to practise alone, as the natural tendency when looking behind is for the steering to follow the turn of the head—a point which can only be overcome by practice. The pacemaker should be able to converse with the rider, but on no account should the rider be allowed to converse much with the pacemaker except in brief, just giving instructions, such as "steady," "faster," "pass," etc. It is better to travel at a good even pace and go right through than to indulge in "gallery riding." All nuts and terminals should be secured by insulating tape. Every care and attention should be paid to details. Finally, there is the question of protection, which counts for so much, so after the regulations have been carefully considered, the resourceful pacemaker then sets to work to have himself and his machine equipped so as to shelter his man as much as possible as regards wind resistance, without infringing the pacing conditions.

J.S.

AUTO CYCLE UNION NOTES.

The A.C.U. Committee for 1912 is composed of the following members:

REPRESENTING THE ROYAL AUTOMOBILE CLUB.

Major F. Lindsay Lloyd.	L. M. Meyrick Jones.
J. R. Nisbet.	Capt. A. E. Davidson, R.E.
M. G Duncan.	D. C. Bolton.
R. Todd.	J. S. Mallam.
C. A. Smith.	W. G. McMinnies (also representing the Oxford M.C.C.)
G. F. Sharp.	
E. M. P. Boileau.	

REPRESENTING AFFILIATED CLUBS.

B. Marians.	S. Carter.
F. A. Hardy.	W. G. Tweedie.
C. C. Cooke.	F. A. McNab.
E. J. Bass.	J. Shaw Scott.
W. H. Browne.	D. W. Morgan.
C. J. Feeney.	D. K. Hall.
E. M. Oliver	H. A. Cooper.
V. Hart.	J. W. Ayers.
H. P. E. Harding.	Capt. D. F. Nicholl.
G. Rowden.	

REPRESENTING INDIVIDUAL MEMBERS.

J. W. G. Brooker.	W. Cooper.
A. Sharp.	B. T. Rice Pyle.
Otto Thomas.	Rev E. P. Greenhill.
T. H. Tessier.	G. L. Fletcher.
W. H. Wells.	A. H. Priestley.
W. Pratt.	G. N. Higgs.

The following officers of the A.C.U. were elected to serve for the ensuing year:

Chairman, Mr. Robt. Todd; vice-chairmen, Major F. Lindsay Lloyd, Messrs. J. R. Nisbet, Otto Thomas, and W. H. Browne; treasurer, Mr. J. S. Mallam. These gentlemen form the Management Committee of the Auto Cycle Union.

TRADE MEMBERS ON THE A.C.U. COMPETITIONS COMMITTEE.—It was decided that no member of the trade should be eligible to serve on the Competitions Sub-committee. A member of the trade is taken to mean one who is a manufacturer of or dealer in motor cycles or their accessories.

AFFILIATION.—The following clubs have become affiliated to the governing body: The Stroud and District, the Luton and South Beds., the Llanelly and District, the Merionethshire, and the Kidderminster Motor Cycle Clubs; also the motor cycle section of the Derbyshire and North Staffs. A.C.

MEMBERSHIP.—The increase of membership during the last month amounts to 492, composed as follows: 15 full members, 199 touring members, 160 members of clubs newly affiliated, and 118 new members of clubs already affiliated.

UNOFFICIAL TRIALS.—The following recommendation was passed by the General Committee: "Any owner, manufacturer, dealer, agent, or driver taking part, or directly connected with any trial or competition otherwise than under regulations made by the Union, and obtaining extensive advertisement therefrom, shall be deemed guilty of a breach of these rules, and shall be suspended."

UNOFFICIAL RECORDS.

BY "IXION."

THE A.C.U. has put its foot down upon unofficial records just in time. There was a period when these runs served a moderately useful purpose. Arnott's and Silver's End-to-end runs were dogged struggles with feeble and unreliable machines, and served both to inform the public that motor cycles were becoming roadworthy, and to prophesy that the motor cycle would be the cross-country mount *par excellence* of the next decade. The faster runs of later date over the classic course, ranging from G. P. Mills to the late A. J. Moorhouse, were more in the nature of personal achievements.

This record has now served its purpose. We all know that a first-rate motor cycle could easily be driven 880 miles in less than thirty-two hours, so the record has no longer any technical or mechanical interest; it has become purely a rider's record, as such no objection could be made to continued attempts, barring the fact that it is highly dangerous to the rider and to the public.

Much the same is true of the old six days' record. When B. H. Davies initiated this particular type of ride, a large proportion of the public fancied that a journey of 1,200 miles in a week would knock the rider to pieces, supposing his machine lasted out. By the time A. E. Catt came near doubling the distance, machines had made too much progress for the ride to possess any mechanical interest, and the ride was really a rider's record, though it acquired special interest because is was performed in the winter when the roads and weather were bad. Its main public interest lay in its being a magnificent demonstration of the possibilities of winter riding. Subsequent six day rides, attempted or performed in the summer, were entirely devoid of mechanical interest, and have attracted little attention except from collectors of statistics, the rider and his friends, the makers of the machine and accessories utilised, and, possibly, the police. The vast majority of readers will be glad to hear that these unofficial records will cease to be described in *The Motor Cycle*; they possess no technical interest or merit, and the condition of the rider, should he succeed, is usually no advertisement for the pastime.



THE SPEED OF JUNIOR TWINS.

Paul Pean, winner of the Circuit de L'Eure, described in our last issue, at a speed of 37½ m.p.h. His machine is a 350 c.c. 2¾ h.p. twin Peugeot with automatic inlet valves. The French race referred to is almost on a par with the Manx T.T. Race, so that the comparison of speed is interesting. P. J. Evans, the Junior T.T. winner, averaged 41½ m.p.h. on his twin Humber.

Here is the

SPECIFICATION



"THERE AND BACK" without any trouble.

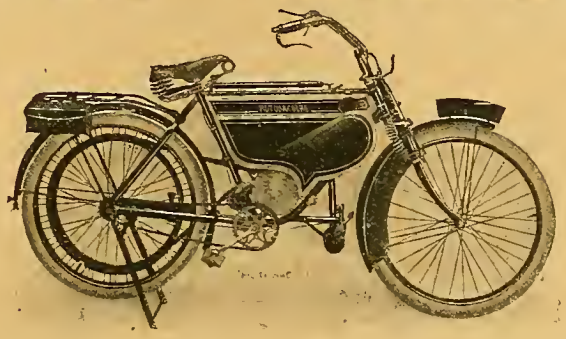
Of the CLEANEST, SIMPLEST, QUIETEST, and FASTEST LIGHTWEIGHT in the world.

The 2½ H.P. MOTOSACOCHE.

PRICE, with Free Engine,

£38

V Rubber Belt and Direct Drive optional.



PRICE, with Free Engine and Motosacoche Change Speed Gear,

£44

ENGINE—2½ h.p., 64 ×90 m/m., with mechanical inlet valve (perfectly shielded from the rider's clothes).
CARBURETTER—Dufaux (Patent).
CONTROL—Everything from handle-bar and footrests.
FREE ENGINE—Controlled from right handle end (Patent) or footrest if gear is fitted.
SILENCER—Silent (fitted with foot controlled cut out if required, extra).
IGNITION—Bosch high tension gear driven.
BELT—⅝in. strengthened Whittle V shape.
NUMBER PLATES—Front and Back.
INSTRUCTION BOOKLET—(in the tool bag), also Spare Parts List.
TANK—Carrying petrol (nearly one gallon), oil, paraffin, with gauges (all combined in one vessel).
FRAME—Latest design, exceptionally strong and low, giving plenty of belt clearance, height from ground to top of saddle from 31in. upwards and is fitted with Druid spring forks, *and footrests*.
BRAKES—Back brake working on belt rim, by foot. Front brake working on front wheel rim.
WHEELS—26in. fitted with Non-skid **Avon** Tyres.
MUDGUARDS—Round section strengthened, especially wide.
CARRIER—Tubular, strong but light.
STAND, "KICK-UP"—Held up to mudguard with a spring clip when not in use.
SADDLE—Lycett's la Grande.
TOOLBAG—Pannier, containing all necessary engine and cycle tools and oilcan, also instructions.

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FOR GENTLEFOLK — NO VIBRATION

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HOBART MOTOR CYCLE,

Four Distinct Models for 1912.

The 2½ **LIGHTWEIGHT** with Vertical Engine, exceptionally powerful and effective—For Hill Climbing it is unsurpassed.

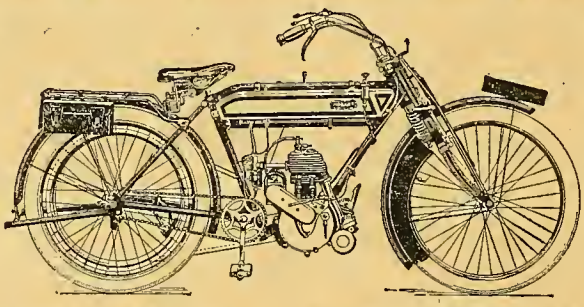
LUTON HOO competitions—3 Events, 3 First Prizes! Most comfortable on long journeys. Very low riding position. Many other notable features are introduced. An Ideal Touring Mount when fitted with **FREE ENGINE and THREE-SPEED GEAR.**

The 3½ h.p. STANDARD TOURING MODEL. Up-to-date in every respect. No faster Machine on the Market.

The 2½ h.p. LADY'S Model with FREE ENGINE and 3-speed gear.

Amongst the many improvements introduced are the following—
Adjustable Footboards.
Automatic lubricating device.
Antivibratory saddle, and
Dress Shields, detachable in 30 seconds.

London Agents—Messrs. Morris, Russell & Co., 6, Gt. Eastern St., London, E.C.



The new Type 4 h.p. TWIN CYLINDER for SIDECAR WORK.

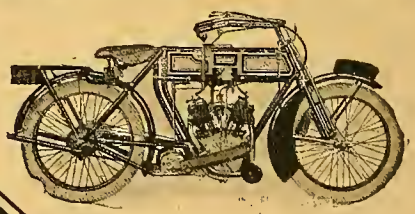
Owing to the wonderful flexibility and efficiency of the patented Engine fitted to this model, it is strongly recommended for Sidecar work, a magnificent Hill Climber, and wonderfully economical of petrol. The rapidly increasing demand for it proves its superiority.

Write for latest Catalogues.

HOBART, BIRD & Co., Ld. (DEPT. H 22,) COVENTRY.

SPLENDID SUCCESSES

in two classic hill-climbs



The TWIN cylinder Two Speed BAT.

BAT — BEST AFTER TESTS

on one day—May 11th.

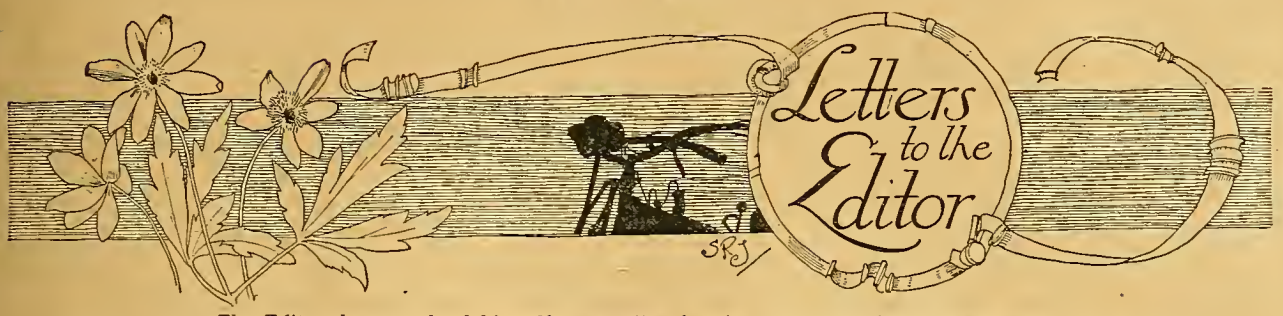
Edinburgh M.C. Open Hill-climb.

Class, over 600 c.c. Formula, J. D. Morrison **BAT 1st.**
" " " on Time, R. S. Morrison **BAT 1st.**
And Fastest Time of the Day.

Motor Cycling Club's Hill-climb.
Multi-cylinder, on Time, S. T. Tessier, **BAT 1st.**
" " Formula, S. T. Tessier, **BAT 2nd.**
Also Fastest Time of the Day.

Write to-day for the Bat Art Booklet, sent free on request.

The BAT MOTOR MANUFACTURING CO., PENGE, LONDON, S.E.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street E.C., and should be accompanied by the writer's full name and address.

Hill Climbing.

Sir,—Bushcombe Lane was successfully climbed some two weeks ago by Mr. W. B. Gibb, of Gloucester, on his two-speed 1912 Douglas in the presence of about a dozen Cheltenham motor cyclists. This hill is very rough and has a reputed gradient of 1 in 3. Mr. Gibb also started unassisted on the worst portion, and gained speed the whole of the way up (low gear 10⅜ to 1). H.A.C.

T.T. Entrants and the Olympia Show.

Sir,—Is it true that those makers who openly enter for the T.T. race are to be prejudiced in showing at the Olympia Show? If so, what an injustice to those firms who, without secretly subsidising private riders, have made up their mind to regain for British motor cycles the blue riband of motor cycle racing.

Why not first stop the thousands of little twopenny halfpenny events, and leave to the last the one event which is followed throughout the world? Is not the foreign trade of sufficient importance to get this fine advertisement for British motor cycles and their superiority, or are the manufacturers afraid?

Let us stick to the T.T. until we recover for Britain the famous Tourist Trophy. F.S.W.

The Danger of Uncontrolled Dogs.

Sir,—I see in the issue of the 9th that the attention of the A.A. and M.U. has been drawn to the uncontrolled dog danger on our highways, and that this body has communicated with the owner of some particular dog. What a boon it would be to motor cyclists if all motoring bodies would take up the matter really seriously.

Every week scores of riders get thrown from their machines, with more or less serious injury to themselves or their machines, more often both, and yet this danger on the highway goes on and seems to get worse than ever. I have been laid up in bed for months at a time from this cause, and am deaf in one ear as the result of one of the falls; only a month back I was thrown in Chalfont St. Peter; result damage to machine to the value of £5 and slight personal injuries. I think I got off luckily. Why should we be in this perpetual danger from an uncontrolled animal on the highway? Hoping the matter will be taken up strongly. F. W. APPLEBEE.

Weak Axles on Low-priced Sidecars.

Sir,—Now the motoring season has started, one can hardly help but be impressed by the number of sidecars seen on the road, especially of the low-priced variety, and against these I want to offer a word of warning.

The other day I was riding a popular make of 3½ h.p. motor cycle to which was attached one of those cheap sidecars. We were going along a level road (excellent surface and with the wind behind us) at about 35 m.p.h., when, without any warning, the sidecar axle suddenly broke, my friend and I being violently hurled into the hedge at the side of the road, and were lucky to escape without serious injury, the sidecar wheel continuing straight on and being picked up over fifty yards away. Had it been a wall, we would for a certainty have been killed.

Makers, to meet the demand for cheapness, send out sidecars the axles and fittings of which have a very small margin of safety, and it is a wonder there are not more accidents. ONCE BITTEN.

Pillion Seats.

Sir,—In February I invested in a 3½ h.p. three-speed Premier, and, having no storage for a sidecar without expensive alterations, I got a pillion seat. I used to carry my brother about on the carrier of my old jigger, so had no qualms about the steering.

Our first essay *à deux* resulted in a tumble in starting, but we got off very luckily. Next time we went on a quiet bit of road with some nice hills. We tried a few times down hill with free engine, but found the steering tricky. We then essayed a start on a good dip by lifting exhaust and popping off on the low gear, and rode a few miles backwards and forwards on middle gear. It took a long time and several narrow shaves before we could start with the aid of the clutch, at all times we found the steering tricky, and I did not feel inclined to risk taking my wife on it.

Now I have a sidecar, but, like others, I was a bit dubious of the capabilities of a 3½ h.p. for sidecar work on such hilly roads as I must travel in whatever direction I go. Three months have now elapsed, and several varied rides and one Easter tour have been enjoyed, and, thanks to my Premier, I have entire confidence in the 3½ h.p. to take us anywhere—with very little low gear work, and at any speed—with safety. The ratios I have used are 4, 5½, and 8¼ to 1. J.A.S.

The Problem of the Automatic Carburetter.

Sir,—May I contribute a few words on the subject of so-called automatic carburetters, which I note are receiving attention in your columns?

Often the term "single lever" would be more appropriate than "automatic," because there is, in many cases, no more automatic action than would be got by clamping together the



ENSURING AN EASY START.

At the start of the Rhnbina hill-climb. S. Davies (3½ h.p. Triumph) preferred to sit on his machine and he pushed off by two stalwarts. He secured second place in his class.

two levers of the ordinary carburetter control. Such single lever carburetters merely provide for a fixed air and petrol ratio, regardless of requirements.

Last year I purchased a multiple jet, single lever carburetter, and substituted it on my 8 h.p. sidecar machine for the standard B. and B., but the results were very disappointing.

In the first place, in order to obtain easy starting, one is bound to have a fairly large "small" jet. But then, on the other hand, taking good easy roads at 20-25 m.p.h., 75% of one's riding is done on one jet alone, the larger jets being reserved for hills. In other words, the main bulk of one's running is done with just the same quantity of air and petrol as is required for easy starting; thus, I got hot, noisy running on the level.

Take the other extreme—a hill requiring the full power of the engine. One opens the throttle wide, and "automatically" exposes more extra air holes, whereas in ordinary carburetters one would desire to close the air lever slightly under these circumstances. The same difficulty is encountered after turning a sharp corner on a slight gradient. One cuts the petrol right off to take the corner, and then requires full petrol and very little air for re-acceleration, but with the "automatic" this is not permitted. J. F. BRIGGS.

Sir,—In spite of all that the makers of automatic carburetters may say, your readers may take it for granted that it is an absolute fact that no automatic carburetter can give a perfect mixture under all circumstances and conditions such as is possible by means of a separate adjustment of the air supply by an expert. It is not a difficult thing to make an automatic carburetter which will answer in a very fairly satisfactory manner, but to ensure reasonable efficiency through all the ranges of throttle advance, it will require adjusting to suit both the particular spirit used and the average temperature of the working conditions, which may vary to a very considerable extent even in the course of one day's ride. All practical riders know that there are times when one can hardly give enough air, and on other days this supply requires to be considerably reduced. How is the automatic appliance going to do this? So far the inventors have not been able to endow their production with brains.

One of the best automatic carburetters I have yet handled is that on the Flanders car, but, good as this instrument is, I find that to get the best out of it an extra air would be a great advantage. It would tell one in an instant what adjustment to make for alterations in weather conditions, or change of motor spirit. With the automatic carburetter, one cannot be expected to be always tinkering with the adjustment, and the result is that during a considerable portion of one's riding time the mixture is not at its best, and with an extra control over some of the air the rider would be in a position to correct these inaccuracies to his advantage.

A. C. PEMBERTON.

Dangers of Running Backwards on a Hill.

Sir,—I was interested to read the letter of your correspondent, "D 7530," in the last issue, and would like to call attention to the fact that the "A.J." automatic sidecar stand can be operated to act as a sprag in the manner he suggests. In respect to this fitment, it is only necessary to connect up a Bowden control for driver or passenger, and stand can be operated at will by either. If an attachment be fitted as I point out, no release spring need be fitted, as the stand will return to its position automatically.

A. J. SPROSTON.

Criticism of a New Design.

Sir,—The article entitled "A Novel Slide Valve Engine," which appeared last month, has just come to my notice. It describes an engine which the writer says approximates closely to the ideal. His design looks well in the drawing, but all he appears to have done is effectually to shield the most important part of the cylinder walls from the air, and this in order to place a type of slide valve in such a position that, for a given temperature of cylinder, the valve system will remain cooler than is at present the case. But since in so doing he shields the cylinder from air currents, the maximum engine temperature must rise, and I am of the opinion that by conduction the valve chamber, which is an integral part of the cylinder, will reach a temperature approximating to that of a poppet valve system.

The writer also states that the annular space between valve chamber and cylinder will probably assist the cooling of the latter; this is absolutely and entirely impossible.

Assuming the drawing to be roughly to scale, the valve system consists essentially of two metal cylinders roughly 7in. in diameter, moving relatively to the valve port and to themselves, the propulsion being by valve rods, connecting rods, and cranks. With such a mechanism, should lubrication fail, the immediate result will be seizure and buckled rods. In spite of this, the writer designs a complicated and doubtful gear, with which he annihilates the very scarce valve troubles of the poppet system.

I venture to predict that the writer's engine will lead him to troubles far more serious than those he is endeavouring to avoid. CHAS. H. GOULDEN.

The Trade and the T.T.

Sir,—If the B. Marians, who writes in the issue of May 9th, is the B. Marians of the P. and M. Co., I should like to ask what authority he has to write on this matter?

The question of cost to the trade, about which he says that no private owner can have any conception, is all nonsense. Are there no genuine private owners who have ridden in the T.T. and have paid their own expenses?

As a matter of fact, the most successful riders in the T.T. do not spend a lot of money. C. R. Collier assured me the other day that he would (and has done) leave London with £10 in his pocket, go to the Isle of Man, stay there a fortnight, ride in the T.T., and return with a balance still left.

It is well known that the Colliers do not take a workshop or a huge stock of spare parts, and yet no riders have been more successful.

Again, take P. J. Evans, the winner of the Junior T.T. I am quite sure that his expenses were not great.

Fancy an official of a firm who can make a machine which can be ridden for 1,000 miles without opening the toolbag, talking about huge stocks of spare parts and special models which stop the output of a factory for weeks in the middle of a season. Think of it! The whole of the factory working on one machine. What a commentary on their ordinary models.

No! Mr. B. Marians, you are wrong, no event has done more to perfect the British motor cycle than the T.T., and those firms who have been successful in the past are flattered by the way in which new-comers in the trade are copying their designs and measurements; and, forsooth, methinks it is these same copyists who, fearful that their copies will show up badly against the originals, are clamouring for the T.T. to be discontinued.



MOTOR CYCLE RACING ON THE VELVET STRAND AT PORTMARNOCK

A snapshot during the 20 miles handicap. After a good spell of racing at Portmarnock Beach there is to be two months' interval.

Let every maker decide for himself, without being threatened by the Manufacturers' Union, and may the 1912 T.T. show that Britain is still first and foremost in motor cycle construction. Many brains are at work at the present time in perfecting designs and details for the coming T.T.; work from which many motor cyclists of the future will get the advantage. E.C.P.

Sir,—I hope you will grant me a little space to reply to the criticisms of my letter regarding the T.T.

"One of Them" makes no reply to my remarks, but confines himself to the suggestion that I do not approve of the T.T. because the machine in which I am interested is useless for that event.

But he admits that the machine is a satisfactory touring model and "has proved itself reliable." That being so, it is obvious that participation in the T.T. is not necessary to the development of a touring mount, and I therefore find myself in complete agreement with "One of Them." But why does he not sign his name? He has really written nothing to be ashamed about!

Mr. A. A. Scott seems to doubt that a number of manufacturers find it necessary to have a stock of spare parts on the island. It may therefore be news to him to hear that it is not unusual for a number of complete reserve machines to be on the spot. B. MARIANS.

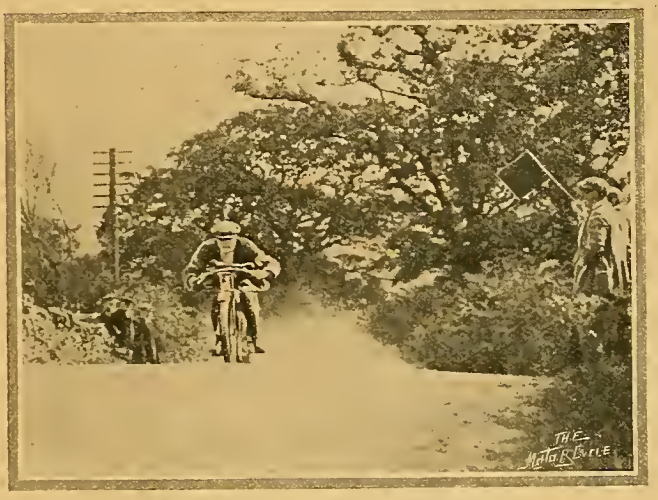
Inside or Outside Flywheels.

Sir,—I was very pleased to see "Passenger" taking up this momentous question. May I substantiate all he says, and add the following advantages of the external flywheel over the internal type: Far more flexibility. More mechanically efficient. Easier starting, owing to *(a)* momentum of flywheel overcoming compression, and *(b)* less tendency to gum up, owing to there being no internal flywheels churning up the oil. Saves about 15 to 20 lbs. in engine weight. Keeps up speed better on hills, and takes hills more slowly. Runs slower in traffic. Takes a higher gear without belt "snatching." Runs more freely with exhaust valve raised. Much better big end lubrication, owing to big end dipping in oil at every revolution. More space for larger big end bearing. Big end can be taken up without rebushing. Lower compression can be used to gain the same efficiency. No need for baffle plate under cylinder.

Somebody once stated that there is considerable oil drag with inside flywheels. There may not be much at high speeds, because, as the Condor Motor Co. stated, in your issue of February 8th last, the flywheels revolving fast cause the oil to be converted into a "Scotch mist." This is no doubt true, and, if so, where does the big end bearing get its oil from? A certain amount runs down the connecting rod, but there is absolutely none at the bottom of the crank case for the big end to dip into. It is also stated that the external flywheel engine has great disadvantages, but not what these disadvantages are.

There may be a few slight disadvantages of the outside flywheel, such as increased cost of manufacture, engine not quite so compact, possibility of crankshaft bending in case of a fall, but the latter can be easily overcome by fitting substantial footrests.

OUTSIDE FLYWHEEL.



Bradford M.C.C. Hill-climb at Leathley Bank.
F. Turvey (3½ B.S.A.) topping the rise just before the bad corner.

THE PROBLEM OF THE AUTOMATIC CARBURETTER. MR. BINKS REPLIES.

Sir,—Referring to the communication signed F. N. Pickett, in your last issue, the scriptural words, "The voice is Jacob's voice, but the hands are the hands of Esau," immediately occurred to me. Owing to the tone of this letter I first decided to ignore it, but the truly amazing statements that he makes should, in the general interest of motorists, not be allowed to remain uncorrected. He refers to a "constant level," apparently not knowing the difference between this and a high or low level. It is of importance that the petrol level should be constant to prevent "hunting." In my carburetters, at all events, it is immaterial whether the petrol is right at the top of the jet, as suggested by "E.M.O.," or some little distance below it. The question of petrol being allowed to dribble out of the jet of my racing carburetter when going uphill does not touch this point at all, as it is generally known that if petrol could be sprayed independently into a larger induction pipe, more power would be given at high speeds or greater power would be obtained at low speeds.

Referring to the 300 feet per second, it is common knowledge in the scientific world that ninety feet a second is the limit with which air can be drawn through a tube without setting up rarefaction. The mere fact of carburetters working at a much higher velocity than this only tends to show how bad they really are; at present there is no better way, but my venturi tube carburetter diminishes this effect.

Referring to his remarks concerning Mr. Brewer and his article appearing in the *Automobile Engineer*, I have no knowledge of this gentleman, and until his article appeared in this journal I was unaware that he was even interested in carburetters, but I think he will be amused when he hears that ten of the carburetters he described did not use choke tubes. Every carburetter that is made has a choke tube, without which no carburetter would work; whether the choke tube is fixed or detachable, which I certainly think it ought to be or whether it is part of the carburetter casting, is immaterial. He then refers to Mr. Brewer's remarks as to two-jet carburetters necessitating a certain amount of "stopping up." What this "stopping up" refers to I have no conception, but it would appear from your correspondent that it is some disadvantage. However, when it is considered that such cars as the Knight-Daimler, Napier, Siddeley, and Lancia (and there are no finer cars in the world) are fitted with two-jet carburetters, it is hardly worth enquiring further. Carburetters of this type, which have the jets and choke tubes instantly detachable, are the most easily understood carburetters that I know of, and the owner is enabled to tune up very easily.

My remarks about the petrol level will apply equally to your other more courteous correspondent "E.M.O." The only thing required if the petrol is constantly low is to have the jet orifice slightly larger. Regarding the respective working limits of a car engine and a motor cycle, I still contend that a car engine has the advantage. I have made engines that would drive a car smoothly at five miles an hour geared 3½ to 1 and accelerate up to over 50 on the same gear. I also have in my mind some tests recently made by S. F. Edge on one of his Napier cars. I think if your correspondent would look back in the columns of *The Autocar* he would find that the performance of the Napier car in question, as far as the range of speeds go, is probably greater than can be done with the same efficiency on a motor cycle engine. The question of the gear box has nothing to do with it, as I believe this Napier car would run about four miles an hour slowly and smoothly, and accelerate to over sixty on the same gear.

I am a pioneer in automatic carburetters for motor cycles, and naturally expect to have to contend with a deal of prejudice from a certain class of user, but, as a contributor in *The Motor Cycle* says, "No modern car is turned out without an automatic carburetter," and I think it will not be long before the same applies to motor cycles.

CHAS. BINKS.

Invasion of Rugby.

Coventry and Warwickshire M.C. v. B.P. Scouts.

ABOUT seventy motorists on motor bicycles, sidecars, and cars, members and friends of the Coventry and Warwickshire M.C., opposed a force of 500 B.P. scouts drawn from various towns in Warwickshire and Northamptonshire on Saturday last. The general idea was that the scouts acted as defenders, and the motorists as the attacking force in an invasion of Rugby. The motorists' object was to reach a point in Rugby (Mr. I. B. Hart-Davies's office, Bank Street) without being captured. Five motorists were to reach this spot and leave their registration numbers as proof of success.

The Rules of the Game.

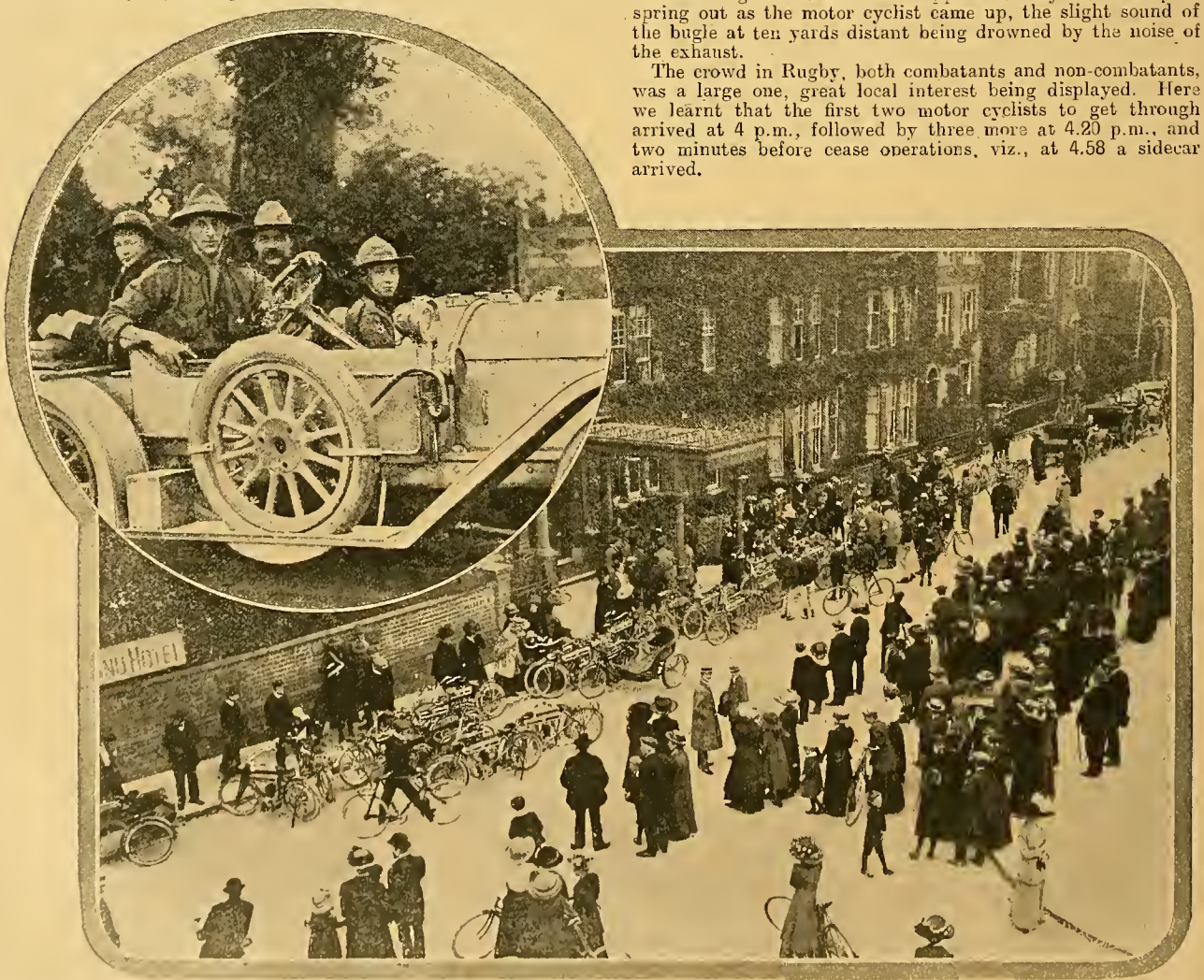
The principal rules were: A majority of one or more mounted captured the smaller number within ten yards, but if on foot the capture was by touch. Motorists wore white armlets, with the badge of the Coventry and Warwickshire M.C., and each vehicle carried a white flag. When captured the motorist's white armlet was changed for a red one, and the scouts placed a white band round their hats. Passengers in cars or sidecars could leave their vehicles but motor cyclists could not. Two circles were drawn from the centre of Rugby, the inner one with one and a half miles radius, and the outer six miles radius. Inside the smaller circle both sides were safe. No motorist could enter the larger circle until 3 p.m., and operations ceased at 5 p.m.

At a meeting held on Friday evening at Coventry the motorists were allotted stations on the edge of the outer circle, their positions being denoted by numbers. A corps of despatch riders under Captain F. Hulbert was the only means the motorists were allowed for communicating with their base headquarters, *The Midland Daily Telegraph* Office, Coventry. Mr. V. A. Holroyd was the commander of the motorists' forces, Mr I. B. Hart-Davies commanded the Boy Scouts, and the chief umpire was Captain Arthur Churchill.

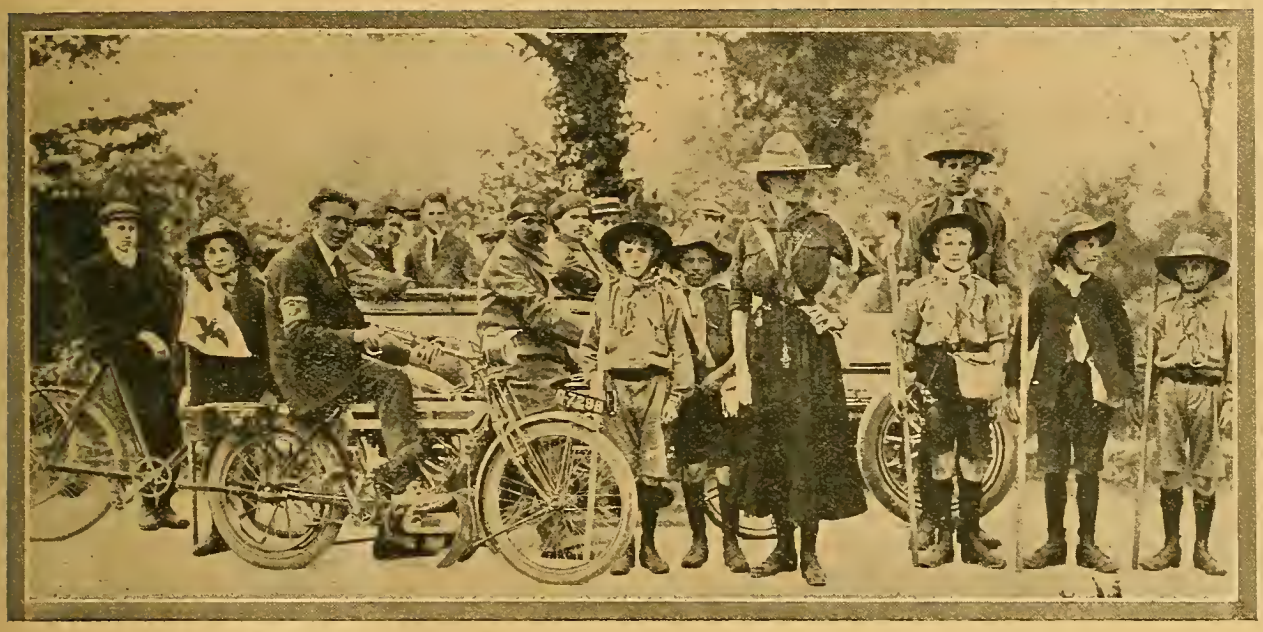
Each scout section was under a scout master, and they were placed at about forty different points within the six miles radius, the following positions being strongly held: Bretford Bridge, Brinklow, Grandborough, and Dunchurch.

Shortly before 3 p.m. we came across the motorists' commandant at Stretton-on-Dunsmore, and with him caught the first glimpse of the outposts of the scouts, who had detrained at Dunchurch and walked to their post. Executing a rearward movement, as we were one of the attacking party, we rode by circuitous lanes to Monks Kirby and saw various parties of motorists circling round seeking an entry. In many instances the scouts' positions were disclosed by little knots of spectators who had gathered to watch the captures. Wherever the scouts had been allotted an isolated spot single motor cycle riders were easily captured, as the keenest boys hid behind the hedge, and, stationing a bugler, also in hiding, to give a soft warning of the motorist's approach, they were ready to spring out as the motor cyclist came up, the slight sound of the bugle at ten yards distant being drowned by the noise of the exhaust.

The crowd in Rugby, both combatants and non-combatants, was a large one, great local interest being displayed. Here we learnt that the first two motor cyclists to get through arrived at 4 p.m., followed by three more at 4.20 p.m., and two minutes before cease operations, viz., at 4.58 a sidecar arrived.



The assembly outside the Grand Hotel, Rugby, after the "invasion." The Coventry motorists were declared winners, seven of their force having reached the goal within the prescribed time. Inset, the Boy Scouts commander's car.



Coventry and Warwickshire Motor Club members and their captors. The scout mistress is Miss Whitehorne, of Harbury.

The following are the names of the successful riders:

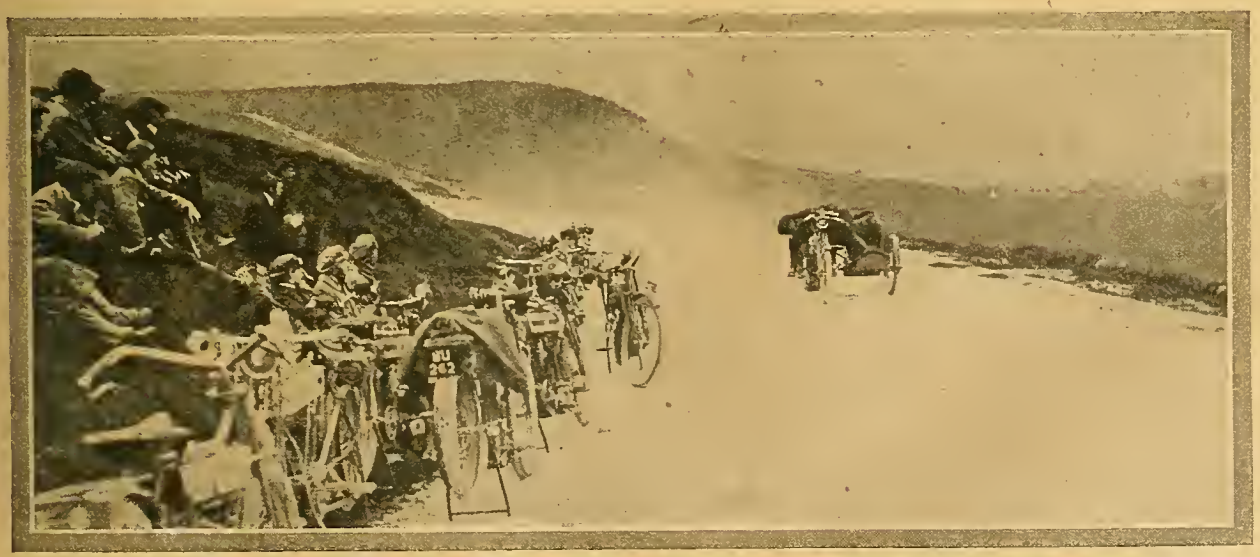
*Clifford O'Connor (3½ h.p. Rudge) ...	4.0 p.m.
*A. N. Barratt (3½ h.p. Rudge)	
A. R. Blockley (3½ h.p. Rudge)	4.20 p.m.
A. S. Knox (3½ h.p. Triumph)	
Rupert May (3½ h.p. Triumph)	
L. E. Ward, passenger Dance (5-6 h.p. Clyno sc.)	4.58 p.m.

*Coventry and Warwickshire M.C. members.

We understood the first two entered the circle *viâ* Yelvertoft, the route of the second batch is a deadly secret, and the sidecar entered *viâ* Churchover and Cosford. J. F. Spencer rode five miles on the canal towing path, but found the scouts had not forgotten that means of communication with their fortress. Sam Wright crossed two ploughed fields with his sidecar, and covered about sixty miles, but could not evade capture. At the Coventry headquarters, *The Midland Daily Telegraph* Offices, the motor cycle despatch bearers, conveying information of the defenders' positions, began to arrive immediately after 3 p.m., the first message locating the scouts at Stretton-on-Dunsmore being brought by F. Hulbert, who on returning to the despatch line, got a little too far in and was captured. Six despatches were delivered per motor cycle, and the besieged got nine telephone messages through, so headquarters were kept well informed. The total captures by scouts, as far as could be ascertained, were four cars, eighteen motor bicycles, and two sidecars. Altogether both sides expressed great satisfaction with the day's fun, and, in our opinion, are to be congratulated on their excellent organisation.

Captain Churchill (chief umpire) praised the rapid mobility of motor cycles and said that as a means of taking the rider to a certain point where his machine could be hidden and the remainder done on foot, they were invaluable. In his experience a combination of the motor cyclist and pedal cyclist worked exceedingly well.

In conclusion, it should be mentioned that one of the objects of the manœuvres was to provide a field day for the boys, and, judging by their animated countenances, they thoroughly enjoyed themselves.



J. Emerson (5 h.p. twin Peugeot sidecar), making a good climb in the Stockport M.C.C. Hill-climb on the 19th inst., at Axe Edge, Derbyshire.

FIRST AMATEUR HILL-CLIMB.

GOOD RACING MARRED BY TWO ACCIDENTS.



J. St. John (three-speed Quadrant) and J. G. Nickson (Rudge-Multi) starting. St. John won this heat.

A SPLENDID afternoon's sport was witnessed at the Sutton Coldfield and Mid-Warwickshire A.C. first open amateur hill-climb at Harley Bank, Wenlock Edge, but, unfortunately, the proceedings were marred by two regrettable accidents. The first occurred during practice spins in the morning, M. A. J. Orde, son of Mr. Julian Orde, the R.A.C. secretary, colliding heavily with the bank in attempting to take the bend at too great a speed. He now lies in the Wenlock Hospital with a small bone in his leg broken and sundry bruises. It should be added that Orde, jun., is a motor cyclist of but three weeks' experience, and his T.T. Rover, which is capable of 60 m.p.h., is too fast for him. Miss Hough was the second victim, her spill occurring in Class II. for lightweights. On her first run up, when she easily beat her opponent, the speed of her open frame Douglas caused great consternation. She rounded the bend on the outside, and was observed to wobble slightly. On the next ascent the little twin seemed to travel faster than ever, but its speed was not checked at the corner, and, getting over the crown of the road, the camber (or, maybe, the ovation of the crowd) upset the driver, and she was seen to wobble violently, and the next instant dashed into two spectators who were unwisely sitting at the roadside watching the racing. Miss Hough was thrown heavily over the handle-bars, but soon doctors were in attendance, and she was conveyed to hospital, suffering from concussion of the brain and shock. A male spectator had a bad cut on his leg, whilst a young lady's ankles were bruised. It is almost needless to add that a great deal of the interest had vanished when racing was resumed.

A Prompt Start.

Credit is due to the Sutton Coldfield Club for leading the way in the matter of amateur hill-climbs. There has been a growing feeling of late that hill-climbing competitions will die a natural death if we are to see certain leading trade representatives sweeping the board week after week in different parts of the country. The amateur should certainly be encouraged, but it would appear necessary first and foremost to select a hill practically free from danger—there have been far too many accidents of late—and also to stipulate that novices, or first year motor cyclists, are ineligible. As to whether lady motor cyclists should be encouraged to compete in speed events is a question upon which we hold strong views. We refer our readers to the leading article in this issue.

The competition started punctually at 2.30 p.m., police and officials effectually keeping the course clear. The surface of Harley Bank is extremely good, and only at one point is caution needed, and that is the bend, which is a very gradual one, and consequently more dangerous than an acute bend, in many people's opinions, as it tempts the competitors to take liberties. The slightest mistake in rounding a bend at 40 to 50 m.p.h. spells disaster. Several hundred spectators gathered to witness the event; we counted fifty or sixty cars which had conveyed parties to Wenlock. There is no doubt that neck and neck racing in pairs is far more interesting to watch than the orthodox form of hill-climb, and it is unfortunate that there are so few suitable hills.

The classes were well arranged. The first event was for variably geared or free engine machines up to 520 c.c.

HEAT WINNERS: G. F. Cooper (3½ Triumph), J. St. John (3½ Quadrant), J. H. Fox (3½ Rudge), A. R. Felton (3½ Zenith), and W. H. H. Sheldon (3½ Regal-Precision).

SECOND ROUND: G. F. Cooper beat D. R. O'Donovan (2½ Singer) bye, J. H. Fox beat J. St. John, A. R. Felton beat R. W. Lovegrove (3½ B.S.A.) bye, and W. H. H. Sheldon beat F. W. Banks (Regal-Precision) bye.

SEMI-FINAL: G. F. Cooper beat J. H. Fox and W. H. H. Sheldon beat A. R. Felton.

WINNER: G. F. Cooper (3½ Triumph), who led at the finish by about twenty yards.

The final was a good race, but it was noticed that both competitors in their excitement steered a more erratic course than in the heats. G. F. Cooper, the winner, made fastest time in this class, viz., 54⅘s.

The T.T. Lightweights.

Class II. was for twin and single touring machines up to 350 c.c. T.T. regulations.

HEAT WINNERS: F. G. Smith (2¾ Douglas), A. D. G. Clease (2¾ Centaur), C. Smith (2¾ Douglas), L. S. Maclean (2¾ Humber), who, with Miss Hough (2¾ Douglas), were appreciably faster than any other competitors in this class, and H. S. Kershaw (2½ Levis).

SECOND ROUND: F. G. Smith beat A. D. G. Clease, L. S. Maclean beat C. Smith, and H. S. Kershaw beat Miss Hough, who fell when leading.

SEMI-FINAL: L. S. Maclean beat F. G. Smith and H. S. Kershaw beat P. W. Owen (2¾ Zenith) bye—the latter broke his belt in starting.

WINNER: L. S. Maclean (2¾ h.p. three-speed twin Humber).



Final of Class 1. G. F. Cooper (Triumph) winner, and W. H. H. Sheldon (Regal-Precision) rounding the bend at Wenlock Edge. The corner work at high speed was most exciting.



F. Mayell and S. Briggs (3½ Triumphs) practically level at the bend in Class III. The first-named eventually won.

Maclean finished an immeasurable distance ahead of his opponent, and accomplished fastest time in his class, viz., 57s. He never switched off for the corner and managed his machine in such a daring manner that many considered him reckless.

Quite a long delay now occurred, a lady slowly walking her pony and trap the whole length of the hill.

Thirty-two Competitors in Class III.

Class III. was for T.T. machines, singles and twins, up to 500 c.c. 1912 T.T. regulations. There were thirty-two entrants.

HEAT WINNERS: H. G. Potts (Triumph), H. Ball (Triumph), Howard Smith (Triumph), H. Eardley (Premier), W. H. H. Sheldon (Regal-Precision), S. Briggs (Triumph), F. Mayell (Triumph), R. H. Edwards (Triumph), H. E. Perry (Ixion), J. P. Macdonald (Norton), A. C. Hardy (Norton), R. Wood (Rudge), and F. C. Sangster (Ariel).

SECOND ROUND: H. G. Potts beat H. Ball, H. Eardley beat Howard Smith, F. Mayell beat S. Briggs, R. H. Edwards beat H. E. Perry, A. C. Hardy beat J. P. Macdonald, and F. C. Sangster beat R. Wood.

THIRD ROUND: H. Eardley beat H. G. Potts, W. H. H. Sheldon beat H. Petty (Singer) bye, F. Mayell beat S. Briggs, R. H. Edwards beat F. Mayell, and A. C. Hardy beat F. C. Sangster.

SEMI-FINAL: H. Eardley beat W. H. H. Sheldon and R. H. Edwards beat A. C. Hardy.

WINNER: R. H. Edwards (3½ Triumph), who also made the fastest time.

The final heat was splendidly contested. H. Eardley's Premier had a Binks racing carburetter, and he worked his way to the final by prompt starts and quick acceleration. In the final both he and Edwards were side by side, but the latter's machine was in exceptionally fine fettle and forged ahead, winning by a few lengths after an exciting race.

Class IV.—Unlimited.

HEAT WINNERS: G. E. Johnson (8 Matchless), C. W. Jameson (8 Matchless), and R. Wood (3½ Rudge). Byes: G. F. Cooper, A. C. Hardy, T. M. Hutton, E. C. Backhouse, W. H. Dunkley, F. Mayell, W. H. Sheldon, R. H Edwards, S. Briggs, E. V. Pratt, and F. H. Southam.

SECOND ROUND: C. W. Jameson beat G. E. Johnson, G. F. Cooper (Triumph) beat R. Wood (Rudge), A. C. Hardy (3½ Norton) beat T. M. Hutton (8 Matchless), E. C. Backhouse (3½ Singer) beat W. H. Dunkley (6 Matchless), W. H. Sheldon (3½ Regal) beat F. Mayell (Triumph), and R. H. Edwards (Triumph) beat S. Briggs (Triumph). Byes: E. V. Pratt and F. H. Southam.

THIRD ROUND: C. W. Jameson beat G. F. Cooper, A. C. Hardy beat E. C. S. Backhouse, R. H. Edwards beat W. Sheldon, and F. H. Southam (6 Zenith beat E. V. Pratt (3½ Ivy).

SEMI-FINAL: C. W. Jameson beat A. C. Hardy and R. H. Edwards beat F. H. Southam.

WINNER: C. W. Jameson (8 Matchless with Jap overhead valve engine).

FASTEST TIME: C. W. Jameson, 47s. (second round). In the final the winner took 48s. to ascend the hill.

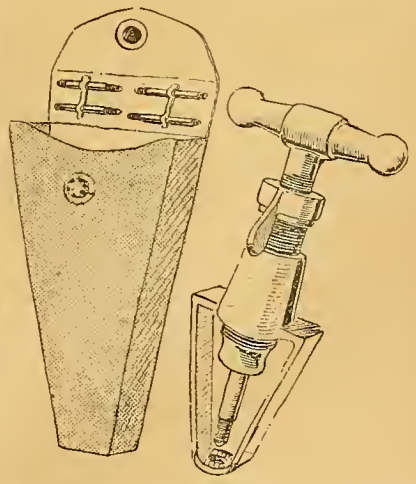
The popularity of the Sutton Coldfield event is proved by the fact that eighty-three entries were received, competitors journeying from all parts of the country *by road*. For instance, G. F. Cooper, winner Class I., rode from Oxford, R. H. Edwards from Birmingham, and C. W. Jameson from Bedford.



M.C.C. LONDON-COVENTRY AND BACK.
Competitors filling up at Leighton's Garage, Bicester. The riders are: W. Cooper (Bradbury), H. J. Pooley, Capt., (Premier), Hollis (Douglas), and Beau (Matchless).

A BELT FASTENER PINNING DRILL.

The latest idea in belt drills has been shown to us by Messrs. Lycetts, Ltd., Birmingham, and we reproduce a sketch of it herewith. The device consists of the usual drill frame surrounding the belt. At the top is a coarse threaded screw which holds the belt in position, operated by the wing nut shown; working through the centre is a screw punch with a fine thread. This latter terminates in a recess into which fits the fastener bolt. In the case of the sample submitted to us the fastener bolts are screwed at each end, but later patterns will have the usual square head, and the plunger will have a corresponding square recess. To use the pinning drill a bolt is fitted to the punch and the end of the belt with fastener on it is inserted in the frame, the punch is screwed down, and drives the bolt through belt and into fastener without cutting any of the threads of the fabric.



Bradford M.C.C. Open Hill-climb at Leathley Bank.

IT was a lovely afternoon, with a strong breeze blowing, when a start was made for this event at 2.45 instead of 2 o'clock, and although there were only about ninety riders it was not until close on eight o'clock that the last man was despatched. The reason for this state of affairs was to some extent the amount of traffic, but it can chiefly be placed, in the first instance, to the sad lack of sportsmanship exhibited by the motor cycling spectators, who were continually riding up and down the hill, and, in the second instance, to the marshals (of which there were about twelve), who if, instead of leaving the work to one or two, had all done their best and put their shoulders to the wheel, would have carried the event through with *éclat*. However, in spite of the long intervals, the ball was opened by H. C. Newman, who made an excellent ascent, as likewise did Jim Mackay. E. Woods on his 2¼ h.p. Levis went up nicely. Result of Class 1:

	m.	s.
H. C. Newman (2½ Ivy-Precision)	1	13⅘
Jim Mackay (2½ Singer)	1	20⅖
Fred Mackay (2¾ Humber)	1	29⅗

Class 2, for standard touring machines, was notable for the appearance of some Scott machines, which climbed the hill in good style. Newman, as usual, went up well, and so did Barnes. Felix Scriven on a Rudge came up to the corner very fast, but failed to pick up. Result:

F. W. Barnes (3½ Zenith)	1	0⅕
V. Taylor (3½ Rudge)	1	4⅕
H. C. Newman (3½ Ivy-Precision)	1	5⅖

Class 2a, confined to amateurs, resulted:

V. Taylor (3½ Rudge)	1	4⅕
P. Tolfree (3½ Matchless-Jap)	1	7
J. Day (3½ Bradbury, 3-speed)	1	23⅗

Baulked by Non-competitors.

Class 3, for multi-cylinders, had only two runners. One, J. M. Somerville (5 h.p. Matchless), was baulked by a non-competitor, with the result that he failed to take the corner and fell, luckily breaking nothing but a few teeth. The winner was F. W. Barnes on a 6 h.p. Zenith, who travelled well, but was 1s. slower than his 3½ h.p.

Class 4, variable gears, not exceeding 560 c.c. Result:

P. Weatherilt (3½ Zenith)	1	14⅕
H. Gibson (3½ Bradbury)	1	24⅘
E. Myers (3¾ Scott)	1	32

Class 6, single-cylinder racing machines to 500 c.c.—There was considerable excitement in this class, for there was some very bad riding, some of the competitors coming off at the corner and others wobbling in an atrocious manner.



J. Mackay (2¼ Singer) making a good climb. He secured second place in his class.



Hugh Gibson (3½ Bradbury) approaching the corner. The large number of spectators present will be noted.

While competing in this event P. Weatherilt (Zenith) made the fastest single-cylinder time of the day. Hoffman on a Triumph made a very good ascent, and H. Reed (Dot) did well, the result being:

	m.	s.
P. Weatherilt (3½ Zenith)		59⅗
J. A. Hoffman (3½ Triumph)	1	3⅕
H. Reed (3½ Dot)	1	6⅕

The Amateur Class.

Class 6a was the same as Class 6, but confined to amateurs. Dawson (B.S.A.) came a cropper, but was not hurt, as likewise did Birkett (Triumph). Result:

V. Taylor (3½ Rudge)	1	4⅘
J. A. Hoffman (3½ Triumph)	1	5
P. Tolfree (3½ Matchless-Jap)	1	10⅕

Class 7, open to any motor cycle not exceeding 1,000 c.c., brought out some good ascents. Miss Hind took the corner very well. Weatherilt, after some fearful wobbles, parted company with his machine. Barnes and Shaw were evidently too fast for the hill, for they were continually cutting out; and T. Hargreaves was one of the unfortunate ones who were baulked by non-competitors. Result:

*F. W. Barnes (8 Zenith)		58⅖
H. D. Shaw (8 Zenith)	1	0⅗
V. Taylor (3½ Rudge)	1	4⅗

* Fastest time of day, winning Eric S. Myers Trophy.

Class 7a was confined to amateurs. Miss Hind again rode well, but Shaw was this time unfortunate, and fell. Result:

V. Taylor (3½ Rudge)	1	4⅘
A. Somerville (7 Indian)	1	6⅗
Miss Hind (6 Rex)	1	8

In Class 8 the only competitors were Gibson and Barnes, both doing splendidly. Result:

F. W. Barnes (6 Zenith sc.)	1	15⅖
H. Gibson (3½ Bradbury sc.)	1	42⅖

The class confined to members of the Ilkley and District M.C.C. was run on an improvement basis, competitors attempting to improve on a certain set speed. Result:

	Time.	Speed given. m.p.h.	Speed attained. m.p.h.
J. H. Hoffman (3½ T.T. Triumph)	65⅕s.	38.66	38.58
J. Norman Longfield (3¾ Scott) ...	83⅖s.	35.62	30.11
Bert Cowling (5 Indian)	78⅘s.	37.75	32.05

The winner takes the Dawson Challenge Cup and club gold medal, the others silver and bronze medals respectively.

CURRENT CHAT

TIME TO LIGHT LAMPS.

May 23rd	... ...	8.54 p.m.
,, 25th	... ...	8.56 ,,
,, 27th	... ...	8.59 ,,
,, 29th	... ...	9.1 ,,

Miss Hough Progressing Favourably.

Tuesday's report concerning Miss Hough's condition is distinctly favourable. Fortunately no bones were broken, the cuts on the face being the most serious.

Birmingham to Land's End and Back.

There are thirty-four entries for the Birmingham M.C.C. second trial to Land's End and back for the Lycett Trophy. The outward run is on Saturday, and the return journey on Whit-Monday.

A.C.C. de France.

The Committee of the Auto Cycle Club de France is now busy looking for a suitable circuit over which to hold the Grand Prix race on June 16th. There are five classes for motor bicycles from 250 c.c. to 500 c.c., and three classes for tricars and sidecars from 350 c.c. to 1,000 c.c.

Petrol Consumption.

In the issue of May 9th, we published a letter in our correspondence columns signed "Enquirer," querying the amount of petrol consumed by the average 3½ h.p. standard engine. The replies received in answer to this letter are so numerous that we are summarising them for publication next week. It is worthy of note that our statements and those of the makers are fully confirmed with regard to average consumption.

Grand Prix de Champagne.

The date of the above event, which is being organised by the Touring Moto Club of France, has been altered from June 9th to June 2nd. This is in consequence of an agricultural meeting which is to be held on the course on the original date. The course is 225 kilometres in length, 45 kilometres per lap. Two British competitors have already entered, G. E. Stanley and Rex Mundy, who will ride Singers.

B.M.C.R.C. Fourth Members' Meeting.

The fourth members' meeting of the B.M.C.R.C., fixed for Saturday, June 1st, includes three invitation car races, in which motor cycles of 500, 750, and 1,000 c.c. capacities will race against cars, besides a five-lap cyclecar handicap and an hour race for all-comers. Racing commences at 2.30 p.m. Entries close first post Tuesday, the 28th inst.

A six hours' race has been suggested, and, provided it is sufficiently supported, will be arranged during the season.

Five Miles Flying Start Record.

G. E. Stanley made an attempt on the hour record at Brooklands last Friday on his Singer, but was stopped by a broken inlet valve spring. He, however, broke the five miles (Class C) flying start record, his time being 4m. 26⅗s., which equals 67.51 m.p.h.

A Clean Ascent of Porlock on the Run.

In the reliability trial to Porlock and back, held by the Bristol M.C.C., W. W. Douglas, riding a Williamson sidecar machine, ascended Porlock Hill with W. Rossiter, who weighs 13 stones, as passenger. The low gear was 8½ to 1.

Arthur Moorhouse Memorial Fund.

Donations which amount to £177 2s. have been previously published. The third list is just to hand, and amounts to £24 7s., bringing the total of the fund to £201 9s., the amounts for which have been either promised or actually paid.

75 m.p.h. on a 3½ h.p.

For fear the paragraph in our last issue regarding G. E. Stanley's wonderful speed of 75½ m.p.h. on a 3½ h.p. Singer should be misinterpreted, we are asked to explain that the speed attained is not due to any special shape of cam—which some readers imagine is the case—but to the special setting of the valves, which naturally is a secret of the Singer Co. If Stanley has occasion to leave his machine unattended he takes special care to alter the adjustment.

SPECIAL FEATURES.

FIRST AMATEUR OPEN HILL-CLIMB

"INVASION" OF RUGBY.

Coventry Motorists v. Boy Scouts.

SHOULD LADIES BE ALLOWED TO RACE?

The Motor Cycle in Johannesburg.

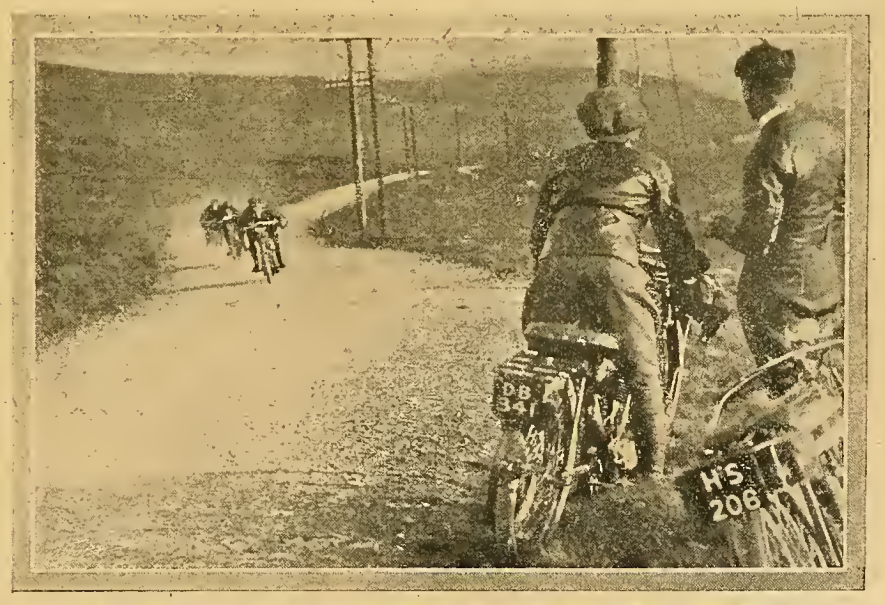
On March 31st last year, 429 motor bicycles had been registered in Johannesburg. This year at the same date the number had increased to 833, nearly double.

Tourist Trophy Races.

To secure a good position at the start, intending entrants for the above should send in their entry forms to the secretary the A.C.U., 89, Pall Mall, S.W., as soon as possible. The winners of last year's races will start first, and after them the starting positions will be allotted in accordance with receipt of entry.

R.A.C. Warning Signs.

At the request of the Dorset county surveyor the R.A.C. has agreed to erect one of its special danger signs at Broadstone, on Corfe Hill, on the road between Corfe Mullen and Poole. There is a hairpin bend on a steep gradient at this place, and the danger is so acute that the ordinary red triangle has been of little effect. The R.A.C. special danger sign is specially intended for use in such circumstances.



Final of single-cylinder class in the Manchester Motor Club's hill-climb at Heyden Bridge, Woodhead. H. Smith (Triumph) winner, leading H. Taylor (Bradbury) and W. Munroe (Rover). (See Club News pages).

Clipped from "The Motor Cycle"

Issue May 16th.

Douglas

VIBRATIONLESS LIGHTWEIGHT

Proof of its Power and Hill-Climbing Capability.

Sidecars and Modern Lightweights.

Sir,—It may interest some of your readers to hear the results of attaching a light sidecar to my 1911 model E Douglas.

I had not previously driven one until the 27th ult., but after a short spin without a passenger I found one sufficiently daring to trust herself in my hands. To my surprise the little twin made comparatively light of Highgate Hill on the low gear and took Barnet Hill on top, and continuing my trip to Hitchin I had only to use the low gear occasionally, and, but for a strong headwind, I think this would have been unnecessary. I might add that I have no interest other than that of a thoroughly satisfied user.

R. W. WEBB.

BIRMINGHAM M.C.C. MEMBERS' HILL-CLIMB at HIGHLEY HILL, MAY 11th

Class 1, DOUGLAS FIRST.
The hill has a maximum gradient of 1 in 5.

NORTH MIDDLESEX M.C.C. RELIABILITY TRIAL, MAY 5th.

Miss Hammett, DOUGLAS, SILVER MEDAL. G. L. Fletcher, DOUGLAS, BRONZE MEDAL. "Fletcher made a fine performance on Sunrising Hill"—*vide* report in "THE MOTOR CYCLE."

IPSWICH AND DISTRICT M.C.C. HILL-CLIMB, MAY 11th.

Classes IV. and V., F. G. Hammond, DOUGLAS, SECOND.

SHEFFIELD UNIVERSITY M.C.C. INAUGURAL COMPETITION, MAY 11th.

Lightweight Class, DOUGLAS, SECOND. This event was held on a steep by-way with a gradient of 1 in 5.

MAY WE SEND YOU FULL DETAILS OF OUR MODELS?

DOUGLAS BROS., Kingswood, BRISTOL

Telephone—No. 51. Telegrams—"Douglas, Kingswood." **London—336, Goswell Road, E.C.**

Cyclecars.

The cyclecar trials arranged by the Birmingham M.C.C. for Saturday last, were postponed until July 20th owing to clashing of dates.

Australian Hour Record.

We have advice from Melbourne that J. Lukey (3½ h.p. Triumph) has beaten the Australian hour record by covering in that time sixty-two miles. The ride took place on the new sports ground at Melbourne.

Paris Show Arrangements.

The thirteenth French Show of cars, motor cycles, and cycles will be held in the Grand Palais, Paris, from December 7th to 22nd. Applications for space should be addressed to the secretary, 51, rue Pergolèse, Paris, not later than July 1st.

A Fillip to the Cyclecar Industry.

We hear that H.S.H. Prince George of Battenberg has placed an order for an 8-10 h.p. cyclecar sociable. Prince George is the first member of the Royal Family to patronise this section of the industry, and has selected the firm of Duocars, Ltd., for his patronage.

Testimonial to Mr. F. Straight.

Several readers have fallen in with F. Dover's suggestion, published last month, to present a framed testimonial to the late secretary of the A.C.U., Mr. F. Straight, and have sent us their signatures for facsimile on to a testimonial. The vellum will be placed in the artist's hands within the next few days, therefore any readers who would like their signatures to appear on it should send them at once addressed to the editor. Doubtless there are many competitors in past A.C.U. trials and others who would like to show their appreciation of Mr. Straight's services in the above form.

Hill-climb and Speed Trials in South Wales.

The South Wales A.C. and Cardiff M.C. will jointly hold an open and closed hill-climb at Caerphilly on July 18th, and speed trials at the Rest Bay Sands, Porthcawl, on July 20th. There will be numerous classes in the motor cycle events, and the formula used will be that recommended by *The Motor Cycle*, $\frac{W}{C \times t^2}$. There is also a class for cyclecars in each event. Entries close on July 10th. Information may be obtained from the joint hon. secretaries, Mr. J. T. Willows and Mr. H. B. Jotham, 12, Duke Street, Cardiff.

Side-slip Up-to-date.

A witness in a recent collision case was asked by counsel what happened to the motor cycle? The reply was, "Oh, that cocksiddled over." The judge (Sir William Selfe): "That's a new word; how do you spell it?" The witness, who came from Christchurch, said he did not know, but it was a Hants expression. The judge then asked, amid laughter, if they cocksiddled at Christchurch, and was told that the word applied to the over-turning of boats. The next time a motor cyclist has a bad skid he should remember to smile and remark that he merely cocksiddled over.

FUTURE EVENTS

May 24 to 27.—M.C.C. London to Edinburgh Run.
„ 27.—Dublin M.C.C. Open Reliability Trial and Sidecar Competition.
„ 27.—Cork and District M.C.C. Open Trial to Abbeyleix and back.
„ 27 & 28.—Bradford M.C.C. Open Trial to Dunbar and back.
June 1.—Birmingham M.C.C. Open Hill-climb at Wenlock Edge.
„ 1.—Liverpool A.C.C. Open Hill-climb.
„ 1.—B.M.C.R.C. Race Meeting.
„ 15.—M.C.C. TEAM TRIAL.

In the Wind.

A well-known manufacturer, whose name was a by-word in the motor cycle world a few years ago, is contemplating making a three-wheeled sociable, all three wheels of which will be detachable.

A famous engineer in the motor car world is designing a new, and we are led to understand entirely successful, hydraulic transmission for motor bicycles.

New Sidecar Counter-shaft Transmission.

During the invasion of Rugby by the Coventry and Warwickshire Motor Club last Saturday we came upon Roy W. Walker with a 3½ h.p. New Hudson and sidecar. His machine was fitted with a very neat chain-driven counter-shaft and an 8in. front belt pulley. We learn that this fitting is as yet experimental, but is giving every satisfaction. It has the advantage of permitting the use of a kick starter, and the large diameter front pulley increases the life of the belt and practically prevents slip.

Wenlock.

Harley Bank, Wenlock, is being favoured for hill-climbing contests. Another open event has been arranged by the Birmingham M.C.C. for June 1st.

Stolen Machine.

A 3¾ h.p. Precision engined motor cycle and sidecar was stolen from the garage of Dr. Yates, City Road, Higher Openshaw, Manchester, in the early hours of the 10th inst. The engine number is 3605, frame number 202. The sidecar has a torpedo body, and the transfers on the tank and steering head of machine and mudguard of sidecar bear the following inscription: "The Rudolph," W. Raines and Son, Victoria Works, Fairfield, Manchester.

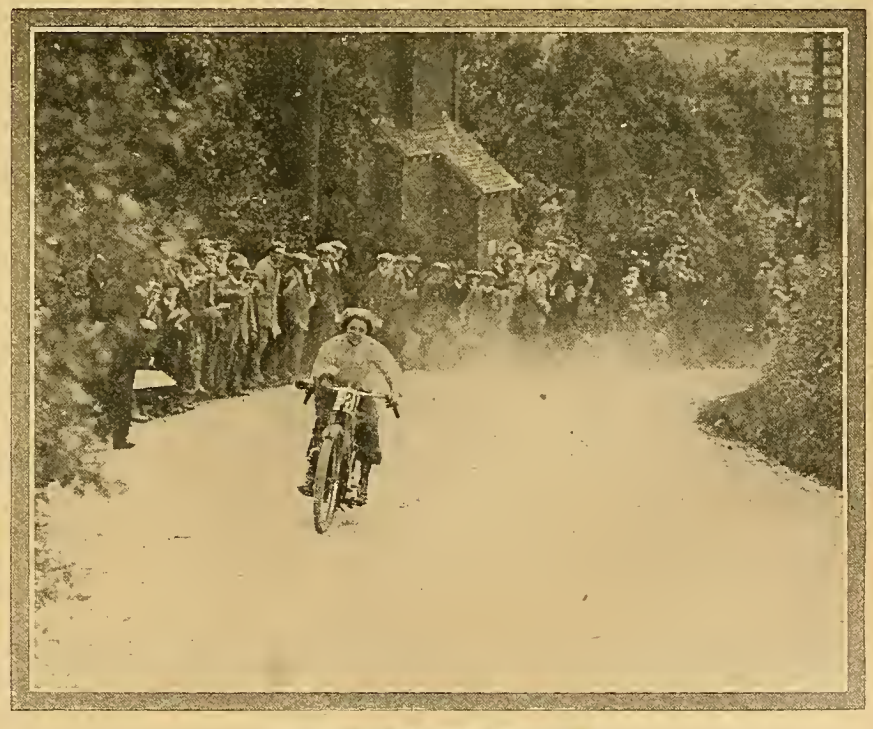
The Motor Cycle in Holland.

In sending us a photograph of the opening meet of the Dutch Motor Cycle Club, Mr. Citroen, the hon. secretary, states that the pastime is making great headway in that country, and every week new members are elected. The international reliability trial on August 5th is doing much to liven things up. F.N. and N.S.U. machines are the most popular machines in use; there are a few samples of British mounts, including Matchless, Rudge, Triumph, and Douglas.

Police Traps.

We have received information that a police trap is working in the Fenny Stratford five-mile limit. The police, we are informed, are very active.

On several occasions lately plain clothes men have timed motor cyclists on Westerham Hill, and summonses have been issued for driving to the common danger.



FIRST AMATEUR OPEN HILL-CLIMB.
Miss N. Hough (2¾ h.p. Douglas), a plucky rider who experienced a bad fall on Saturday at Wenlock. The snapshot was taken a moment before she fell.

N.W. London M.C.C. Open Passenger Trial.

THE success attending the N.W. London M.C.C. open trial for passenger machines last Saturday was attained beforehand by days of hard work on the part of the club's enthusiastic honorary officers, who had made up their minds there should be no cause for complaint. The somewhat intricate portions of the route near London and beyond Lanbury were arrowed in unmistakable fashion, not only by stout cards on walls, trees, etc., but also by ground posts at the same spots, so that if a competitor missed seeing one placed high, he was sure to be confronted by a lower one.

A novel system of route directing was also introduced, which we hope will be imitated by all other clubs organising open reliability trials. Where any corner or awkward turn



At the start from Jack Straw's Castle. G. Westacott (4 h.p. Zenith), G. Coombes (7 h.p. Indian), and J. Gibbs (2¾ h.p. Humber).

had to be negotiated, large cards bearing the words "right" or "left" respectively were affixed at least fifty yards before reaching a corner, and with this preparation drivers had enough warning to prevent them over-running places with which they were unacquainted. The route card was also a model production, it contained explicitly condensed directions—in case the route arrows were missed—very full tables of intermediate and total distances out and home, columns for check timing, and instructions for the checks, the latter printed black for the outward journey and red for the homeward trip, together with the most important of the governing regulations.

Mr. Frank Thomas, the hon. secretary of the event, had the route arrowed locally from each end late on Friday, and was out on the road by 3 a.m. on Saturday to make certain that everything was in order, and to this official many of the competitors, through the medium of *The Motor Cycle*, desire to tender their appreciation of his splendid organising capabilities.

Timekeeping and Checking.

The problem of agreement between timekeepers' watches *en route* was simplified by an official travelling ahead of the men who checked all the watches outwards to Coventry and repeated the checking homewards, leaving nothing to chance.

Advantage was taken of the organisation to include a class for members on solo machines, this being supported by fourteen competitors. The "open" class was confined to passenger machines, with thirty-three competitors, made up of twenty-seven sidecars and six cyclecars.

The starting point was at the top of Hampstead Heath, whence the first driver was despatched promptly at 7 a.m. *viâ* the lanes to Edgware, up Brockley Hill, across Bushey Heath, through Watford, Tring, Aylesbury, Bicester, Banbury, down Sunrising Hill, through Ettington, Warwick, Kenilworth, and on to the King's Head Hotel at Coventry, 102 miles. There was a non-stop section from the start to Aylesbury, the return journey being over the same route, and the non-stop section being Coventry to the summit of Sunrising, this latter section also terminating a timed schedule.

The weather conditions were good, the rain clouds only dropping a sprinkle for a couple of minutes in the morning, the remainder of the journey being made more pleasant by just enough sunshine. Going out, the only unfortunate driver in the non-stop section was W. O. Oldham (6 Bat), with a punctured rear tyre close to Tring, who, making a smart repair, was able to run in on time at Aylesbury. Near Banbury, H. J. Pooley (3½ Premier) was thrown by a big dog. Pooley turned a double somersault and landed on his hands; although wearing thick gauntlet gloves, his left hand was badly lacerated, but he pluckily continued and ran back home to time on the damaged machine.

Banbury was fateful for another N.W. London man, C. Williams (8 Chater-Lea sidecar), an exhaust valve rocker breaking in the timing gear case and causing his retirement. A. G. Clayton (3½ Humber sc.), running dead to schedule within a mile of Coventry, was stopped by a choked carburetter jet, and was a couple of minutes late. E. W. Ashworth (8 Chater-Lea sc.) stopped a mile or two earlier, and after spending half an hour to locate the trouble was exasperated to discover it was only a wad of fluff in the fuel pipe. Almost within sight of the luncheon spot Glyn Rowden (3½ Triumph) was put out of the contest by engine trouble. Osmond Hill (8 G.N. cyclecar) punctured near Warwick, and had a repetition of the trouble in control at Coventry; as repairs were prohibited in control, and he would have suffered a possible double penalty on the non-stop section, he retired.

Performances on Sunrising Hill.

The centre of interest on the return journey was Sunrising Hill, and arriving there with hot engines a number of failures were expected, but few were recorded. The star performances were made amongst the single-cylinder sidecar machines by J. R. Haswell, who achieved a surprisingly fast ascent upon a 3½ Triumph with the two-speed Triumph bottom bracket gear, and A. G. Clayton (3½ Humber sc. with Humber hub gear), who punctured the rear driving wheel tyre near the foot of the hill, but reached the summit without a falter.

So far as we could learn from the officials, the failures were: G. B. Coombes (7 2-sp. Indian), J. Gibbs (2¾ 2-sp. Humber), P. C. Dewhurst (3½ Rudge), E. G. Westacott (3½ Zenith-Gradua), W. P. Tippit (3½ 2-sp. Humber sc.), and W. S. Percival (3½ 2-sp. Humber sc.), the two latter dropping their passengers. The five cyclecars all made good ascents. Miss L. Berend (4 O.K.-Precision sc.), after climbing the hill well, had to retire at Aylesbury with a burst cover.

The following completed the journey in schedule time, but the awards will depend upon the intermediate checks:

SIDECARS.—WOOLWICH M.C.C. TEAM.

C. R. Collier (8 Matchless)	H. A. Collier (8 Matchless)
R. E. Guest (8 Matchless)	J. Tassell (8 Matchless)

STREATHAM AND DISTRICT M.C.C. TEAM.

R. G. Mundy (4 Singer)	W. O. Oldman (6 Bat)
S. T. Tessier (6 Bat)	

COVENTRY AND WARWICKSHIRE M.C. TEAM.

J. R. Haswell (3½ Triumph)	C. T. Newsome (3½ Rover)

N.W. LONDON M.C.C. TEAM.

A. C. Robins (3½ Humber). (Other members of team retired.)

SUCCESSFUL SIDECAR MACHINES.

Frank Smith (5-6 Clyno)	Hal Hill (8 Zenith)
H. W. Lambert (8 Chater-Lea)	W. P. Tippit (3½ Humber)
A. S. Phillips (8 V.S.-Jap)	W. S. Percival (3½ Humber)
A. J. Dixon (4 Singer)	F. S. Wheatland (6 Matchless)
J. Oliphant (3½ Premier)	

CYCLECARS.

Fred Hill (5-6 A.C. Sociable)	H. Morgan (8 Morgan)
J. T. Wood (8 G.W.K.)	E. Wilmott (8 Morgan)
G. M. Keiller (8 G.W.K.)	

MEMBERS' SOLO CLASS.

H. J. Pooley (3½ Premier)	Eric Rose (3½ P. and M.)
W. Cooper (3½ Bradbury)	P. H. Goddard (2¾ Douglas)
H. Bean (6 Matchless)	G. B. Coombes (7 Indian)
L. Joiner (3½ Brown)	J. Gibbs (2¾ Humber)
G. H. Hollis (2¾ Douglas)	P. C. Dewhurst (3½ Rudge)
H. Karslake (3½ Rover)	E. G. Westacott (3½ Zenith)



Dublin and District M.C.C.

The flexibility trial, held on the 18th inst., came to an abrupt termination by an unfortunate accident to R. Dunphy, which resulted in a compound fracture of his leg.

Scarborough and District M.C.

The third annual speed trials will take place on Whit-Monday on a new course which gives an excellent straight mile. Seven classes for all types of motor cycles have been included. H. D. Shaw, the present holder of the Webster trophy, is again competing in the "all-comers'" class.

Herts County M.C.C.

At a meeting of Herts County motor cyclists, held at the Red Lion, Hatfield, on the 15th inst., it was decided unanimously to start a county club catering solely for motor cyclists. Two hon. secretaries were elected, Mr. E. C. Jarvis and Mr. C. C. Cooke. The former will be responsible for members' events, and the latter for open events.

Willesden Green C. and M.C.C.

The first competition was held on the 11th inst. and took the form of a speed-judging and reliability trial over a circular course to Huntingdon and back. Owing to the severity of the course only eight finished to time. Result: A. W. Loughlin (3½ Triumph), 1st; C. N. Stafford (3½ Humber), 2nd; and W. J. Turner (3½ Triumph), 3rd.

Pontefract M.C.C.

The annual speed trials on Thursday last were held in Byram Park by permission. The bad weather, however, practically spoilt the event, and the slippery road made very fast speeds impossible.

In the half-mile flying start the result was: H. Craven (3½ Triumph), Capt. Smith (3½ Bat), and E. Lees, winner of the multi-cylinder class (3¾ Scott). Fastest time of the day was made by R. Gill on a 3½ Rudge.

Ilkley and District M.C.C.

The Founder's Trophy Reliability Trial was run off last week. This year the course was as follows: Ilkley, Skipton, Gisburn, Hellifield, Grassington, Pateley Bridge, where two hours were allowed for lunch, thence *viâ* Ripon, Harrogate, Skipton, to Ilkley. There were twenty entries. The winners of the trial proved to be as follows (handicap results):

1. Walter Mangham (3½ Premier and sc.), the Founder's Trophy, the club gold medal, and special gold medal for the best performance by a novice.
2. Roy Cowling (3½ Matchless), the club silver medal, and special gold medal for perfectly clean schedule.
3. B. Platt and A. Claughton (3½ Triumphs), the club bronze medals.

Westmorland M.C.C.

A hill-climb was held on the 16th inst., on a local hill named the Greyhound. Results:

SINGLE-CYLINDER CLASS.

		Time.	Formula.
1.	G. W. Braithwaite (3½ Zenith) ...	51s.	64.6
2.	B. Jefferys (3½ Triumph)	57s.	70.5
3	R. Bownass (3½ Matchless)	51⅘s.	78.6

TWIN CLASS.

1.	L. S. Parder (3½ Scott)	55⅖s.	£2.4
2.	J. W Nelson (3½ Scott)	62s.	£5.1
3.	R. Shaw (3½ Scott)	65s.	£8.1

Fastest time of day.—A. J. Moffat (6 Zenith), 50s.

The A.C.U. having disqualified a competitor for having ridden a machine which was not his own property in Class 9 (amateur class) of the Brigsteer open climb (Easter Monday), F. W. Barnes takes the prize for fastest time of the day.

York County M.C.C.

The annual hill-climb was held on the 12th inst. The hill was near Glossop and rises 1,500 feet in two miles. Results:

1.	M. Ruckley (8 Zenith)	X
2.	J. A. Prendergast (3½ T.T. Rudge) ...	+11
3.	A. McConnochie (5 Indian)	+18

Knock-out races (handicap).

Final.—McConnochie (5 Indian) beat Waterman (6 Bat).

Coventry and Warwickshire M.C.

The annual Welsh run is fixed for Saturday, June 1st, starting at 7.30 a.m., and journeying *viâ* Shrewsbury. Lunch will be taken at Lake Vyrnwy (104 miles) at 1.30 p.m., and the afternoon spent there. In the evening a move will be made for Llangollen, and the next day members will attempt the mountain road between Bala and Dinas Mawddwy, returning home in the afternoon.

Manchester M.C.

The first competition of the season took place on the 18th inst. in delightful weather. The hill was the usual one at Heyden Bridge, and the course was a mile in length. The competitors were handicapped on weight and h.p., so many seconds start being allowed and the riders sent up in pairs. The fastest time was accomplished by H. Marsden (7-9 Matchless) in 1m. 15s. Results:

		Weight lbs.	H'cap. secs.
	SINGLE-CYLINDERS.		
1.	J. Smith (3½ Triumph, private) ...	328	12
2.	H. Taylor (3½ Bradbury, private) ...	315	12
3.	W. Munroe (3½ Rover, trade) ...	335	12
	TWINS.		
1.	H. Marsden (7-9 Matchless, private)	590	8
2.	J. McCann (7 Indian, private) ...	413	5
3.	F. Sirett (7 Indian, trade)	378	scr.
	SIDECARS.		
1.	H. Bottoms (3½ Triumph, trade) ...	540	25
2.	P. Platt (3½ Bradbury, trade) ...	604	10
3.	W. Miles (3½ Humber)	—	—

Sheffield and Hallamshire M.C.C.

The club held its speed trials on the 18th inst. in a by-lane near Baslow, Derbyshire. The day was delightfully fine, and a large gathering witnessed some fast speeds on a course which was not by any means level. The first 150 yards were on a slight down grade, but the remainder of the course had an up gradient of 1 in 20. The course was 1,100 yards long, and a flying start was allowed. Results:

CLASS I.—Lightweights.

1.	J. Haslam (2¾ Douglas)	55⅖s.
2.	H. Dakin (2¾ Douglas)	64⅘s.
3.	W. Torr (2¾ Douglas)	93⅖s.

CLASS II.—Standard Single-cylinders.

1.	D. Bradbury (3½ Norton)	38⅕s.
2.	J. A. Stacey (3½ Rudge)	45⅖s.
3.	S. Sawer (3½ Premier)	45⅗s.

CLASS III.—T.T. Single-cylinders.

1.	J. Nicholson (3½ Campion)	40s.
2.	J. Haslam (3½ Premier)	40⅖s.
3.	F. H. Ronksley (3½ Rudge)	43⅕s.

CLASS IV.—Standard Multi-cylinder Machines.

1.	E. L. Moxey (8 Matchless)	35⅖s.
2.	C. E. Nicholls (8 Zenith)	36⅕s.
3.	R. Garnett (6 Matchless)	37s.

CLASS V.—For any Machine.

1.	C. E. Nicholls (8 Zenith)	35⅘s.
2.	E. L. Moxey (8 Matchless)	36⅖s.
3.	D. Bradbury (3½ Norton)	37⅕s.

The timing was mechanical, and was in the hands of Mr. J. W. F. Tranmer, of Scarborough, his ingenious contrivance eliciting much favourable comment.

Club News.—

Central Technical College M.C.C.

This club has been revived after two years, and has at present a membership of thirty.

A members' hill-climb was held on May 4th, on a hill leading out of Wooburn, off the main Oxford Road. The gradient is not very severe, the average over the whole length being 1 in 10, with a pitch of 1 in 7 on the top corner. Results.

CLASS I.—Lightweights, 350 c.c.

1. S. H. Dring (2¼ F.N.) ... ... 46⅘s.
2. S. N. Pocock (2¾ Douglas) ... ... 62⅖s.

CLASS II.—Touring models, 600 c.c.

1. R. Firth (3½ Zenith) ... ... 24⅘s.
2. H. D. Lewin (3½ Triumph) ... ... 26⅗s.
3. E. F. Elderton (3½ Zenith) ... ... 27⅕s.

CLASS III.—T.T. models, 600 c.c.

1. A. T. Richards (3½ Rudge) ... ... 24⅖s.
2. M. G. Drew (3½ Zenith) ... ... 25⅖s.
3. E. L. Buchanan (3½ Norton) ... ... 28s.

CLASS IV.—Open.

1. R. Firth (3½ Zenith) ... ... 20⅖s.
2. G. S. Drew (6 Zenith) ... ... 23⅗s.
3. A. T. Richards (3½ Rudge) ... ... 24⅖s.

CLASS V.—Sidecars.

1. G. S. Drew (6 Zenith) ... ... 32⅖s.
2. H. H. Bagnall (8 Chater-Lea) ... ... 40s.

Surrey M.C.C.

An inter-team reliability trial, extending from Guildford to Arundel, by way of Petworth and Bury, and returning to Milford by way of Petworth and Midhurst, was held on May 15th.

Competitors were required to make non-stop runs, and the performances on Bury Hill were carefully observed. The following made non-stop runs:

	Marks lost.
S. H. Crow (3½ Zenith-Gradua)	1½
C. A. Crow (8 Chater-Lea)	2½
P. Kirk (3½ Triumph)	4
F. A. McNab (3½ Trump-Jap)	5
H. R. Owtram (3½ Triumph)	6½
H. Mitchell (3½ Premier)	7½

Hants Motor Cycle Union.

Owing to the kindness of Lord Ashburton who allowed the use of his park at The Grange, the Hants M.C.U. were able to hold a most successful hill-climbing contest. Results:

CLASS I.—Under 340 c.c.

Entrant, Machine, and Club.	Marks.
1. S. J. Rogers (2 Humber), Southampton ...	.024
2. T. Thompson (2¾ Douglas), Portsmouth ...	.022
3. T. Little (2¾ Douglas), Fleet	.0187

CLASS II.—Under 500 (touring).

1. F. Tappenden (3½ Premier), Portsmouth ...	.024
2. Percy Kiln (3½ New Hudson), Portsmouth	.023
3. Melvin Clark (3½ Zenith), Portsmouth ...	.022

CLASS III.—T.T. Singles.

1. Rafe Barclay (3½ Rudge), Fleet	.025
2. G. E. Eyston (3½ Rudge), Bournemouth ...	.020
3. W. Blackmore (4½ Calthorpe), Bournemouth	.019

CLASS IV.—Twins.

1. A. W. Moore (6 Zenith), Portsmouth ...	.0187
2. J. G. Kimber (6 Matchless), Fleet ...	.0184
3. J. J. Edney (6 Zenith), Portsmouth ...	.016

CLASS V.—All-comers.

1. Rafe Barclay (3½ Rudge), Fleet	.026
2. Percy Kiln (3½ New Hudson), Portsmouth	.025
3. R. H. Williams (3½ Bat), Winchester ...	.021

CLASS VI.—Sidecars.

1. Percy Kiln (3½ New Hudson), Portsmouth	.031
2. Melvin Clark (3½ Zenith), Portsmouth ...	.021
3. H. S. Illingworth (3½ New Hudson), Portsmouth	.020

CLASS VII.

1. H. H. Heather (3½ Humber), Winchester	4.17
2. R. C. Pearson (3½ Premier), Portsmouth	4.6
3. T. Thompson (2¾ Douglas), Portsmouth	3

A team trial will be held on Whit-Monday.

Mersey M.C.

On the 19th inst. was held the first members' hill-climb of the season. Results:

SINGLES.

	Time.	Fig. of merit.
J. H. Fox (3½ Rudge multi)	0m. 56⅖s.	70.7
C. L. Scott (3½ Rudge)	0m. 52s.	70.9
M. Rimmer (3½ Zenith)	0m. 56⅘s.	74.7

SIDECARS.

F. Rees (3½ Rudge, N.S.U.)	1m. 23⅗s.	73.05
W. E. Smith (5 Zenith-Gradua) ...	1m. 15⅕s.	86.1
S. W. Phillpott (3½ Humber 2-sp.) ...	2m. 0⅕s.	92.2

LIGHTWEIGHTS.

F. C. Jones (2½ Singer fixed)	1m. 2s.	56.2
N. Brown (2½ Hazlewood, Armstrong)	1m. 16⅕s.	71.3

TWINS.

G. H. Lake (4 Scott)	1m. 20⅖s.	102.07
E. F. Baxter. (6 Rex)	0m. 45⅗s.	112.4

For the Whitsuntide week-end a run has been arranged to Lake Vrynwy.

Wigan M.C.

The results of the hill-climb at Rivington Pike on the 12th inst. are as follows:

CLASS I.—Lightweights.

1. P. Wiltshire (2½ Singer)	65.85
2. Russell King (2¾ Enfield)	93.14
3. Leslie Parks (2¾ Enfield)	102.51

CLASS II.—Touring Singles.

1. P. Wiltshire (2½ Singer)	66.03
2. G. Dickinson (3½ Triumph)	79.10
3. R. Rimmer (3½ Triumph)	79.57

CLASS III.—Multi-cylinders.

1. *W. Bolton (6 Enfield)	91.23
2. J. Baker (3¾ Scott. 1911)	101.40
3. Dr. Aikman (2¾ Douglas)	115.90

*Bolton accomplished fastest time of the day.

CLASS IV.—T.T. Machines.

1. Bert Timberlake (3½ Premier)	76.75
2. A. Mynekyme (3½ Triumph)	81.92
3. R. King (3½ Triumph)	86.90

CLASS V.—Variable Gears (starting and stopping).

1. P. Wiltshire (2½ Singer)	86.21
2. R. Rimmer (3½ Triumph)	109.85

CLASS VII.—Sidecar Class.

1. Graham Dickinson (3½ Triumph and sc.)	74.20
2. W. Bolton (6 Enfield and sc.)	85.93

Bishop Auckland, Darlington, and District M.C.

The above club held a hill-climb on Penny Bank, near Barnard Castle, on Wednesday, the 24th ult. The results on the formula $\frac{T^2 \times C}{W}$ as recommended by *The Motor Cycle* were as follows:

Class I., Touring Singles.—1, P. Kirkup (Triumph); 2, H. S. Moon (2¾ New Hudson); 3, H. N. Hull (Zenith).

Class III., T.T. Singles.—1, C. W. Smith (Smith-Precision); 2, J. P. Forster (T.T. Rudge); 3, F. G. Wake (T.T. Triumph).

Class IV., All-comers.—1, C. W. Smith (Smith-Precision); winner of Triumph gold medal; 2, H. Mason (Matchless); 3, F. G. Wake (T.T. Triumph).

Class IV., Sidecars.—1, A. B. Hare (T.T. Triumph and sidecar); 2, E. C. Presland (Chater-Lea and sidecar).



A G.N. cyclecar owned by F. Thomas which took part in the N.W. London M.C.C. trial last Saturday. Miss Thomas is seen at the wheel.

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FOR SOLO WORK

Taken from another recent testimonial.

"Delightful to forget you have tyres. Up till now have completed 8,000 miles without a puncture."
(Signed) A. J. ATTWOOD, Lansdowne Gardens, S.W.

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Just as much care is exercised in its manufacture, just as fine materials are used. It is the correct tyre for the power and will be found to give complete satisfaction.
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WAKEFIELD CASTROL (Regd.)

Class C. Up to 500 c.c.—G. E. Stanley (Single-cyl. Singer) Kilometre 29.65 secs.; Mile 49.30 secs.

Class D. Up to 750 c.c.—H. Hunter (Twin-cyl. Corah-Jap) Kilometre 28.75 secs.; Mile 47.34 secs.

Class E. Up to 1,000 c.c.—G. F. Hunter (Twin-cyl. Zenith Gradua and sidecar) Kilometre 31 secs.; Mile 55.6 secs.

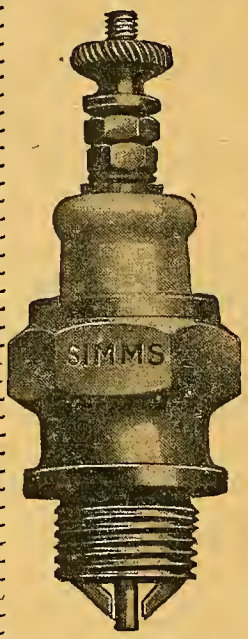
THE 50 MILES SENIOR T.T. RACE.—W. H. Else on a Rudge won the "Alec Ross," using "Castrol."

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In view of the disgusting weather we have had since November last, I think you may care to know that in the course of just upon 1,000 miles I have not had the vestige of a side-slip, puncture, or any tyre trouble whatsoever. If I were to take off the tyres and send them to you, I think it would tax even your expert knowledge to pick out which was on the back wheel, so slight is the wear. The immunity from side-slip given by the three large ribs has astonished me."

C. R. GRIFFIN.

PALMER CORD TYRES HAVE NO EQUAL FOR TOURING.

Club News.—

Bristol B. and M.C.

The reliability trial to Taunton and back attracted seventeen starters, of whom fourteen made non-stops. The winner was L. E. Scammell (3½ Rex).

Walthamstow M.C.

A non-stop and speed-judging competition was held to Newmarket and back on the 12th inst. Results: 1, A. G. Peppercorn (3½ h.p. Bradbury), silver cup and gold medal; 2, A. Shelley (6½ h.p. Humber and sidecar), gold centre silver medal; 3, W. S. Low (3¾ h.p. Scott), gold centre silver medal.

South Birmingham M.C.C.

The first speed-judging competition was held on the 13th inst. to Bewdley. Result:

	Time error.
J. Percox (3½ Allday)	1m. 15s.
F. W. Merrick (6 Enfield sc.) ...	2m. 10s.
W. E. Bayliss (3½ New Hudson) ...	2m. 10s.

North-Eastern A.A. and Bishop Auckland, Darlington, and District M.C.

A team trial under the auspices of the above association was held recently. The course, which was a severe one, included Sutton Bank, Lythe Bank, and Salthurn Bank, and the distance the competitors had to travel was about 142 miles. Owing to the morning being wet and cloudy, only five teams turned out; each team consisted of three riders and the winners proved to be: C. Shaw (3½ Triumph), H. N. Hull (3½ Zenith), and G. Wilson (6 Zenith). Each rider in the winning team receives a small N.E.A.A. silver cup and a butt-ended tube.

Derbyshire and North Stafford A.C. (Motor Cycle Section).

Speed contests took place on the 11th inst. over a perfectly straight, level course, the distance being one kilometre from a standing start. Results:

Event I. (For Members of the D. and N.S.A.C. and the Derby and District M.C.C.)—1, A. F. W. Greeves (Triumph); 2, D. C. Bolton (Martin).

Event II. (For Members of the D. and N.S.A.C.)—1, F. S. Linnell (Bradbury); 2, D. C. Bolton (Martin).

Event III. (A Scratch Race for Members of the D. and N.S.A.C.; touring machines.)—1, A. F. W. Greeves; 2, J. Birchenough.

North Middlesex M.C.C.

A petrol consumption test was held on the 11th inst. at Totteridge. The results were worked out on formula, the highest figure of merit showing the winner. The first three are: M. Abraham (Indian), 389.6; P. Dangerfield (Douglas), 320.6; S. F. Garrett (Triumph), 286.3.

Scarborough and District M.C.C.

The club's spring reliability trials were held on the 11th inst., when the course of ninety miles was from Scarborough *viâ* Seamer, Flixton, Hunmanby, Kilham, Driffield, Beverley to Hornsea (tea control), and back *viâ* Carnaby, Bridlington, Cayton Cliffs to Scarborough. D. Bradbury, of Sheffield (3½ Norton), was first of the motor cyclists, losing only eleven marks.

Leven and District M.C.C.

A hill-climb was held recently at Cadger's Brae, near Pitlessie. Results: Class II. (singles): 1, O. C. Braid (T.T. James); 2, R. J. Braid (T.T. Norton); 3, J. Cameron (T.T. Bradbury). Class III. (twins): 1, A. J. Carlow (6 Rex-Jap); 2, W. Carlow (6 Bat-Jap); 3, T. C. Balfour (6 Bat-Jap). Class IV. (unlimited, confined): 1, S. O. Shepherd (8 Dot-Jap), 35s.; 2, A. J. Carlow (6 Rex-Jap), 37⅕s.; 3, R. J. Braid (3½ T.T. Norton), 38s. Class V. (unlimited, open): S. O. Shepherd (8 Dot-Jap), 33⅗s.; 2, R. J. Braid (3½ T.T. Norton), 35⅘s.; 3, J. G. Beveridge (T.T. Triumph), 36⅗s.

Norfolk M.C.C.

A members' hill-climb was held at Ringland recently. The distance is one-fifth of a mile and the rise 105ft., giving an average of 1 in 10. Results:

Class I., Touring Machines on Formula.—1, R. O. Clark (2¼ h.p. F.N.); 2, A. Adcock (2¼ h.p. F.N.); 3, H. G. Brown (3½ h.p. Rudge).

Class II., Flexibility.—1, F. C. North (3½ h.p. Ariel); 2, E. L. Mills (2¾ h.p. Douglas); 3, E. M. Wood (3 h.p. N.S.U.).

Class III., 500 c.c. and under.—1, G. Boswell (3½ h.p. Ariel); 2, R. O. Clark (3½ h.p. L.M.C.); 3, F. C. North (3½ h.p. Ariel).

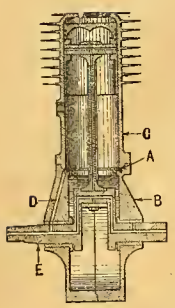
Class IV., Unlimited.—1, R. O. Clark (7 Indian); 2, G. Boswell (3½ h.p. Ariel); 3, A. Adcock (3½ h.p. L.M.C.). Clark made fastest time of the day in this event.

Class V., Sidecars.—1, R. O. Clark (2¼ h.p. F.N.); 2, R. Attwood (5 h.p. F.N.); 3, H. Gill (7 h.p. Indian).



Inaugural meeting of the Luton and South Bedfordshire M.C.C. at the Rose and Crown Hotel, Tring.

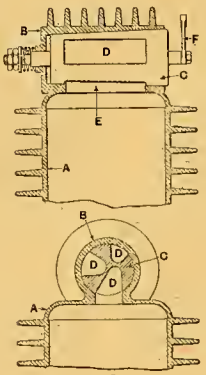
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The particular feature of the invention illustrated (it is shown applied to an engine of the two-stroke type) is an arrangement of a groove A at the top of the crank case B, which is adapted to collect oil draining from the cylinder walls C, and conveying it by means of a duct to the pulley side crankshaft bearing E.—W. H. Butterfield, No. 659, 1912.

A Variable Compression Device.

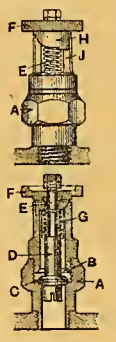
Cast with the cylinder A is a chamber B, which receives a plug C, provided with recesses D of different capacity. These recesses may be put into communication with the cylinder by means of a port E, the plug C being provided with a handle F for this purpose. The result is that a reduction of the compression ratio is produced varying in proportion to the capacity of the recesses D.—W. E. Groves, No. 6,508, 1911.



PATENTS by Eric W. Walford A.C.I.P.A.

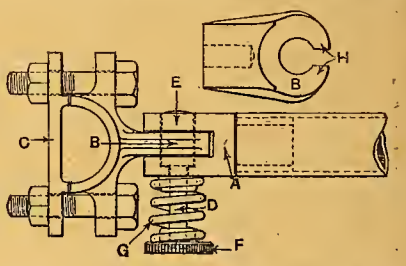
A Decompressor.

Screwing into the cylinder is a hollow metallic body A, which is provided with valve seats B C. With these valve seats co-operate a double-acting valve D provided with an upwardly projecting stem E, having a milled knob F at its upper end. Between the valve D and the upper end of the casing A is arranged a coil spring G. The knob F has a face cam H on its lower surface adapted to engage projections J on the upper part of the casing A. In operation, with the parts in the position shown in the sectional drawing the engine compression raises the valve D to a position between the valve faces B C, allowing a portion of the charge to escape until the pressure is reduced sufficiently to permit of the spring G returning the valve D to the seat C, when no further loss takes place, and a reduction of compression is obtained dependent on the strength of the spring G. For ordinary running the knob F is rotated, causing its cam face H to engage the projection J on the casing, and drawing the valve D normally on to the seat B, preventing any loss of compression.—F. Guest, No. 22,896, 1911.



A Sidecar Joint.

The detachable member A is forked and adapted to receive a projection B carried by the clip C. The member A is provided with a boss through which passes a bolt D, having an enlarged bead E at one end and being provided with a milled knob F at the other end, a spring G normally keeping the various parts in the position shown. To attach or detach the sidecar, the bolt D is pressed inwards, releasing the enlarged part E from the aperture in the portion B. The eye in B is slotted out at H to allow it to pass over the smaller portion of the bolt D.—J. W. Scott and C. T. Rhodes, No. 21,973, 1911.



A New Model.

At their new showrooms in High Street, Kensington, John Barker and Co., Ltd., have examples of the new Barker-Fafnir on view and ready for immediate delivery.

Tyres and Belts in Scottish Hill-climb.

Competitors who used Dunlop tyres and belts in the Glasgow M.C.C. hill-climb at Howwood, described last week, did uncommonly well, capturing amongst them four first places and three seconds, besides making fastest time in the touring class.

Lubricants for Racing.

Wakefield Castrol lubricating oil has been used in many recent successes on road and track. This oil is favoured by F. W. Barnes, the Zenith rider, who used it when he broke the Class E hour record with sidecar, and established records for fifty and 100 miles and two hours. It is marketed by C. C. Wakefield and Co., 27, Cannon Street, London, E.C.

A Leather Chain Belt.

Mr. R. Sleigh, Victoria Road, Ellistown, near Leicester, has sent us a sample of a leather chain belt which we illustrate. The sketch is self-explanatory, but it is perhaps advisable to point out



that the links are wholly composed of leather fastened together by screws. The patentee informs us that this design does not infringe on any other chain belt and gives satisfactory results.

SPARKLETS



Guide to the British Isles.

The 1912 edition of the "Michelin Guide to the British Isles" has been enormously improved since it was first published, and the addition of many small villages in which there are good hotels is a welcome one. Its list of tours, towns, hotels, repairers, and maps of towns and country are all of invaluable assistance to the motor cyclist. It is a most useful publication for the motor cycle tourist. The new French edition has also been considerably augmented and improved. Both publications may be had on application to the Michelin Tyre Co., Ltd., Sussex Place, South Kensington, S.W.

Trade Announcements.

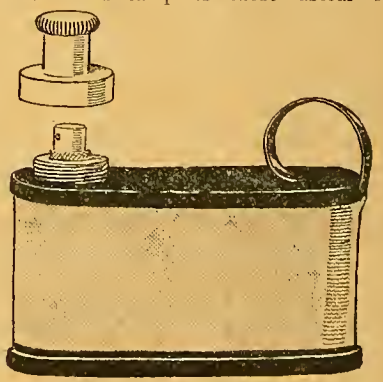
Owing to the rapid increase of the business of Messrs. Rushmore Lamps, Limited, further capital is required, and it has been considered advisable, in order to obtain this, to form a new company of the same name, with the result that the present company will go into voluntary liquidation. We are requested expressly to point out that the company is going into liquidation solely for the purpose of reconstruction, and that all debts will, of course, be paid in full.

Special Sidecar Tyres.

The North British Rubber Co., Ltd., have produced a tyre specially for use on sidecar wheels. It has been submitted to very stringent tests, both in the laboratory and on the road, and has been found satisfactory in every way.

A Handy Blow Lamp.

H. Taylor and Co., 21a, Store Street, Tottenham Court Road, W.C., have sent us a small blow lamp which we illustrate. This lamp is most useful for



small soldering jobs and is very simply constructed. All that is necessary is to remove the tubular wick-holder, fill the reservoir two-thirds full with methylated spirit, and apply a light to the burner. In a few moments an intensely hot flame issues horizontally from the small hole in the burner. The lamp is quite small and may be carried in the toolbag if desired.

"Efficient WHITSUN Equipment" —ideally found in the "Good LYCETT Lines."

—Make the Whitsun Holiday really enjoyable by seeing that your mount is well equipped with the following Equipment—items so essential to your comfort, convenience, and pleasure awheel.

—In the "Good Lycett Lines" you'll find every need most adequately catered for. Note these items:—

LYCETT'S "LYCO" PAN SEAT is unquestionably the most perfect saddle for comfortable and easy riding with it. No chafing or fatigue, its luxurious Anti-vibratory action eliminates all strain, shock, and jar.

LYCETT'S "LYSO" BELT is the acknowledged perfect Power-transmitter. Its scientific design ensures a clean easy drive, utilising every ounce of power the engine supplies.

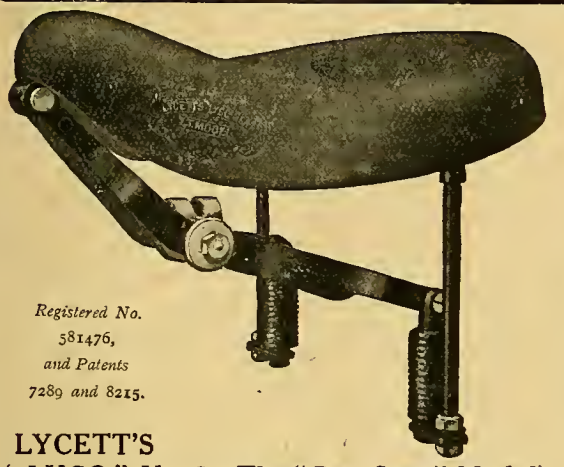
LYCETT'S "METAL-END" TOOL ROLL. The ideal tool carrier for silence, security, and accessibility. The metal ends prevent tools falling out, protect them and keep them in orderly arrangement.

LYCETT'S "ATTACHE" BAG is an essential luggage carrying item, capacious and convenient. It can be opened on carrier or removed complete in an instant as desired. No annoyance of straps to undo.

LYCETT'S CARRIER-SIDE BAG is very neat and compact bag for holding small tools and spares, with gusset front and patent lock which cannot jolt open. Fits securely on carrier by patent clips. No straps.

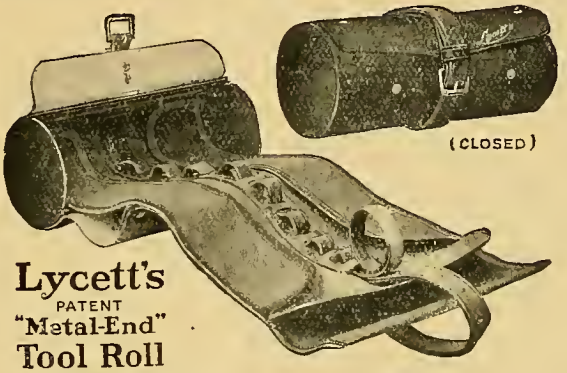
—Obtainable of all Agents, Garages, etc., or direct. Catalogue free per return.

LYCETT'S, "The Saddlery," Bromley Street, Birmingham.



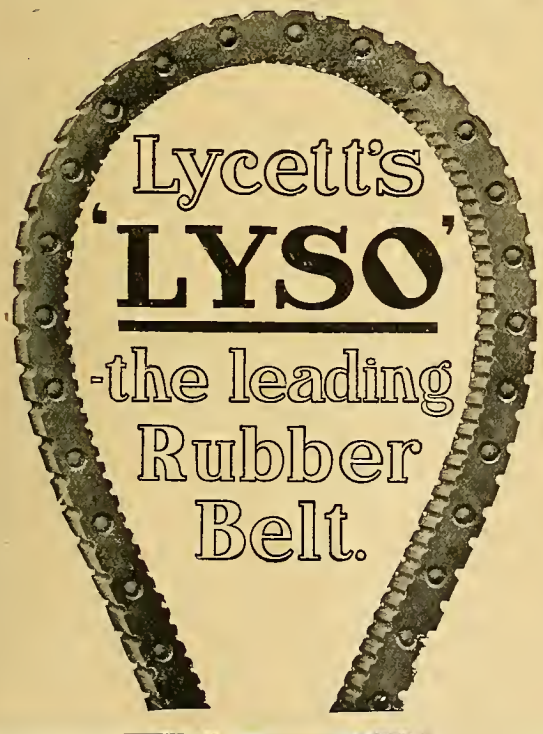
Registered No. 581476, and Patents 7289 and 8215.

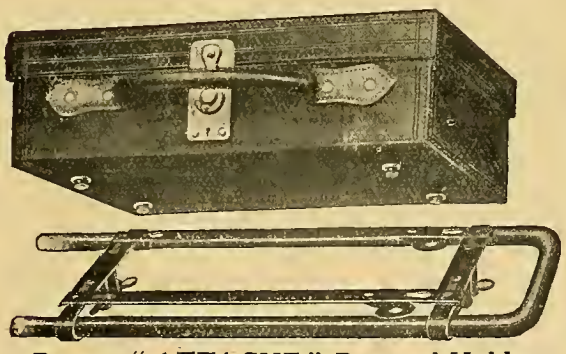
LYCETT'S "LYCO" No. 3—The "Pan Seat" Model.



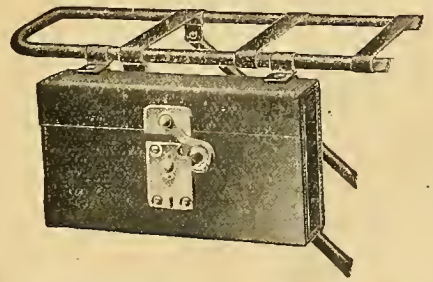
(CLOSED)

Lycett's PATENT "Metal-End" Tool Roll (OPEN)





Patent "ATTACHE" Bag and Holder.



LYCETT'S Carrier-Side Bag.

R.H.S.

In answering this advertisement it is desirable to mention "The Motor Cycle."

DO YOU WANT BARGAINS?

And at
Manchester Street,
Liverpool.

RELIANCE

CITY CYCLE AND MOTOR HOUSE,

THE GUARANTEE IS IN THE NAME.

Snow Hill, Birmingham.

AGENTS WANTED.

Everything for the Motor Car.

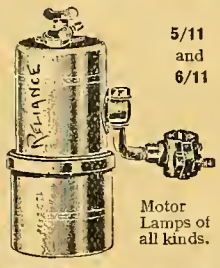
POUNDS WE SAVE YOU

Everything for the Motor Cycle.



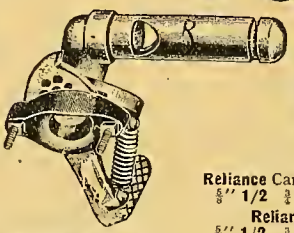
BELT FASTENERS.
All sizes, 5½d. each.

SEPARATE GENERATORS FOR MOTOR CYCLES.



5/11 and 6/11

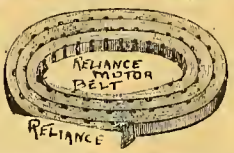
Motor Lamps of all kinds.



MOTOR CYCLE EXHAUST WHISTLES.

For motor cycles —all brass.

Single note 1/11½
Double note 3/11



Reliance Canvas and Rubber Belting
⅝" 1/2 ¾" 1/4 ⅞" 1/7 1" 1/11
Reliance Leather Belting
⅝" 1/2 ¾" 1/4 ⅞" 1/7 1" 1/11
We also supply Lyso, Stanley-Dermatine, Continental & Rawido Belts at lowest prices.

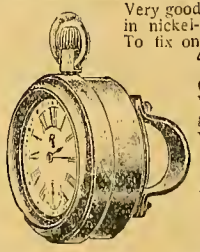
RELIANCE Frames.
RELIANCE Wheels,
Hubs, Spokes, Cones, Piston Rings, Bolts, Rims, Handle-bars, Sidecars, Tyres, and Tubes.
TRADE SUPPLIED.

SERPENTINE PATTERN HORN.



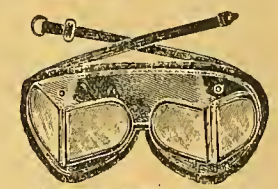
Gauze front, loud and clear, 7/11.
Triumph pattern, small size, 3/11.
Large size, 4/11.
Large variety of horns Hooters of all kinds.

MOTOR CYCLE WATCH & HOLDER
Very good timekeeper, in nickel-plated case. To fix on handle-bar, 4/9



Clocks and Watches in great variety.

Watch Holder only, 1/9 each.



All Rubber Goggles with spare glasses, 1/-; brown leather mask, **9d.**; best quality, **2/11** and 3/11 pair.

Reliance prices defy competition.

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WORKS APPLEGATE STREET LEICESTER

12/6 & 18/6.

NO MORE GOOD TYRES ON THE SCRAP HEAP.

Send your old tyres to us. Bursts and broken beads repaired by our Patent Process cannot fail.

Agents for
LEVIS, 2-stroke.
RUDGE-WHITWORTH.
TRUMP-J.A.P.
MOTOSACOCHE.
CASH OR CREDIT.
DELIVERY TO-DAY.

Write for Particulars.

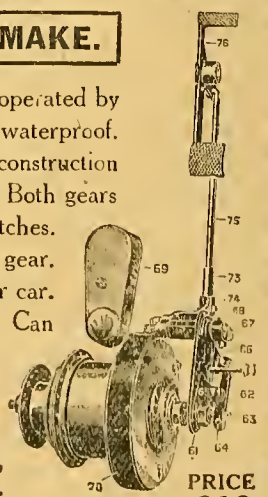
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An exceptionally popular and thoroughly successful

TWO-SPEED HUB

"MILLENNIUM" MAKE.

IT is centrally designed—operated by one foot lever—dust and waterproof. Its simple, straightforward construction renders mistakes impossible. Both gears controlled by friction clutches. Unimpaired efficiency on high gear. Makes control equal to motor car. Essential to sidecar machines. Can be fitted to almost any machine.



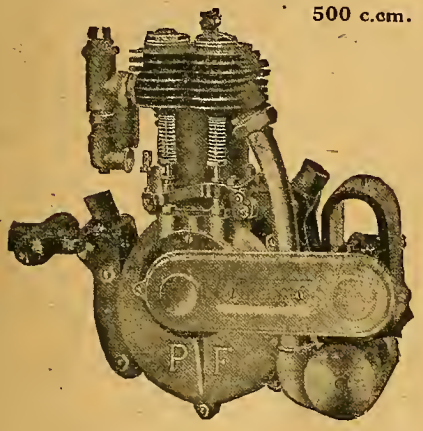
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London Showroom: 14a, Great Marlborough Street, W.

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WORLD RENOWNED
"PEUGEOT."

3½-4 h.p. T.T. Model.
500 c.cm.



For full particulars of Engines, Spare Parts, and "O.G." Adjustable Pulleys. Apply to

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"O G." Motor Works, Warwick Rd.,
Greet, BIRMINGHAM.



with the **VOLEX GIANT** 4½ volt (Patent applied for) **DRY BATTERY.**

Far superior to accumulators, always ready, does not deteriorate by keeping, gives 65 to 80 hours' light without renewing. Complete with satchel for fixing to frame of machine, motor head lamp, self-focussing lamp attachment, metal filament bulb, complete ready for use,

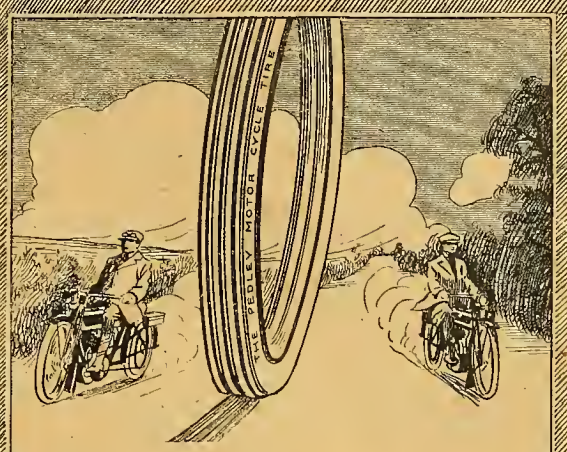
Price 20/- post free.

Send for our M. & E. Catalogue, giving full particulars of these lamps. The most interesting Catalogue of its kind issued.

Mention "The Motor Cycle."

WARD AND GOLDSTONE,
Contractors to H.M. Government.
SALFORD, MANCHESTER.
Telephone—7084-5-6 Central
Telegrams—Multum, Manchester.

Spare Volex Giant Refills, **4/6** each. The most powerful and lasting dry battery made. Ideal for ignition.



What the Judges said

in their report of the A.C.U. Trial, held on April 24th last under the heading of tire troubles:

"Four first class certificates were lost through this cause. It would appear to be highly desirable, in view of the greatly increased horse power developed by modern engines, that heavier tires should both be made for use on motor cycles and actually fitted to them as standard."

The above precisely confirms what we have been saying for the last two years—and actually practised.

Our tires are easily 50% stronger and heavier than any other standard tire on the market to-day.

They are not in any sense exaggerated cycle tires, but designed specially for motor cycles, and made to withstand the strains of high-powered modern engines, and endure long distance touring without giving the slightest trouble.

We do not make special tires for specific purposes to cover certain distances, and advertise the result as obtained on standard tires.

Tires selected at our agents are as good as any taken from our own stock, and altogether more reliable than tires specially made for competition purposes.

PEDLEY
3-RIB TIRES.

Send us a postcard for a section of the Pedley tire and see for yourself how very superior it is in every respect to other makes.

TIRE SIZES:
26 x 2¼in. 26 x 2½in. 26 x 2¾in. to fit 2¼in. rims.

Sole Makers:

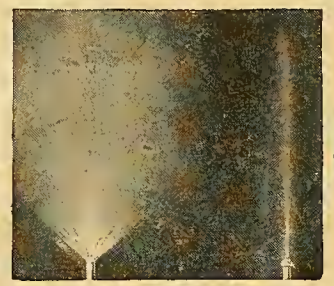
J. PEDLEY & SONS, LIMITED,
Great Charles Street, Birmingham.

LONDON STOCKISTS:
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NYE AND CO., 16, Hampstead Road, N.W.
H TAYLOR AND Co 21a, Store Street, W.C

5/-

Makes your 3½ h.p. into 4½ h.p.

or any power 15% to 25%.



This side shows Jones & Co.'s Patent Jet delivering petrol as vapour to engine.

This side shows your jet delivering petrol in liquid to the engine.

HOW?
By having Jones and Co.'s Patent Jet Petrol Atomiser fitted in exchange for your old jet. This patent delivers the petrol to engine in thousands of particles instead of in liquid.

WHY?
This causes the vapour to be properly exploded instead of burnt; saves the piston head from being carbonised, and gives at least 15% to 25% more power.

WHO SAYS SO?
Expert riders of world repute. Copies of testimonials free.

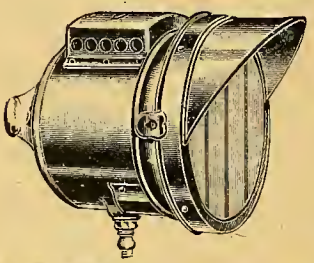
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Your money returned within 14 days if the jet does not improve your engine 15% to 25%.

ANY CARBURETTER
fitted. Send your old jet, or give exact particulars of your carburetter. *From any good Agent, or*

JONES & CO.,
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Rotax PILOT LAMP



English made.

A solid-built, one piece, brass or nickel-plated acetylene fitment. Fitted with powerful burner and Mangin mirror lens and non-dazzling glass. This lamp is undoubtedly of superior finish. You will find it pay to invest in one, in conjunction with a Rotax generator.

FROM YOUR AGENT

16/6

When you are thinking of fitting accessories to your Motor Cycle, remember that Rotax means reliability.

ASK FOR Rotax Accessories.
Wholesale only
43/5, Gt. Eastern St., London, E.C.

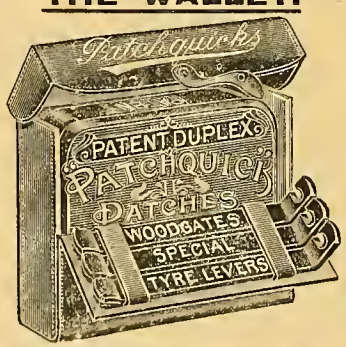
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USED IN FIVE CONTINENTS! FIXED IN FIVE MINUTES!

"PATCHQUICK" PRODUCTIONS.

THE MOTOR CYCLISTS' VADE MECUM.

THE WALLET.



CARRY YOUR OUTFIT IN THE 'PATCHQUICK" WAY.

These Outfit Wallets have created a furore in motor cycling circles.
Price, complete with tyre levers **3**/- each; without tyre levers, **2/6** each.
Outfits, **3**/- extra.

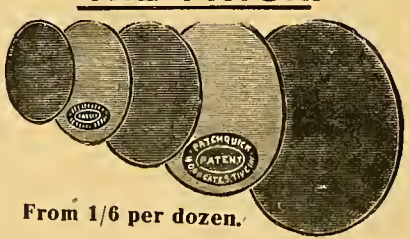
One of the most useful and novel accessories which have been brought to our notice."—*The Motor Cycle.*

The World's Premier Patch, known and appreciated from the Equator to the Poles. Simply apply the Patch with "PATCHQUICK FIX."

WE DO THE REST.

Beware of Counterfeits.
OTHERS IMITATE—WE INITIATE.

THE PATCH.



From 1/6 per dozen.

LISTS POST FREE.

BUY THE BEST—LEAVE THE REST.

WOODGATES BROTHERS,
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THE OUTFIT.



The world-renowned

No. 4 Outfit, price 3/- each.

This is the only Outfit the motor cyclist can wholly rely upon When it is a question of tyre repair, only the very best will serve his purpose. To carry a mediocre outfit is equivalent to carrying none at all.

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BEST VALUE.

IMMEDIATE DELIVERY from the LONDON AGENTS:

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EARLY DELIVERY:

MATCHLESS.

ACCESSORIES. REPAIRS.

THE MOTOR MAINTENANCE COMPANY

Established 1907.

184, Great Portland Street, W.

Tele{ phone: 4839 Mayfair. grams: "Motenance, London."

See that Security Sleeve ?



It overcomes the one disadvantage of the Butt-ended Tube—bursting at the ends. It is the feature of the **"Challiner" Patent Butt-ended Tube.** With it you have the security of the endless tube and the handiness of the butt-ended one.

The Security Sleeve is fixed to the rim by the winged out and bolt; the butt ends of the tube fit in it like a glove.

The centre of the Security Sleeve is a bulkhead of insulated canvas which makes *bursting of the ends an impossibility.*

'Challiner' Patent Butt-ended Tubes are burst-proof at the ends.

If a tyre fitted with this tube were inflated to bursting point, *the burst could not occur at the ends.*

The bulkhead keeps the Tube ends firmly in position; and being fixed to the rim directly opposite the valve, it prevents all 'creeping.' "Creeping" of the Butt-end Joint is what cause other tubes to burst.

Fit "Challiner's" to your mount now!

PRICES (complete with Sleeve)

26" x 2"	26" x 2¼"	(600 x 65 m/m) 26" x 2¾"	700 x 75 m/m
15/-	16/6	17/-	20/-

Sent post free on receipt of price.

Shrewsbury & Challiner Tyre Co. Ltd.,

MANCHESTER, LONDON, BIRMINGHAM.

MARTIN-J.A.P. Motor Cycles.

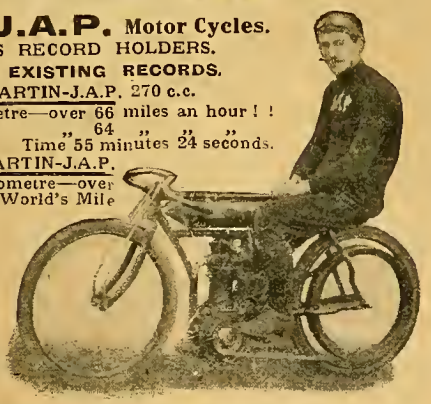
THE WORLD'S RECORD HOLDERS.

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CLASS A. 1¾ h.p. MARTIN-J.A.P. 270 c.c.
World's Kilometre—over 66 miles an hour!!
" Mile " 64 " " "
" 50 Miles Time 55 minutes 24 seconds.

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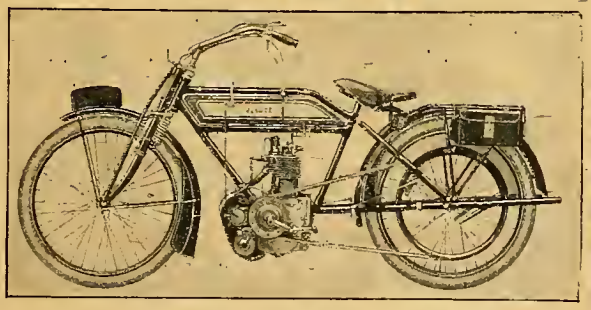


H. MARTIN & CO.,

Works: Leslie Grove, East Croydon Surrey

VELOCE

the RELIABLE.



2½ h.p. Patent 2-Speed in Crank-case. Mechanical Lubrication.

BIRMINGHAM-PERTH TRIAL. 352 Miles.

One minute in front of time.

BRONZE MEDAL.

THE HILL-CLIMBER,

Two Passengers—combined weight, 22 stones.

GRADIENT—1 in 7, Ratios—5 to 1 and 8 to 1 From Standing Start. Witnessed by J. Urry of *Bicycling News.*

For Agency, write at once—

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Motor Cycles and How to Manage Them.

The standard Handbook of the Motor Cycle. Fifteenth edition, revised and enlarged, now on sale. Price 1/- net. By Post 1/3.

Hints and Tips for Motor Cyclists.

Full of useful "wrinkles" with regard to the care and management of motor cycles. 3rd edition. Price 1/- net. By Post 1/2.

The Motor Cycle Route Book.

Contains best routes for the whole of the British Isles, 45 maps and speed limits Price 1/6 net. By Post 1/9.

Obtainable (with remittance) from ILIFFE & SONS LTD. 20, Tudor Street, LONDON, E.C., also from all Booksellers

The best machine

is the machine that embodies all that is best—the best engine, the best fitments, the best workmanship.
NO OTHER CAN COUNT.

TIME, TROUBLE, and MONEY have been lavishly spent in making THE ROYAL RUBY the BEST MACHINE of the year.

Its engine is the famous J.A.P. ; its magneto and plugs the Bosch ; carburetters, Brown and Barlows ; free engine and variable speed hub, Sturmey-Archer, Roc, Villiers, or Armstrong ; front brake, exhaust lift and magneto control, Bowden ; frame and fittings, Chater Lea ; tyres, Dunlop.

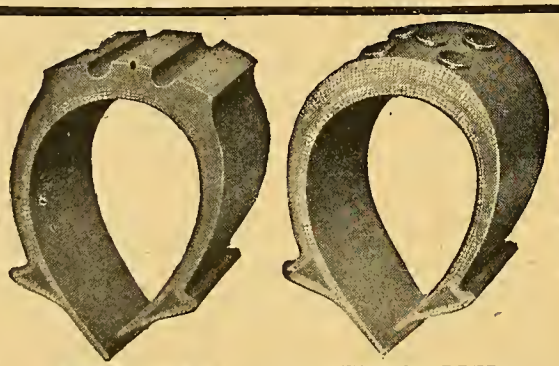
ITS PRICE? Doubtless you'll let us send you the catalogue which tells you everything.

IMMEDIATE DELIVERY.

ROYAL RUBY

THE "CLASSIEST" MACHINE OF THE SEASON.

THE ROYAL RUBY CYCLE CO.,
Royal Ruby Works, Great Ancoats Street,
MANCHESTER.



THREE RIBBED. STEEL STUDDED.

SPENCER MOULTON

MOTOR CYCLE TYRES

Made in three kinds—three-ribbed, steel studded, and standard heavy. The same excellence of quality obtains in these covers as in our well-known motor tyres.

Full particulars and prices on application to—

GEORGE SPENCER MOULTON & Co., Ltd.,
London: 77 & 79, Cannon St., E.C. *KINGSTON MILLS,*
Glasgow: 65 & 67, Bothwell St *BRADFORD-ON-AVON,*
Leeds: 68, Albion Street. *WILTS.*

STERNOL

H. C. NEWMAN,

the famous rider of the Ivy-Precision, who recently added to his many victories three firsts and fastest time of the day at Birmingham M.C.C. Hill Climb, writes :—

"During this year (1912) I have used nothing else but 'Sternol' and my successes have been very much greater, and more frequent than when I used other brands."

This should be a guide to YOU. *We will send you a free sample and name of nearest — agent on request. —*

STERNOL

56, Royal London House, Finsbury Sq., London, E.C.

E.H.C.

STOCK-TAKING CLEARANCE SALE

With the end of April comes the end of our half-year, and we wish to reduce the enormous stocks that are on hand.

There are close upon 100 Second-hand Motor Cycles left, and these are taking up room which should be occupied by 1912 Motor Cycles, A.C.'s, Morgan Runabouts, and other things that are on order; therefore, we want your assistance in disposing of the 100 machines above-mentioned. The way to help is to send for a list, and, when you get one, spot a machine to suit you, making us a cash offer, and we will try to take it.

During the past month we have sold close upon 100 machines to the Sunny Jims who were smart enough to pick up the bargains. We have plenty of same for everybody, but by Whitsuntide we shall have a lot of them cleared out. It is very easy to do if you will only try. You want a machine, and we want to sell you one, and what is easier than to fix up a deal at once. You can take 10% to 20% off our list price of many second-hand machines. If you are unable to pay the cash, you can have one on the deferred at one-third down and the balance by instalments. We also sell new machines at one-quarter down and the balance payable by instalments within twelve months. REMEMBER that we are out to shift the stuff, and that we want your assistance. Also, remember our system of business—this is simplicity itself. You send your money for a machine, and if the machine is not as specification, you are at liberty to return same within three days and have your money back in full, and we are at all times pleased to exchange. Don't forget this! You can't go wrong, and no one will treat you as well.

In going through the stock, we find that there is an enormous glut of new and second-hand accessories, which are taking up space that ought to be occupied with new machines. This tackle we want to shift. Amongst the most notable things are:

A quantity of Huot's H.H. Coils, brand new, but slightly shop-soiled, and these you can have at half a guinea a time to clear them out. There are also 250 pairs of Morecambe Covers, all sizes, which you can have at our usual prices: 15/11½, 19/11½, and 24/11½, less 10% during the sale. 300 Tubes at our list prices of 4/11½ and 8/11½; and Butt-ended Tubes, 12/11½, less 10% during the sale. Quantity of Second-hand Nab Seat-pillars; 5/6 a time will do the trick; better ones 7/6, shop-soiled ones 9/6. About 50 Pairs of Mudguards, listed at 3/11½; we are clearing them out at 3/3. 97 Handle-bars, all shapes and sizes, at the uniform price of 4/5½; Triumph pattern Bars, 4/9. Swan-neck Seat-pillars, 2/5½. Generators galore: New ones, 3/11½ and 4/11½; Second-hand ones from 2/6, not guaranteed, but one pennyworth of solder will cure them. Dozens of Lamps, self-contained, from 4/11½ a time; don't, however, expect a guinea one at the price, but they are all right. Separate Generator Lamps from 2/11½, Second-hand Bags, hundreds to pick from, 2/6 a time; new ones, see our list. 85 Brand New Wilby Saddles, 7/11½. 56 Second-hand Saddles, Brooks's, Lycett's, and other kinds, from 7/6 to 12/6. S.H. XL'All Spring Forks, 8/11½. A few 7½ft. lengths of ¾in. Rubber Belts, 6/11½. 100 Pairs of Goggles, 1/5½. In Gloves we have a matter of 100 pairs, real leather gauntlet gloves, 4/5½. A few wool-lined ones, for winter wear, same price. Special line of Belt Fasteners, whilst they last, 5½d. a time, post free. To those Sunny Jims who want a carrier on which to take out their best girls, we will sell one at 4/5½, but there is no insurance policy with them. At the same time, the lady will be far safer in a sidecar, and you can have one of these, while the sale lasts, at 10% off our list price. We have also got a lot of Second-hand Price's Stands. These have been gathering up during the winter, and we want to shift them. They are all right, and you can have them at the very low figure, whilst the stock lasts, at 5/5½. You can have new ones, 7/6. These are the genuine article, and marked "Ukantes." We have also a lot of Rubber Belting about, and we are knocking off 4d. per foot. If you look handy, you will get one before they are snapped up. We have also plenty of Suits of Overalls, and if 13/11½ is too much, you can have one at 12/11½, and, if THAT is too much, you can have a Holland Summer Suit at 7/11½. There are not many of these left, and if you want one, you will have to be quick about it. We are out to sell them while they last. We have plenty at a higher price, if you fancy giving 25/- for a 30/- suit. We have also 49 Coils, tremblers and non-tremblers; these are not guaranteed, and if you like to send us 2/11½ you can have one. The same remarks apply to Accumulators; you can have these at 1/11½ a time, whilst they last. We have a few Dry Cells, that have been used, and you can have them at the same price. We have also a few Carbide Carriers left, 1/8½. We have a box of Bowden Controls; these are the genuine article, slightly rusted, but no worse for that. You can have these at the ridiculous price of 6/11½, proper price 9/6. Dozens of Horns and Hooters, 1/5½ each. Pumps by the dozen, while they last, 11½d. Besides these, there is any amount of stuff, far too numerous to mention in the space at our disposal. If you will only say what you want, we will find you something to suit you. We can find you a motor bike for a matter of fifty bob—in fact, we have one or two that are complete and in running order, 50/- a time. Don't be alarmed, we are not going bankrupt, neither are we making a private arrangement with our creditors; but we are simply shifting the stuff so that we may have room in which to move about. If you have been to Morecambe you will know what we mean. We have £5,000 worth of stuff in our place, which in reality is only large enough to contain £1,000; and what between ourselves and the Canaries we have not room to stir. By the by, we have a few Car Lamps that we have just spotted; these will be all right for your Morgans, A.C.'s, and flying machines, etc., and you can have them at from half a guinea a set. There are not many of them, so, if you want one, let us have your order quick. We have still plenty of Tube and Belt Cases, which you can have at the ridiculous price of 5/5½. There are also a couple of dozen Fiery Magnets; these are all right, and will make a spark if you have any life in you, Three Guineas a time. To the Sunny Jims that ride chain drive machines, and do not have belts, we would remark that we have Tube Cases at 2/11½, which are dirt cheap at the price. All these are new, mind you! However, our compliments until next week.

Hitchen's, Ltd., Morecambe.

Wires: "Motor, Morecambe." Telephone: 112, Morecambe.

PAGETS PLAN

Pay for your Motor Cycle by Monthly Instalments.

There is now no need to wait until you have all the money before buying the motor bicycle you want. Instead of slowly saving up, and thus wasting all the glorious summer months in which you might be enjoying your bicycle, just take advantage of Pagets Purchase Plan and have your mount now. You merely pay one fifth down and make up the balance in 12 monthly instalments—or longer if desired.

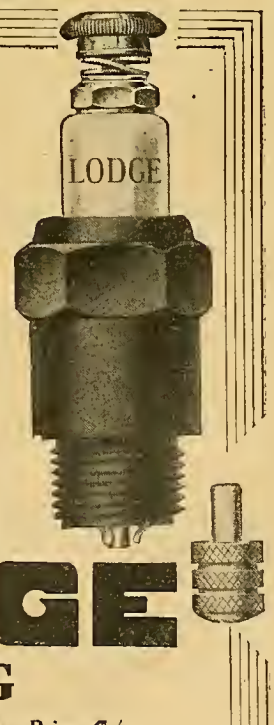
We can usually arrange Early Deliveries of well-known makes.

Write to-day for details.

PAGETS LIMITED, 10 & 11, Jermyn Street, London, W.

E.H.G.

For Maximum Power on your Motor Cycle use THE FAMOUS



LODGE PLUG

Obtainable everywhere. Price 4/-

English made and guaranteed.

LODGE BROS. & CO., Dept. E, New St, **BIRMINGHAM.**

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

The proprietors are not responsible for clerical or printers' errors, although every c re is taken to avoid mistakes.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII.
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION IX.
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

SELECT A

CERTAINTY

When deciding the firm with whom to place your order, choose a firm where you are certain of prompt delivery of a machine sure to satisfy at the lowest price with fullest guarantee. Such a firm is—

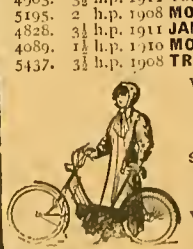


WAUCHOPE'S

NEARLY 300 NEW 1912 MODELS AND GENUINE SECOND-HAND MACHINES IN STOCK.

CALL AND SEE THE SHOW. GET OUR TO-DAY'S LIST, WHICH INCLUDES

5036.	2½	h.p. 1911	**MOTOSACOCHE**	£27 0
5009.	3½	h.p. 1911	T.T. **BRADBURY** ..	£32 0
5055.	3½	h.p. 1911	**L.M.C.**, variable gear	£35 0
5287.	2¾	h.p. 1911	**DOUGLAS**	£28 0
5006.	3½	h.p. 1910	T.T. **TRIUMPH**	£34 0
5470.	3½	h.p. 2-speed	**ROC**	£20 0
5066.	3½	h.p. 1911	**BRADBURY**, Mabon cl.	£37 10
5332.	5-6	h.p. 1911	4-cyl. **F.N.**	£33 10
5358.	2¾	h.p. 1912	2-speed **ENFIELD** ..	£47 0
4420.	3½	h.p. 1911	Free Engine **PREMIER**	£38 10
5441.	3½	h.p. 1911	**BRADBURY**	£35 0
5468.	3½	h.p. 1911	**BRADBURY**	£35 0
5475.	3½	h.p. 1911	**ZENITH-GRADUA** ..	£40 0
5476.	3½	h.p. 1907	**TRIUMPH**	£21 10
5327.	7	h.p. 1911	2-speed **REX DE LUXE**	£45 0
5384.	3½	h.p. 1910	Standard **TRIUMPH**	£33 10
5496.	3½	h.p. 1909	**BRADBURY**, free eng.	£27 10
5285.	2	h.p. 1910	**MOTO-REVE**	£20 0
4863.	3½	h.p. 1911	**CHATER-J.A.P.**	£32 0
4871.	3½	h.p. 1911	**BAT-J.A.P.**	£32 10
5420.	2¾	h.p. 1911	2-speed **ENFIELD** ..	£40 0
5424.	3½	h.p. 1912	F.E. **BRADBURY** ..	£48 10
5306.	3½	h.p. 1910	2-speed **P. & M.**	£42 0
5460	2¼	h.p. 1910	2-speed **F.N.**	£27 10
5341.	3½	h.p. 1908	2-speed **P. & M.**	£25 0
5493.	3½	h.p. 1911	2-speed **BRADBURY**	£42 0
5471.	3½	h.p. 1911	F.E. **BRADBURY** ..	£38 0
5293.	2¾	h.p. 1911	**ENFIELD**	£40 0
5499.	3½	h.p. 1910	2-speed **HUMBER** .	£32 0
4865.	2¼	h.p. 1911	**HANDY HOBART** ..	£25 0
5500.	3½	h.p. 1911	**P. & M.**	£50 0
4957.	8	h.p. 1910	**BAT-J.A.P.**	£35 0
4701.	2¾	h.p. 1910	**N.S.U.**	£18 0
4607.	3½	h.p. 1911	**KERRY-ABINGDON**	30 Gns.
5290.	5-6	h.p. 4-cyl.	**F.N.**	£33 10
4393.	3½	h.p. 1911	T.T. **PEUGEOT**	£27 10
4425.	3½	h.p. 1911	F.E. **PREMIER**	£37 10
4146.	3	h.p.	**N.S.U.**	£15 0
4226.	3½	h.p.	**MIDGET BICAR**	£20 0
4331	1¾	h.p. 1909	**MOTOSACOCHE**	£16 10
4631.	3½	h.p. 1909	**CHATER-J.A.P.**	£22 0
4784.	3½	h.p. 1911	T.T. **ARIEL**	£28 10
5333.	2	h.p. 1909	**MOTO-REVE**	£21 0
5438.	3½	h.p. 1909	2-speed **HUMBER** ..	£27 10
5253.	3½	h.p. 1908	Twin **PEUGEOT**	£18 0
5448.	3½	h.p. 1911	Cone Clutch **REX** ..	£35 0
3931.	5	h.p. 1911	Tourist **REX**	£30 0
5503.	5	h.p. 1910	**INDIAN** and Sidecar	£34 0
2965.	2	h.p. 1909	**MOTO-REVE**	£17 10
5485.	5	h.p. 1909	Tourist **REX**, F.E. ..	£28 10
5169.	5	h.p. Twin	**G.B.**	£20 0
4903.	3½	h.p. 1911	Tourist **REX**	£27 10
5195.	2	h.p. 1908	**MOTO-REVE**.....	£17 10
4828.	3½	h.p. 1911	**JAMES**	£32 10
4089.	1¾	h.p. 1910	**MOTOSACOCHE**	£18 10
5437.	3½	h.p. 1908	**TRIUMPH**	£26 0



WE MAKE THE MOST LIBERAL EXCHANGE ALLOWANCE IN THE TRADE.

9, SHOE LANE, FLEET STREET, LONDON, E.C.

Wires: "Opificer, London." 'Phone: Holborn, 5777

WHITSUN HOLIDAYS.

Owing to the Whitsun Holidays, the Issue of "The Motor Cycle" for May 30th will be closed for press earlier than usual. All copy and instructions for paragraph advertisements in this issue must therefore be in our hands not later than first post on Thursday, May 23rd.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may l addressed to numbers at "The Motor Cycle" Offic When this is desired, 2d. will be charged for registration and three stamped and addressed envelopes must be sen for forwarding replies. Only the number will appear i the advertisement. Replies should be addressed, "No ooo, c/o 'The Motor Cycle,' Coventry"; or if "London is added to the address, then to the number given, c/ "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown person may deal in perfect safety by availing themselves of ou Deposit System. If the money be deposited with "Th Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of th goods is three days; and if a sale is effected we remit th amount to the seller, but if not we return the amoun to the depositor, and each party to the transaction pay carriage one way. For all transactions exceeding £10 i value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with a Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication th t the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each ne by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

NEW 1912 Motor Cycles in stock, for immediate de livery.

TWO 3½h.p. Humbers, standard and 2-speed gears £47/10 and £52/10.

THREE 3½h.p. B.S.A.'s, standard, free engine, and 2-speed gears; £50, £56/10, and £60 respectively.

ONE Triumph, standard; £48/15.

ONE Royal Enfield, 2¾h.p., 2-speed; 50 guineas.

ONE 6h.p. Royal Enfield Sidecar Combination; £84

THESE we can offer for immediate delivery, being absolutely in stock, but of course being subject to being sold on reply.—Write, wire, or telephone for further particulars, catalogues, or booklets, to Turvey and Co., The Motor House of the North, Sunderland Tel.: No. 626.

1912 Free Engine Triumph, slightly soiled; £50 cash genuine bargain.—Pultney Corrie, Carlisle.

2¾h.p. N.S.U., 1910, good order, lamp, tools, etc. £25.—24, Cardigan Terrace, Heaton, Newcastle.

N.S.U., 2¾h.p., 1910 twin-cyl. lightweight, complete with lamp, generator, horn, etc., first-class condition; £25.—Below

TRIUMPH, 3½h.p., 1908, complete with lamp and generator, splendid condition; £27/10.—Below.

QUADRANT, 3½h.p., accumulator ignition, good condition; £15.—Dove and Co., Ltd., Bondgate, Darlington.

2¾h.p. F.N., B. and B. carburetter, accumulator, and Hellesen's cell, good condition; £8/10.—Pawson Eldon Lane, Bishop Auckland.

RUDGE, 1912, 5 weeks old, only done 450 miles tyres just soiled; bargain, £45.—Apply, Box 425 *The Motor Cycle* Offices, Coventry

1909 Rex, 3½h.p., Bosch, Amac, perfect condition will ride 50 miles to buyer; £20, no offers.—Jackson, Abbotsford Park, Monkseaton.

3½h.p. Minerva, built into low modern frame, B. and B., Palmers, French grey, all spares, £11/10.—Wilson, 6, Adelaide St., West Hartlepool.

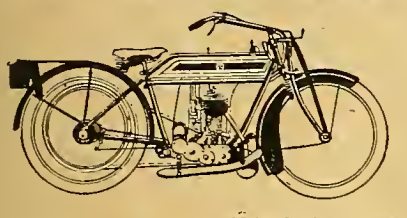
In answering these advertisements it is desirable to mention "The Motor Cycle"

The Halifax Motor Exchange

Largest Rex Dealers, 16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams, "Perfection."

BRAND NEW 1911 REXES.



	Makers' price.	Ours.
3½ h.p. Rex Tourist	43 guineas	**34 guineas**
3½ h.p. Free-engine	48 guineas	**39 guineas**
3½ h.p. 2-speed de luxe	57 guineas	**46 guineas**
5 h.p. 2-speed de luxe	60 guineas	**51 guineas**

All new and guaranteed. Exchanges liberally dealt with.

£3 to £5 DOWN

and 5/- weekly secures prompt despatch of

2½ h.p. **J.A.P.**, Clement-Garrard frame	£8 10
Twin **REX**, spring forks	£16 10
3 h.p. **QUADRANT**	£10 10
2¾ h.p. **KERRY**	£10 10
3 h.p. **HUMBER**, chain drive	£8 10
3½ h.p. Light Low **REX**, H.B. control	£12 10
2¾ h.p. **DE DION**	£10 10
2½ h.p. **J.A.P.**, spring frame, h.-b. control	£9 10
3½ h.p. **M.M.C.**, torpedo tank	£10 10

1912 DE LUXE SIDECAR

£6 6s.



"Exchange," with Continental motor cycle tyre	£5 5 0
"De Luxe" with best tyre, apron, foot mat	£6 6 0
Ditto, with reversible child's seat	£7 0 0
Ditto, with best coach-built body	£7 12 6

Improved Quick Detachable Joints, cranked extra strong back axle and spindle, tip up body, and caged ball races to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

Discount to trade Exchanges entertained.

GUARANTEED IN RUNNING ORDER.

1912 3½ h.p. Standard **BRADBURY**, NEW	£48 0
1912 Twin **REX** Sidette. In stock. NEW	£75 0
1911 3½ h.p. 2-speed **N.S.U.**, spring frame	£35 0
2¾ h.p. **MOTO-REVE**, almost as new	£27 10
1912 2-speed **REX** Junior, liberal exchange	£45 0
1910 2-speed 3½ h.p. magneto **CENTAUR**	£34 10
SCOTT 2-speed, Aug., 1910	£37 10
1911 2-speed 3½ h.p. **RUDGE**	£39 10
1910 7 h.p. Twin **REX**, HOT STUFF	£37 10
1910 5 h.p. Twin **REX DE LUXE**, special	£42 10
1910 5 h.p. **REX**, very fast, special machine	£29 10
1910 3½ h.p. **REX**, T.T. machine	£27 10
5½ h.p. Two-speed Twin **ROC**, magneto, Druids	£29 10
Brand New 3½ h.p. **REX**	£29 10
1908 3½ h.p. Magneto **REX**, spring forks	£22 10
3½ h.p. **REX**, h.-b. control, 26in. wheels	£12 10
4½ h.p. 4-cylinder **F.N.**, magneto, spring forks	£19 19
1909 5½ h.p. 2-speed Twin **REX**, good and reliable	£36 10
3 h.p. **QUADRANT**, low frame	£10 10
2¾ h.p. **KERRY**	£10 10

Easy Payments at Special Rates.

£7

deposit and 10 - weekly secures—

2¾ h.p. Mag. **MINERVA**, chain drive	£16 10
Magneto **TRIUMPH**, spring forks	£23 10
Four-cylinder **F.N.**, magneto	£19 19
3½ h.p. Magneto **REX**	£19 19
Twin **MOTO-REVE**	£19 19
2½ h.p. **REX** Magneto Lightweight	£16 10

TRICARS.

6 h.p. Twin **KERRY**	£14 10
5 h.p. W.C. 2-speed **HUMBER**	£19 10
5½ h.p. **REXETTE**, wants repairs, tyres good	£7 10
FORECAR, less tyres	£1 7 6

MOTOR BICYCLES FOR SALE.

TRIUMPH, £25, excellent condition, 1911 improvements, magneto, engine just overhauled.—107, Bedford St., Liverpool.

P. and M., 1911, not ridden 5 miles; owner abroad; 50 guineas.—Box L7,088, *The Motor Cycle* Offices, 20, Tudor St., E.C.

1910 3½h.p. Triumph, recently overhauled by makers, new Avon tyre; £30.—Cameron, Appleton Wiske, Northallerton.

1911 3½h.p. F.E. Ariel, variable gear, spring seat, Druid forks, excellent condition; £32.—65, Hilden St., Bolton.

SACRIFICE.—1909 3½h.p. 2-speed N.S.U., latest improvements; £23/10; single speed part.—40, Andover St., Sheffield.

BAT-J.A.P., 1910, 8h.p., twin-cyl., been little used, adjustable pulley; £35. — 19, Moorland Rd., Woodsmoor, Stockport.

B.S.A. (free engine), new Sep., mileage 610, perfect condition; £44; wanting stronger machine.—Wray Postmaster, Catterick.

MERRICK for Bradburys, Chater-Lea, Rudge, A.J.S., Matchless, etc.—Merrick's Stores, Listerhills, Bradford. 'Phone: 2439.

CLYNOS.—We are the largest contractors in the world, wholesale or retail. Write at once.—Hitchens, Ltd., Morecambe.

3½h.p. Ariel, late 1911, free engine, variable gear; £35; unscratched; take sidecar.—Kay, 95, Cor-Downing St., Manchester.

EXCELSIORS, A.S.L.'s Calthorpes.—Sole agents for these famous machines: Motor Exchange, 32, Downing St., Manchester.

N.S.U., 1910½, 4h.p. twin, 2-speed gear; £30, or close offer.—Motor Exchange, 32, Downing St., Manchester.

3½h.p. Quadrant, splendid puller, ready for road. Ukantes stands, brake, etc.; only £7/10.—Armitage, Clarendon St., Hyde.

1911 B.S.A., new August, little used, splendid condition, horn, F.R.S. lamp, spare valve, etc.; £40.—N. V. Sellers, Overdale, Keighley.

3½h.p. Free Engine Rover, as new, done 800 miles; expert examination; £38.—F. Hughes, 104, Ellesmere Rd., Lower Walton, Warrington.

DOUGLAS, 1912 model G., brand new, unsoiled; list price £41, will accept £38 for quick sale.—Box 558, *The Motor Cycle* Offices, Coventry.

RUDGE, late 1911 model, 3½h.p., fixed engine, just been overhauled by makers, excellent condition; accept £35.—Hughes, 100, High St., Hull.

WE have in stock 1912 6h.p. Rex de Luxe models, also 1912 3½h.p. 2-speed B.S.A.—Cairns and Co., Grimshaw St. Motor Exchange, Preston.

REX, 1910, 3½h.p., magneto, spring forks, head light, mirror, exhaust whistle, all spares; £27/10, or offer; appointment.—C., 1, Park St., Hull.

2¾h.p. Minerva, spring forks, h.b.c., new tyres, splendid condition, ready for road, stand, lamp; particulars; £10/10.—Williams, Bazaar, Corwen.

CLYNOS, wholesale and retail.—For certain quick delivery I cannot be beaten. Potter, the Clyno agent, Leicester Grove, Leeds. Tel.: 4046 Central.

1911½ Douglas, lamp, horn, and all spares, not ridden 400 miles, like new; for quick sale £28, no offers.—Elephant Hotel, Thatto Heath, St. Helens.

1912 J.A.P., 4h.p., practically new, Bosch, B. and B., Druids, studded Dunlops, sacrifice £37/15; sidecar, £4/5; trial.—Proud, Birkdale, Southport.

LADY'S Motoscocche, 2h.p., 1911, £28, perfect condition, only used summer months; owner buying higher power.—Rev. Morcom Taylor, Scarborough.

TRIUMPH, late 1909, Mabon, Whittle, Palmer cords, nearly new Chater-Lea sidecar; any trial or examination; £40.—Black, Copley Rd., Doncaster.

PHELON and Moore, in splendid order and condition, 2-speed, etc., low and reliable, £18; 1910 Douglas, perfect, £26.—Thistlethwaite, Grassington.

7h.p. Twin Rex, £37/10; 5h.p. 1910 twin Rex, £29/10; 3½h.p. magneto Rex, £19/19; 3½h.p. light low Rex, £12/10.—Motor Exchange, Westgate, Halifax.

TRIUMPH, 3½h.p., 1909, free engine, just overhauled, splendid order throughout, lamp, horn, spares; £35, or near offer.—Cattle, 50, Middle St., Driffield, Yorks.

MATCHLESS, 1912, 2¾h.p. lightweight, unridden, and unsoiled; catalogue price £42, will accept £38 for prompt sale.—Box 559, *The Motor Cycle* Offices, Coventry.

4h.p. Antoine, mechanical valves, Amac, h.b.c., variable jet, low build, spring forks, enamel, plating as new, perfect; £9/10.—16, Burton St., Gorton, Manchester.

1911 T.T. Triumph, new last August, ridden 1,000 miles, lamp, generator, horn, 3 spare belts, valve, punch, etc.; going abroad; first offer £36.—38, Chapel Lane, Wigan.

1912 6h.p. Rex de Luxe and Forward Sidecar, and spares, new month ago, too powerful for owner; cost £83, accept £72, or near offer.—Sharrock, Station Rd., Ossett.

REY

5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.

Tele: "Rey, Hampstead." Tel: 2678, P.O., Hampstead.

EXTENDED PAYMENTS

Taken on any Machine or Runabout.

NO EXTRA CHARGE ON MOST MAKES.

Following 1912 Machines for

IMMEDIATE DELIVERY

AND IN STOCK:

TRIUMPH T.T. Roadster, 1912	£60 0
RUDGE Multi-speed, 1912	£60 0
TRIUMPH Standard Model	£48 15
TRIUMPH 1912 F.E. Model	£55 0
RUDGE Standard Model	£48 15
RUDGE T.T. Model	£48 15
RUDGE F.E. Model	£55 0
CLYNO 5-6 h.p. 1912 2-speed Model	65 Gns
P. and M. 3½ h.p. 1912 2-speed Model	£65 0
B.S.A. 3½ h.p. 1912 2-speed Model	£60 0
B.S.A. 3½ h.p. 1912 Standard Model	£50 0
BRADBURY 3½ h.p. 1912 2-speed Model	£55 0
ZENITH. 6 h.p. Model	67 Gns
ZENITH 3½ h.p. Model	53 Gns
DOUGLAS L Lady's Model	£52 0
DOUGLAS J T.T. Model	£47 0
DOUGLAS G Standard Model	£41 0
BRADBURY Standard Model	£48 0
BRADBURY F.E. Model	£54 10
BRADBURY T.T. Model	£48 0
SINGER 3½ h.p. 3-speed Model	£58 10
LINCOLN ELK 3½ h.p. Standard Model	£34 5
HUMBER 3½ h.p. 2-speed Model	£52 10
BAT 6 h.p. Standard Model	£58 0
SINGER 2-speed 4 h.p. Sidecar Model	£65 0
ZENITH 8 h.p. Model	69 Gns
DOUGLAS Model K	£50 0
BRADBURY 2-speed Model	£55 0
B.S.A. F.E. Model	£56 10

G. and N. Runabout in four weeks.

Any other makes on application.

TRADE SUPPLIED WITH VARIOUS MAKES. LIBERAL DISCOUNTS ALLOWED.

Machines at Bargain Prices to Clear.

2011.	**F.N.**, 1911 model, 6 h.p., like new	£38 0
2047.	**F.N.**, 2½ h.p., 1911, 2-speed gear	£26 0
1955.	**F.N.**, 4-cyl., 6 h.p., good order	£35 0
1906.	**F.N.**, 4-cyl., 1911, with sidecar	£35 0
1966.	**F.N.**, 2¾ h.p., magneto, splendid order	£15 0
2064.	**F.N.**, 2½ h.p., 1910, 2-speed	£24 0
1858.	**F.N.**, 2½ h.p., 2-speed, 1910½	£25 0
1968.	**REX**, 1910½, 3½ h.p.	£25 0
1893.	**REX**, 6 h.p., twin, good order	£10 0
2066.	**J.A.P.-CHATER-LEA**, 4 h.p., 1911	£29 0
1967.	**RUDGE**, F.E., 1911, splendid order	£39 0
2146.	**DOUGLAS**, 1910, fine order	£24 0
1640.	**ZENITH**, 1911, 3½ h.p., good order	£41 0
2063.	**F.N.**, 4-cyl., nice order	£25 0
2135.	**ZEDEL** Twin, 6 h.p., Chater fitting	£22 0
	MILLFORD Spring Wheel Sidecar, cane, 1911	£8 0

All Accessories included on S.H. at the price advertised.

BAT P. & M. two-speed gear, new £10 0



THE

£4 - 10 REY Sidecar £3 - 10

With Hutchinson or Michelin 26 x 2¼ tyre and tube, 30/- extra.

The famous "REY" EXHAUST WHISTLE now reduced to 12/6 each. Triumph standard type.

The "REY" LEATHER BELTING outlasts two of any other makes. Price 2/- per foot.

—— SPECIAL DISCOUNTS TO TRADE. ——

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

REY

5, HEATH STREET, HAMPSTEAD

Caught on!!

OUR REED CANE BODIES

have undoubtedly hit the mark.

Undoubtedly this class of cane is far superior and more classy than ordinary cane or wicker work, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

Model E



£7 10s.

Model F



£8 8s.

OUR POPULAR MODELS ARE GOING STRONG.



Model de Luxe.—£6 5s.



Model C.—£7.



Model E.—£7 5s.



Model D.—£8.

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID. Send for list.

MISCELLANEOUS BARGAINS.

4½ h.p. Aster Engine, water-cooled	£4 10
4½ h.p. Bucket Engine, water-cooled	£4 10
2 h.p. Stationary Engine, water-cooled	£4 10
Leamington Passenger Chair, new	12/6
Cocoanut Fibre Sidecar, foot-mats	3/-
Albion Clutch, fits Triumph	47/6
New Screw-cutting Lathe, 4in. centres	£8 10
Brooks's B105 Saddle	10/6
Brooks's B130 New Saddle, 1912 model	14/6

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane, HALIFAX (Two minutes from G.P.O.)

Telephone 919.

MOTOR BICYCLES FOR SALE.

F.N., 1¾h.p., magneto, fitted Brown and Barlow, new belt, new Avon back, Michelin front, lamp, many spares, in good condition; £12.—Ireland, 21, Thurstane St., Hallwell, Bolton.

3½h.p. 1911½ Triumph, all spares, lamp and horn; cost £52, will accept £40; also 2¼h.p. lightweight motor cycle, in good order, £10.—Allen Bros., Wellington Rd. South, Stockport.

1911 P. and M., splendid condition, nearly new tyres; owner made clean ascent up Staxton Hill, which is 1 in 2¾ gradient, on this machine; price £50/10.—10, Richmond Av., Huddersfield.

£17, cost 52 guineas.—3½h.p. twin Werner, 17½in. frame, spring forks, pedals, footrests, foot brake, adjustable pulley, Obach ignition, condition equals new.—23, White Cross Rd., York.

1912 3½h.p. T.T. Rudge, fitted with extra large tank and turned out special for T.T. Race, done 50 miles only; first cheque £44. — Anderson, 846, Chester Rd., Stretford, Manchester.

TRIUMPH. 1907, magneto, 1910 carburetter, h.b.e., adjustable pulley, Dunlop tyres, good condition, recently overhauled; £18 for quick sale; bought new machine.—Clymer, 98, King St., Manchester.

3h.p. Griffon, Zedel engine, just overhauled, m.o.v., h.b.c., lamp (separate generator), new rear tyre, carrier, stand, Whittle belt; cheap for quick sale.—Greenwood, 143, North Rd., St. Helens.

3¼h.p. Chater-Lea, good tyres, new tubes, Brooks pan saddle, quite new, Advance pulley, adjustable jet carburetter, low, wants re-wiring; bargain, £6/10. — Chorlton, Mayfield, Kensington St., Hyde.

7-9h.p. Twin Peugeot, Bosch magneto, adjustable pulley, almost new tyres, belt, perfect order, low dropped frame, exceedingly fast, with Chater-Lea sidecar, good tyre; £27/10; sell separate.—Jones, 17, Morven Grove, Southport.

FOR Sale, H. D. Shaw's 7h.p. Indian, in fully touring condition, with all racing spares, including full set of sprockets, spare cylinders, etc.; £50, or offers.—For full particulars apply, H. D. Shaw, Harris St. Works, Bradford.

SINGER Lightweight, early 1911, Palmer back tyre (almost new), Clincher front, lamp (unused), mirror, watch, carrier, Brooks saddle, spare valve, plug, tyre, in first-class condition; £25, or nearest cash offer.—Winterbottom, The Wells, Trimmingham, Halifax.

GREAT Sale of motor cycles.—3½h.p. Rex, £7/10; 4h.p. Chater-Lea, magneto, spring forks, B. and B., £12; 3h.p. Triumph, £9; 1909 Douglas, £18/10; 1911 Kerry-Abingdon, £28; 5-6h.p. Rex, 1909, twin-cyl., free engine, and sidecar, £25, worth £40; 1908 Triumph, new condition, £25; P. and M., nearly new, 2-speed, free engine, £37/10; we have about 60 second-hand motor bikes in stock, consisting of 1907, 1908, 1909, 1910 Triumphs, prices from £15; several Bradburys, Singers, Moto-Reves; all machines sold are warranted in good order; sidecars from 50/-.—The Motor Cycle Exchange, 160, Young St., Sheffield.

NORTHERN Depot Ltd., "Everything Motorish," Leece St., Liverpool.—Motor cycle exhibition for Whitsun. Brand new 1912 models in stock; Cob, standard and clutch Kerry-Abingdons; 8h.p. 2-speed Rex-Jap; 3½h.p. clutch Rex-Jap; Bradbury, belt driven, 2-speed, and adjustable pulley; clutch Triumph; standard Douglas. Exceptional bargain, 1912 clutch Kerry-Abingdon, shop-soiled, full makers' guarantee, £48. For delivery in one week, Clyno and Canoelet, also A.C. Sociable; book now; Zebra 2-seaters, sole agents; very special bargains. Crash dust suits, jackets, and leggings, 13/6; mica face shields, 1/3; wire wheel cleaning brushes, 1/-; Midlemore D.L. saddle, 15/-, new, off Clyno; Cowey, for A.C.; every known accessory of any consequence actually in stock. See also advts under Belts, Tyres, Exchange, Sidecars.

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

AJ.S., Model B., 2-speed, in stock; 44 guineas.—Taylor, Oakeswell, Wednesbury.

1912 Triumph Tourist Trophy Roadster; exchanges entertained.—Woodfin, Tarvin.

SCOTT.—Once a Scott, always a Scott; 1912 model for immediate delivery.—Moss, Wem.

TRIUMPH, 1911, standard, new June, in excellent condition; £32/10.—Murray, Rugeley.

BRADBURY, 1911, equal to new; trial by appointment; £32.—Heath, Congreve, Penkridge.

RUDGE, new multi-speed model, for immediate delivery; best offer accepted.—Moss, Wem.

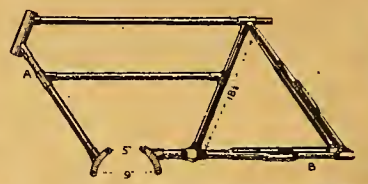
BRADBURY, 1910, 3½h.p. (1911 cylinder), take sidecar; what offers?—Best, Whitaker Rd., Derby.

1910 Bradbury, very good condition, will take sidecar; what offer?—Best, Whitaker Rd., Derby.

3h.p. Peugeot, Amac, h.b.c., low built, new Clinchers, torpedo tank; £12.—Norris, 92, Wellesley St., Hanley.

LATE 1909 Triumph, in grand condition, most carefully used; £28.—Constable, Willenhall Rd., Bilston.

£6/10.—2¼h.p. L.T. Clyde, Palmers, adjustable pulley, stand, horn, running order; bargain.—Trevethan, Rhyl.



MOTOR CYCLE FRAMES.

We have a quantity of frames by well-known maker.
Price 32/6 each.
Rigid forks, **7/6** extra. Druid forks, **45/-** extra.
Enamelled and plated in first-class style.

"IN STOCK."

We have the following new machines actually in stock.

1912 Multi **RUDGE**	£60 0
1912 Standard **RUDGE**	£48 0
1912 3½ h.p. **NEW HUDSON,** 3-speed	57 Gns.
1912 2⅞ h.p. **NEW HUDSON,** 3-speed	47 Gns.
1912 3½ h.p. **HUMBER,** 2-speed	50 Gns.
1912 3½ h.p. **BRADBURY**	£48 0
1912 3½ h.p 2-speed **BRADBURY**	£55 0
1911 3½ h.p. **PREMIER,** 2-speed	£48 0
1911 3½ h.p. **PREMIER,** Armstrong 3-speed	£46 10

NEW 1912 MACHINES IN STOCK.

3½ h.p. **MULTI-RUDGE**	£60 0
3½ h.p. 3-speed **NEW HUDSON**	57 Gns
2¾ h.p. 3-speed **NEW HUDSON**	47 Gns
3½ h.p. **RUDGE,** fixed gear	£48 0
3½ h.p. **HUMBER,** 2-speed model	£52 10
1912 3½ h.p. **BRADBURY,** single-speed	£48 0
1912 3½ h.p. **BRADBURY,** 2 speeds	£55 0

SINGLE-CYLINDER REXES.

1910 3½h.p., fine goer	£27 0
1910 3½ h.p., extra good	£23 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p 1908 Featherweight Rex, Bosch mag.	£17 0

TWIN-CYLINDER REXES.

1906 5-6 h.p. Twin Rex	£16 10
5-6 h.p, Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, 2 speeds, M.O.V.	£48 0
5-6 h.p. de Luxe, 1908, 2-speed model	£28 0
5-6 h.p. de Luxe, 1908, 2 speeds, special	£29 10

OTHER MAKES.

1910 **P. and M.,** 2 speeds, fine goer	£32 0
1909 **MOTO-REVE,** twin engine, magneto, Druids	£20 0
1910 8 h.p. **BAT,** M.O.V., 2 speeds	£45 0
1911 Lady's **HOBART,** Armstrong 3-speed	£36 0
4½ h.p. **N.S.U.,** Bosch magneto, h.b. control	£21 0
3¾ h.p Twin **PREMIER,** fine machine	£25 0
1911 2¾ h.p. **MOTOSACOCHE,** magneto	£27 0
3½ h.p. **L.M.C.,** 1910 model	£25 0
3½ h.p. **MINERVA,** Bosch magneto, Amac.	£22 0

SIDECAR COMBINATIONS.

8 h.p. **BAT,** 2 speeds, Millford sidecar	£50 0
5-6 h.p. 2-speed 1908 **REX** and sidecar	£33 0
7-9 h.p. 2-speed **REX** and sidecar	£53 0

All fitted with magneto and spring forks.

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3 h.p. **MINERVA,** vertical, M.O.V.	£12 0
3½ h.p. **EXCELSIOR,** Amac, h.b. control	£10 0
3 h.p. **REX,** vertical engine	£9 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

3 h.p. 1908 **REX,** Bosch magneto	£17 0
5-6 h.p. Twin **REX,** spring forks, h.b. control	£16 10
4½ h.p. Twin **N.S.U.,** Bosch magneto	£21 0
Twin-cylinder **MOTO-REVE,** magneto, Druids	£20 0
3½ h.p. **MINERVA,** Bosch magneto, M.O.V.	£22 0

CARS AND TRICARS.

4½ h.p. **HUMBER** Tricar, 2 speeds, wheel steering	£19 0
5 h.p. **HUMBER** Car, 2-seater, good goer	£22 0
5 h.p. **REXETTE,** Oppermann 3 speeds	£18 0
Duocar, Bosch magneto	£48 0

MISCELLANEOUS BARGAINS.

1912 B. and B. Carburetters, variable jets	28/6
1912 B. and B. Carburetters, single jet	27/-
1912 Senspray Carburetters	28/6
Camel 1in. Rubber Belting per foot	1/3
Fulford Castor Wheel Sidecar	£5 0
Lycett's Carrier Toolbags (new)	7/6
Sidecar Lamps, show red light behind	7/6
Trailer, 26in. wheels	25/-
New Toolbags, 9 × 6 × 3½in.	4/6
Sidecar Aprons, green or red, with studs	7/6
New Lycett's Tubular Carriers	4/11
Longuemare Carburetters	5/-

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19, 21, 23, 25, Hopwood Lane, HALIFAX (Two minutes from G.P.O.)

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COLMORE DEPOT
BIRMINGHAM

Appointed Official Repairers to the Auto Cycle Union.

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at
BIRMINGHAM.

FOR IMMEDIATE DELIVERY.

1912	**DOUGLAS** G	£41 0
1912	**ENFIELD**, 2¾ h.p.	£52 10
1912	**ENFIELD** Sidecar, 6 h.p. combination	£84 0
1912	**NEW HUDSON**, 3½ b.p.	£59 17
1912	**RUDGE**, free engine	£56 0
1912	**MATCHLESS**, 8 h.p., No. 7	£73 10
1912	**PREMIER**, 3-speed	£58 0
1912	**PREMIER**, fixed engine	£47 10
1912	**MACBETH**, Armstrong 3-speed	£55 0
1912	**PREMIER**, 2½ h.p., a most economical mount	£36 0

EARLY DELIVERY OF THE FOLLOWING. BOOK NOW!

SCOTTS and DOUGLAS K.

All with J.A.P. Engines. — Enfield, Bat, Chater-Lea, Matchless — Special passenger models.

SECOND-HAND STOCK. TO BE CLEARED.

If you want a machine of any class or of any price, just write us and tell us your ideas. We cannot publish a list of all our stock in detail, for space reasons, but we have machines of every sort ready.

6 second-hand 3½ h.p. **Triumphs** from £20 to £40
5 „ 2¾ h.p. **Douglas** from £23 to £30
2 „ 3½ h.p. **Premiers**, £36 and £38
2 „ 3½ b.p. **Humbers**, £34 and £37
3 „ 6 h.p. 4-cyl. **F.N.**, £15, £20, £25
1 each „ 3½ h.p. **Brown, Kerry, Alldays, N.S.U.**, £20 to £30
1 „ „ 3½ h.p. **Zenith, Bradbury**, and **P. and M.**, £28 to £38

SPECIAL TO-DAY.

ROYAL ENFIELD, 2¾ h.p., twin 2-speed lightweight. Just delivered. A fine little machine. Price 50 guineas.

SPECIAL THIS WEEK.

PREMIER, 3½ h.p., with 3-speed gear (Armstrong). Price £58.

This is a splendid machine. Can be advantageously used for either solo or sidecar. The gear is safe and reliable, and the machine is, as every motorist knows, one of the best that Coventry produces.

COLMORE DEPOT,
31, Colmore Row, and
49, John Bright Street,
BIRMINGHAM.

MOTOR BICYCLES FOR SALE.

MOTOSACOCHE, 1911, 2½h.p., practically new, run about 300 miles, free engine, magneto, Palmer tyres; £28.—Haydon, 24, Vicarage Rd., King's Heath, Birmingham.

B.S.A., 2-speed and clutch models in stock; why wait for delivery; first cheque secures one of these famous mounts.—Official agent, Newell, Lozells Rd., Aston, Birmingham.

1912 New Singer, free engine, Dunlops, £55 model, delivered this week guaranteed; first cheque for £52½ secures; delivered free, horn and accessories fitted. —Holt, Motors, Leamington.

1911 Triumph for sale, free engine, fully equipped, will stand any test, price £42/10; also Milford sidecar, in good condition, price £8. — Apply, 75, Northumberland Rd., Coventry.

1912 Rover, free engine, delivered April, only ridden 400 miles; £48/10, bargain; buyer can have the option of a 1912 Montgomery sidecar at a special low price.—Beck, Chapel St., Rugby.

TRIUMPH, 1908, guaranteed perfect, new Clinchers, engine overhauled Triumph Works, lamp, horn, and spares, take two anywhere; £25/10.—Apply, 17, Reservoir Rd., Edgbaston, Birmingham.

1912 N.S.U., 3h.p., twin, free engine, 2-speed, brand new, advertiser paid £5 deposit, cannot take delivery, unforeseen circumstances; will sacrifice deposit.—217, Heathfield Rd., Handsworth, Birmingham.

1912 Triumph standard, Brandbury standard, free engine and 2-speed, Rudge free engine, in stock; also Arno, 3h.p., soiled, £32; sidecars from £5/10.—A. E. Clare 364, Moseley Rd., Birmingham.

VINDEC Special, 4½h.p., free engine, Bosch magneto, B. and B. carburetter, everything equal to new, just overhauled at a cost of £5; bargain, £26.—327, Garrison Lane, Small Heath, Birmingham.

1912 Scott, new February, complete, F.R.S. lamp, horn, whistle, speedometer, spares, guaranteed perfect; cost £80, sacrifice £60; selling through illness. —O. Widdowson, 46, Middle St., Beeston, Notts.

1911 Model de Luxe Rex, 5h.p. twin, free engine, 2-speed, perfect sidecar machine, practically new, only ridden a few hundred miles; too powerful for owner; cost £63, sacrifice £42.—54, Lozells Rd., Birmingham.

ZENITH 3½h.p. Gradua, Triumph F.E., Singer 4h.p., 3½h.p., and lightweight, Rudge-Whitworth T.T. and 3½h.p., F.E., all 1912, in stock; two 1911 standard Triumphs and other second-hand motors.—Midland Cycle Co., Coalville.

3½h.p. Rex, 1909, Bosch, 1911 B. and B., adjustable pulley, Dreadnought back, Lyso, Rich spare tube, spare belt, stand, carrier, head lamp, generator, good condition, take two over Stoneleigh Hill; £20.—541, *The Motor Cycle* Offices, Coventry.

3½h.p. T.T. Bradbury, 1911, 1912 improvements, powerful head lamp, exhaust whistle, horn, new back tyre, new belt, spare tube, belt, valve, full set tools, been carefully ridden, and in good condition, a sound, speedy, and reliable machine; £35.—Bulford, Estate Office, Gantby, Lincoln.

1911½ Triumph, free engine, horn, handle-bar mirror, adjustable cross-bar, trouser guard, exhaust whistle, two new Bosch plugs, new belt, bought November, not ridden till January last, done about 500 by Cowey, absolutely perfect, unscratched throughout, just like new machine, tyres perfect; any trial; £48.—E. G. Tomblings, Little Bytham, Grantham.

WOODGATE, for immediate delivery of all models of Singers, Triumphs, Enfields, Rudges, and Ariels, and Canoelet and J.J.W. sidecars; also for a splendid range of second-hands, varying from £5 to £45. Get my prices and save money; exchanges and payments arranged. — J. J. Woodgate, the Motor Cycle Depot, Small Heath, Birmingham. 'Phone: 372 Victoria.

MATCHLESS, No. 7 model, the best sidecar machine, 8h.p. twin, orders now booked, early delivery; Triumph, 1909, free engine, new heavy Kempshall on back, Lucas lamp, all in good order, £33; bargain, 3h.p., Chater-Lea fittings, M.M.C. engine, Druid forks, spring seat-pillar, and handle-bar, 1911 B. and B., in excellent running order, £9; sidecars, several second-hand, in good order, cheap.—A. D. Powell, Matchless agent, St. James', Northampton.

SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

1912 Bradbury, 2-speed, belt drive, in crate; £55 cash.—Parker and Son.

1911 Premier, splendid condition, £10 spares, including lamp, speedometer; £40.—Parker and Son.

1911 T.T. Triumph, excellent condition, Dunlops, mirror, horn, spare valve; £40.—Parker and Son.

1911 Free Engine Quadrant and Sidecar, shop-soiled; £53.—Parker and Son, St. Ives, Hunts.

CHIEF Triumph Agents for Cambridge (early deliveries), King and Harper, Cambridge.

2½h.p. Jap-Chater-Lea, long bar, Palmers; £10.—W.S., 2, Littledale St., Kempston, Bedford.

1912 Premiers and Calcotts in stock, also 1911½ new Premier, 3½b.p., Dunlops, £40.—Fitch, Chatteris.

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1912	**DOUGLAS**, Model G	£41 0
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1912	**NEW HUDSON-J.A.P.**, 3-speed	£59 17
1912	**NEW HUDSON**, 3-speed	£59 17
1912	**B.S.A.**, 2-speed	£60 0
1912	**B.S.A.**, free engine	£56 10
1912	**B.S.A.**, free engine	£56 10
1912	**PREMIER**, 3½ h.p., 3-speed	£58 0
1912	**PREMIER**, 3¾ h.p., twin, 3-speed	£63 0
1912	**PREMIER** Lightweight	£36 0
1912	**RUDGE**, free engine	£55 0
1912	**N.S.U.**, 6 h.p., 2-speed, passenger	
1912	**MACBETH-PRECISION**, stand'rd	£45 0
1912	**PRECISION**, free engine	£53 0
1912	**MATCHLESS**, 3½ h.p., 3-speed	£58 6

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1909	**HUMBER**, 2-speed, free engine	£25 0
1910	**DOUGLAS**, single-speed	£25 0
1910	**DOUGLAS**, single-speed	£27 10
1909	**TRIUMPH**, single-speed, a beauty	£28 0
1911	**SCOTT**, delivered November	£60 0
1911	**PREMIER**, free engine	£30 0
1908	**N.S.U.**, 3½ h.p., pulksidecar	£24 0
1912	**BRADBURY**, as new	£37 0
1911	**A.J.S.**, single-speed, trials only	£30 0
	REX, 3½ h.p., accumulator, good goer	£7 0

EXCHANGES.

SPECIAL THIS WEEK.

1912 **RUDGE**, free engine, three weeks old, done 50 miles, Lucas K. of R. lamp, exhaust whistle, Jones speedometer, horn, mirror tools, and **Montgomery** sidecar; all guaranteed as new turnout; sacrifice £60.

EXCHANGES.

We have the best stock in Manchester. CALL and convince yourself that "We are the people for season's mount, New or Second-hand."

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MOTOR BICYCLES FOR SALE.

NEW Hudsons; delivery from stock.—Sole agents for Suffolk, T. H. Nice and Co., Bury St. Edmund's, and Ipswich.

PREMIERS, all models; delivery from stock.—Suffolk agents, T. H. Nice and Co., Bury St. Edmund's, and Ipswich.

TRIUMPHS, Humber, Bradbury, B.S.A., Rudge, new and second-hand, also sidecars.—T. H. Nice and Co., Bury St. Edmund's, and Ipswich.

7h.p. 1911 Peugeot-Chater-Lea, excellent order, magneto, etc.; trial; accept £28.—Straker, 72, Jesus Lane, Cambridge.

MOTO-REVE, 2¾h.p. twin, magneto, perfect condition; £17, first cheque secures.—Burrel, Church Rd., Limbury, Luton.

DE DION, genuine, 3½h.p., Chater-Lea fittings, thoroughly reliable, excellent condition; £20.—G. E. Foster, Kempston, Beds.

TRIUMPH, 1912, free engine; £55; in stock; immediate delivery.—Triumph agents, Robinson's, Green St., Cambridge.

1911 F.E. Triumph, ridden 1,600 miles; only £42.—Triumph agents, Robinson's, Green St., Cambridge.

DOUGLAS, 1910, complete, good condition; £25.—Robinson's, Green St., Cambridge.

HUMBER, 1912, 3½h.p., 2-speed, in stock, no waiting; £52/10.—Robinson's, Green St., Cambridge.

HUMBER, 1912, 2¾h.p. twin, in stock, no waiting; £46/10.—Robinson's, Green St., Cambridge.

CLYNO, 6h.p., 2-speed; we can deliver absolutely certain 24th May; £68/5.—Robinson's, Green St., Cambridge.

ROBINSON'S Motor Bicycle Garage, Green St., Cambridge, Triumph agents. Tel.: 388. T.A.: Bicycles, Cambridge.

£11/10.—Motosacoche, 1910, spring forks, magneto, new Whittle and tyre, just overhauled; any trial.—French, 140, Foster Hill, Bedford.

CLUTCH Triumph, and 2¾h.p. 3-speed New Hudson, immediate delivery; 1911 Kerry, £27; Triumphs from £25; exchanges.—Wilderspin, Chatteris.

BRADBURYS for Whitsuntide; choice of two.—1912 standard, ridden 2 weeks, £44; 1912 2-speed, belt drive, unpacked.—Potter, Framlingham, Suffolk.

1912 Rovers, all models, 1912 2-speed Bradbury, and sidecars to fit above machines; in stock, immediate delivery; cash or exchange.—Young and Co., Newmarket.

POWERFUL 3½h.p. Minerva Motor Cycle, good condition, reliable machine, engine perfect, belt new, new Dunlop (back), 2 accumulators, tools, bags, lamp, spares, etc.; bargain, £15.—R. Ranson, School House, Earsham, Bungay, Suffolk.

SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

1912 F.E. Triumphs, Bradburys, Enfields, ready for the road.—Rose Bros., Bridgend, Glamorgan.

1912 B.S.A., free engine, brand new, ridden 20 miles; £51; no waiting.—Farrington, fruit grower, Evesham.

3½h.p. Rex, low, h.b.c., B. and B., Bosch, new, Dunlops, good tyres; £15, or near offer.—24, Cornwall St., Hereford.

3½h.p. P. and M., thoroughly overhauled by makers, and in perfect condition; £35 net.—Green, Haverfordwest.

ARIEL 3½h.p. Decompressor, absolutely new, but 1911 late pattern; what offers?—Marriott, Motor House, Hereford.

3½h.p. N.S.U., magneto, perfect order, spring forks, adjustable pulley, 1909; £17/10.—Allen, jeweller, Crickhowell.

TRIUMPH, 1912, free engine, unpacked; also 1911 standard, great bargain, £35.—Gibbon, clothier, Pontypridd.

CLUTCH Triumph, 1912, in stock, and 6h.p. twin N.S.U., perfect; also forecar; what offers?—Thomas, agent, Aberfan.

NEW Hudsons.—Fred Morgan, Talgarth, can give prompt delivery of 1912 models; also a number of second-hand machines; enquiries solicited.

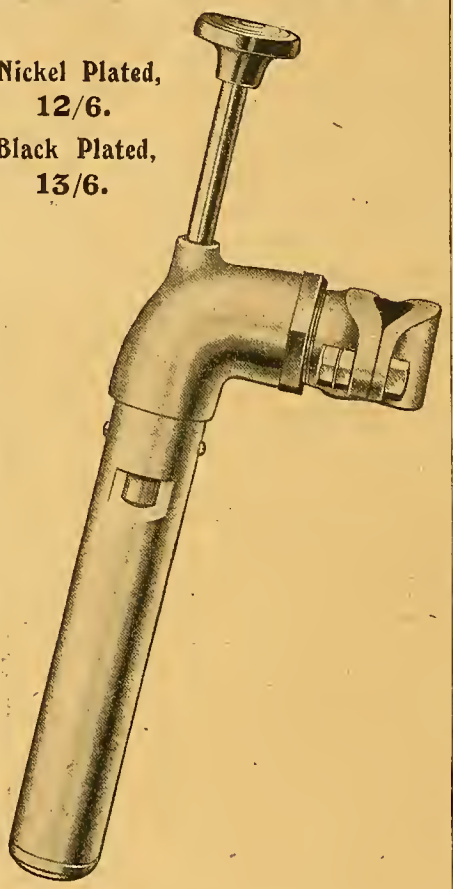
4h.p. Twin N.S.U., h.t. Bosch, B. and B., h.b.c., fast and reliable, £16, or exchange modern 3½h.p., F.E., cash adjustment.—D. Jones, Pontybat, Brecon.

1909 Tourist Trophy Triumph, engine and magneto recently overhauled by makers, new tyres and belt, Cowey speedometer, lamp, machine in fine condition; £34.—Purnell, Cambrian Brewery, Newport.

CHATER-LEA-PEUGEOT, 3½-4h.p., late 1911, Saxon forks, Bosch h.b.c. magneto, All saddle, Palmer cords, footboards, spare valves, tube, plug, tools; genuine bargain, £28.—Burgess, Sidbury, Worcester.

1911 Calthorpe, 3½h.p., £32/10; 1910 standard Triumph, £34; 1910 clutch Triumph, £38; 1910 Kerry-Abingdon, £25; 1908 Minerva, £12; 1907 Minerva, magneto, £10.—Collier, 52, Somerset St., Abertillery.

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Black Plated, 13/6.

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MOTOR BICYCLES FOR SALE.

SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants, and Channel Islands.

TRIUMPH, free engine and standard models; delivery from stock.—Laytons', Bicester.

RUDGE-WHITWORTH, multi-speed model; delivery 7 days.—Laytons', Bicester.

B.S.A. Motor Bicycles, free engine models, from stock.—Laytons', Bicester.

JAMES, 3½h.p., 1912 standard model, the big engine with a big heart; delivery from stock.—Laytons, Bicester.

PREMIER, 2¼h.p. lightweight, 1912, new 3 weeks ago, and as new now; cost £36; your offers wanted.—Laytons', Bicester.

ENFIELD, 2¾h.p., 2-cyl., 2-speed model; delivery from stock; £46.—Laytons', Bicester.

EXCHANGES Considered concerning any machine.—Laytons', Bicester, Oxon.

1912 Lincoln Elk, 3h.p., new March; bargain, £22.—White, 42, London Rd., Camberley.

1910 Moto-Reve, twin, 2¾h.p., just overhauled, in perfect condition; £20.—White, Camberley.

1911 Kerry-Abingdon 3½h.p. Motor Cycle, new Feb. 1912, splendid condition.—White, Camberley.

MOTOR Cycle, Fafnir engine, B. and B. carburetter in good running order and condition; bargain, £10.—White, Camberley.

TRIUMPH, 1910, free engine, new tyres and belt, in splendid condition; £35, lowest.—White, Camberley.

MINERVA, 3½h.p., 1909 cylinder; £10/10, or near offer.—19, Canute Rd., Southampton.

1912 Triumphs, free engine, in stock; immediate delivery; £55.—Paxman, Tewkesbury.

3½h.p. Rex, overhauled, splendid running order; sacrifice £8.—8, Blucher St., Chesham, Bucks.

1912 2¾h.p. 3-speed New Hudson, brand new; accept 43 guineas.—Bennett, West St., Fareham.

ARIEL, new, under 300, demonstration; illness, must sell, any reasonable offer.—Burton, Vicarage, Banbury.

TRIUMPH Motor Cycle; price £20; new cylinder and piston, magneto; owner abroad. — Readhead, Salisbury.

CHAIN Drive 2-speed Bradbury; delivery from stock; first cheque £58/10 secures.—Gough's Motors, Gloucester.

1911 Rudge, June, not done 900 miles, as new; demonstration machine; £36.—Balfour's Motor Works, Banbury.

2¼h.p. F.N., 2-speed, free engine, splendid condition, climb anything; £22.—Baker, 200, Holdenhurst Rd., Bournemouth.

4h.p. Martin, Xl'all saddle, magneto, needs slight repairs; bargain, £12/10; exchange.—King, Shipton Bellinger, Andover.

FOR Sale, Hobart, recently re-bushed, excellent condition; £8.—Particulars, Collyer, wheelwright, Gt. Horwood, Winslow.

ZENITH, 1912, 6h.p., exceptionally equipped; cost nearly £80, condition perfect; £55.—Heyboum Motors, Maidenhead.

ZENITH, 1912, 3½h.p., run 200 miles only, perfect condition; £50, no offers.—Lake, Southcourt, Chalfont Common, Bucks.

B.S.A., 1912, 2-speed, 2¼ tyres, perfect, run 400 miles, cost £61/3, accept £56, or nearest offer.—Rutcliff, Kilminster, Stroud.

6h.p. Curette, perfect, wheel control, 2 speeds, B. and B., new tyres; £20; exchange.—40, Leaphill Rd., Pokesdown, Bournemouth.

ENFIELD, 2¾h.p., late 1910, perfect condition; owner buying car; accept any reasonable offer.—Sunn, Bank, Burcott, Aylesbury.

2¾h.p. De Dion, accumulator, and cash; wanted, light weight magneto motor cycle.—Rowles, Golden hayes, Bartley, Southampton.

TRIUMPH, 1909, splendid condition generally, engine overhauled and guaranteed perfect; £28.—Gough's, Motors, Gloucester.

TRIUMPH, F.E., 1911, only ridden 1,000 miles, excellent condition; bargain, £50.—Dominy and Co., Triumph agent, Winchester.

TRIUMPH, 1910, standard, enamel and plate as new, guaranteed in perfect order; £39/10.—Dominy and Co., Triumph agent, Winchester.

3½h.p. Quadrant, accumulator ignition, h.b.c., B. and B. carburetter, good order; photo sent; £10.—Pearce, Ower, Romsey, Hants.

RUDGE and Bradbury Models, for prompt delivery; trial runs; exchanges entertained; send for lists.—Agent, Barnes, Colnbrook, Bucks.

1911 Triumph, free engine, 2-speed gear, lamp, horn, etc., sidecar if desired; a bargain, must be sold.—Jacob, 6, Noel Cottages, Bletchley.

TRIUMPH, free engine model, new July, 1911, in fine condition, lamp, horn, spare tube; £42/10.—Paterson, 31, Leigh Rd., Eastleigh, Hants.

THE MOTOR CYCLE

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ADDRESS: 20, TUDOR STREET, LONDON, E.C.

A Glut of Open Hill-climbs.

RECENT events have conclusively proved that open hill-climbing competitions have been overdone. Interest in these events must wane when the same coterie of riders fight out a weekly battle, one week in the North of England, the next in the South, and practically always with the same result. We know that the trade, speaking generally, are almost afraid to send their representatives to some of these competitions, where in many instances the hill is a badly chosen one with dangerous bends which cause competitors, who have got to win at all costs, to take undue personal risks.

Now that the speed of motor cycles has increased so largely, there are very few hills which are really suitable and safe for these contests, and it is time the Auto Cycle Union stepped in and refused to allow more than, say, six open hill-climbs during the year, the hills to be chosen by the competitions' executive.

We do not wish to see sporting events discontinued by any means, but if hill-climbs are to continue they should be confined more to club members, and some improved methods of finding the winners should be instituted. The absurdity of the modern hill-climb is shown by two snap-shots in last week's issue, where riders are depicted in the act of falling while trying to negotiate bad corners too fast. Among the ideas that suggest themselves for improving hill-climbs are a combined climb and non-stop run of twenty miles or so at legal limit, so that the hill is climbed with hot engines, and ascending a gradient several times non-stop. Unless some measures be taken to reduce the number of open climbs and to confine them more to club members, the fact of their super-abundance and the constant winning of the same riders must eventually rob this valuable form of contest of all interest.

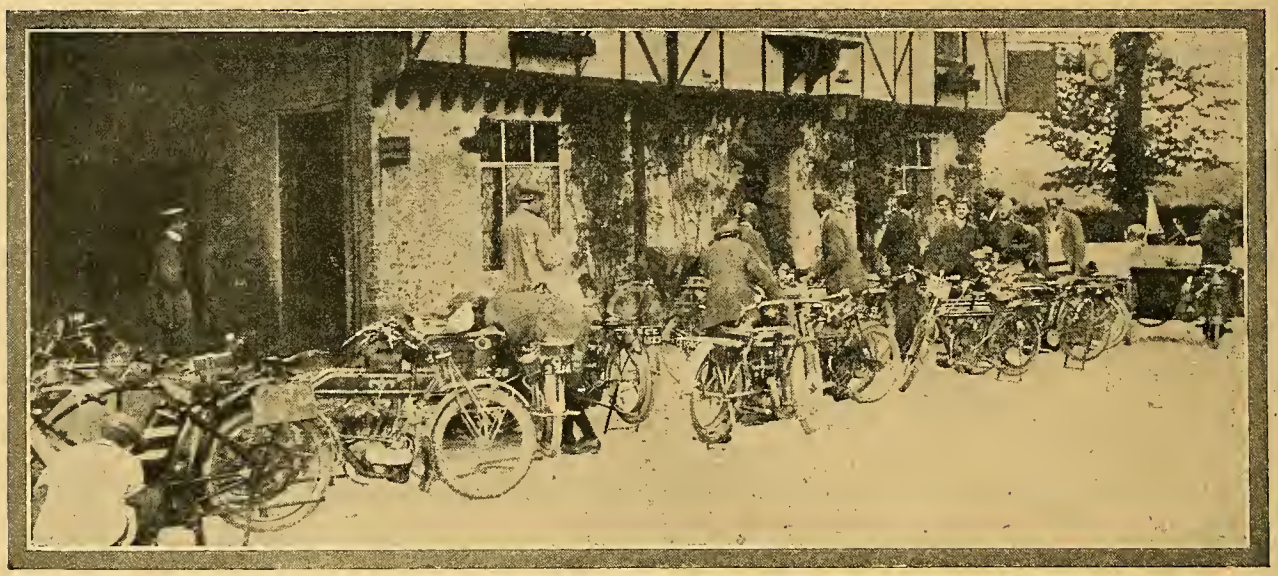
Already we know of one or two important firms who have decided to refrain from future hill-climbs run on the same lines as those referred to in the first portion of this article. There is also the recent decision of the Manufacturers' Union not to support open hill-climbs unless they receive the assurance of the organisers that proper precautions have been taken to safeguard the competitors from accident.

Power for Sidecar Work.

TWO contributors to our correspondence pages this week take directly opposite views of the question of the power required for sidecar work. One thinks the standard 3½ h.p. engine quite sufficient, and instances several performances accomplished therewith; the other, who has had experience of many different machines, tells readers that he does not think any engine less than a twin-cylinder of about 8 h.p. is any use. Time was when the standard single-cylinder was not powerful enough, but the perfecting of change-speed gears has altered the question from one of power to speed. Provided the gear ratios are sufficiently low, the single-cylinder engine will take a sidecar up practically any hill, but only at speeds which to some are irksome. It amounts to this: the single-cylinder requires a bottom gear ratio of about 10 to 1 to render the climbing of steep hills a certainty, and the top ratio should not exceed about 5 to 1. The more powerful twin will do the same work on higher gear ratios with a corresponding increase of speed. Individual choice, therefore, should decide this question.

INTER-'VARSITY HILL-CLIMB.

SIXTY COMPETITORS IN A SPORTING EVENT. OXFORD EASY WINNERS.



AT THE RENDEZVOUS—THE LAMBERT ARMS, ASTON ROWANT.

A MOST sporting hill-climb, which took place on Tuesday afternoon, the 21st inst., was the inter-club event held between the two University motor cycle clubs. The competition was quite well organised when it is taken into consideration that neither the Oxford nor the Cambridge club have had much experience in work of this kind. The hill was well flagged, no one made an ascent before the competition began, and the rules were framed so as to render riding as safe as possible. The hill utilised was Kingston Blount Hill, running parallel with Aston Rowant, which was that chosen by the Motor Cycling Club for their members' hill-climb on the 11th inst. The results were decided on the number of points gained. The first place represented five points, the second three points, and the third one point. Class I. was for lightweights up to 350 c.c., to be decided on formula :

	University.	mm.	c.c.	Time. m. s.
1. O. B. Pratt (2½ Premier),	Oxford	66×72	245	1 32
2. A. F. R. Broadhurst (2¾ Douglas) ...	Oxford	60×60	340	1 39⅖

G. McBain (2¾ h.p. J.A.P.), the only Cambridge representative, dismounted near the summit, consequently the formula was not worked out.

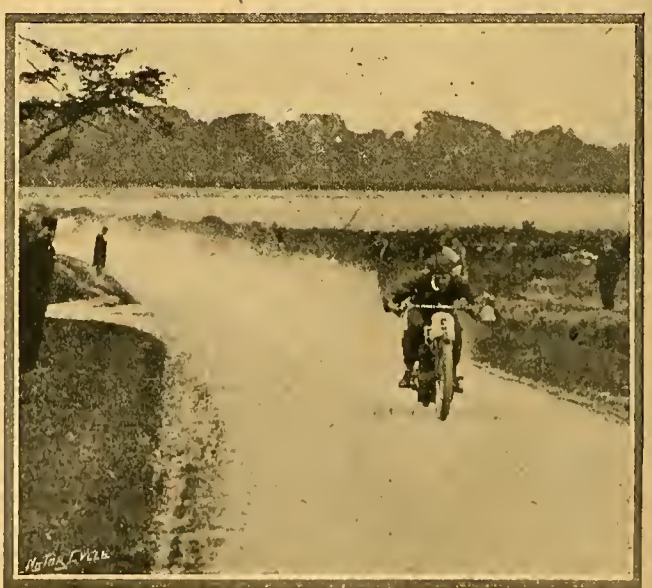
A Second Win for Oxford.

Class II., for single-cylinder touring machines, to be decided on formula, consisted of seven Oxford and seven Cambridge men. Only three Cantabs, however, started. Here again the Oxonians scored heavily, winning on both time and formula :

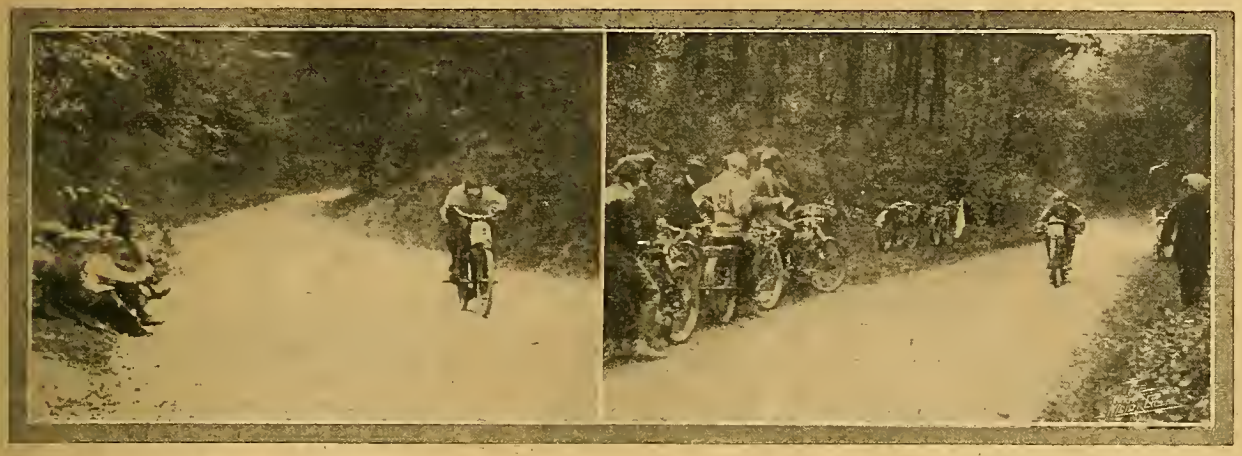
Formula place.					
1.	O. B. Pratt (2½ Premier),	Oxford	65×72	246	1 34⅕
2.	J. P. MacDonald (3½ Norton),	Oxford	82×94	496	50⅕
3.	J. Reid (3½ Triumph),	Cambridge	85×88	499	1 -3¼

In this class D. G. Murray (3½ h.p. Triumph) assumed a most curious position, keeping his right leg in a sort of kneeling posture.

Class III., for multi-cylinder machines up to 1,000 c.c., decided on formula. Five Oxford men and eight Cambridge men started. Cambridge scored on this occasion, while the most conspicuous feature of the class was the number of 7 h.p. Indians entered. Sandeman (7 h.p. Indian) (Cambridge) wobbled dangerously during his ascent, but he managed to make good time. E. H. Lees, who is a well-known



L. P. Openshaw (8 h.p. Zenith) making a fast ascent.



O. B. Pratt (2½ h.p. Premier), who obtained two firsts on time and two on formula.

G. W. Phillips (6 h.p. Blumfield) finishing. He was the fastest rider in Class 3.

rider outside the C.U.M.C.C., did not ride in this class, as he damaged his hand in the Leathley Bank hill-climb. I. C. Maxwell rode in his place :

Formula. place.		Mm.	c.c.	Time. secs.
1.	G. W. Phillips (6 Blumfield), Cambridge	67 ×95 (2)	670	51⅕
2.	L. P. Openshaw (8 Zenith), Oxford	85 ×85 (2)	964	45⅖
3.	I. C. Maxwell (7 Indian), Cambridge	82.5×93 (2)	994	52

Phillips's Blumfield certainly travelled splendidly, while Openshaw, on his Zenith, made the fastest time of the day.

Class IV., for T.T. singles up to 500 c.c., decided on time :

1.	W. G. McMinnies (3½ Triumph), Oxford	85×88	499	52⅕
2.	O. E. Stout (3½ Rudge), Cambridge	85×88	499	54⅘
3.	A. C. Hardy (3½ Norton), Oxford	82×94	496	55⅕

Class V., for passenger machines up to 1,000 c.c., decided on formula. Only two Oxford men and no Cambridge man finished, so the formula was not worked out :

1.	L. P. Openshaw (8 Zenith sc.), Oxford	85×85 (2)	964	1 10
2.	G. V. Sinclair Smith (6 Enfield sc.), Oxford ...	76×85 (2)	770	1 28⅘

A. H. Dalton (8 h.p. Matchless and sc.) failed, while N. B. Stewart (3½ h.p. Arno and sc.) met with a similar fate.

Fast Speeds.

Class VI., for all-comers, decided on time :

1.	L. P. Openshaw (8 Zenith), Oxford	45
2.	B. Sandeman (7 Indian), Cambridge	49⅕
3.	I. C. McLure (7 Indian), Cambridge	49⅗

Kingston Blount Hill is not much obstructed by traffic, but first two cows and then a cart caused some delay in this class being run off. I. C. McLure had a traffic stop, and so was allowed a second attempt. Sandeman had apparently learned the hill during his first ride up, as he made a much better performance on this occasion. Mr. A. C. Hardy (New College, Oxford) worked out the times, and at the Lambert Arms, Aston Rowant, where tea was served, announced that Oxford had won—38 points to 15. Mr. Hardy was joint hon. secretary with Mr. T. M. G. Chapman (Trinity College, Cambridge). The judges were Messrs. W. R. McBain and J. J. Conybeare, and the timekeepers Messrs. F. T. Bidlake and A. V. Ebblewhite.

The winner of the silver cup presented by Mr. F. H. A. Marshall for the fastest time made by a Cambridge man was won by B. Sandeman (7 h.p. Indian). The cover presented by Messrs. Wood-Milne, Ltd., for the fastest time of the day was won by L. P. Openshaw (8 h.p. Zenith) (Oxford). The belt presented by Messrs. Lycett, Ltd., for the fastest time in the T.T. class was won by W. G. McMinnies (Oxford).

Colours of the Rivals.

Oxford and Cambridge colours were freely displayed on the machines, on sweaters, and in several cases by elaborate garters artistically placed round the left knee.

Robert, as the policeman on duty on the hill was affectionately called, did excellent work at the cross roads by the Lambert Arms, and was enthusiastically called forth to take his place in the photograph taken after the hill-climb. He modestly refused, but eventually was persuaded to take his place in someone's sidecar, and thus to be handed down to posterity as one who did his duty, and who did it in the sportsmanlike manner usually displayed by that most excellent branch of the Force, the Oxfordshire Constabulary. The fact that every competitor was an amateur in the truest sense of the word rendered the event all the more interesting, and quite a refreshing change from the usual run of motor cycle events.

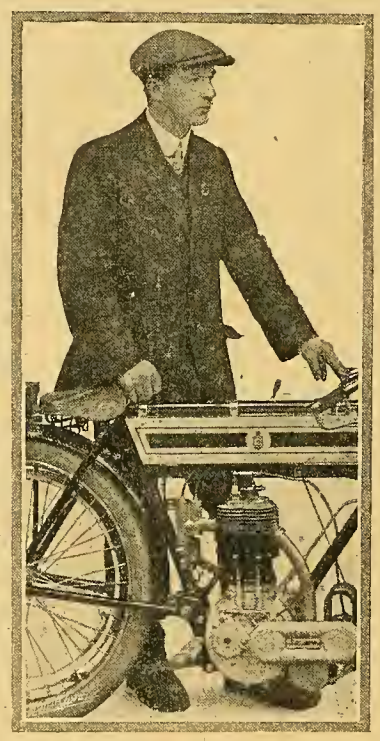
BRITISH MOTOR CYCLES IN CANADA.

We are advised that two firms handling British motor cycles in Toronto have relinquished them in favour of American mounts. American makers are doing their utmost to educate Canadian riders to believe that the U.S. models are *the standard* to judge by, therefore deviations from such standards appear odd to some Canadians. British makers of motor cycles should not lose sight of the big effort that is being made by our American cousins to capture the Canadian motor cycle business. The agents for two makes of American motor cycles have, it is said, received large orders for delivery this year.

MY MOST EXCITING RIDE:

No. 2.—W. F. NEWSOME.

"MY most exciting ride?" queried W. F. Newsome, the famous Triumph rider. "I find it somewhat hard to answer that question, for most competitive rides are more or less exciting. At any rate, most of the races I have contested have had some exciting incident or other connected with them. I think the Tourist Trophy races have impressed me the most though, and of the series the race of 1909 stands out very prominently. I had excitement on two scores in that race, for I narrowly missed an accident, and at the same time was going so well that I was near the top all the time. It became necessary for me to stop in the sixth round in order to make an adjustment, and as I feverishly opened my toolbag the usual little crowd of spectators came up, and I enquired of them as to where I stood in the race. One of them told me I was lying fifth, and in my hurry to pick up the tools I dropped them all over the road. With one's nerves all on end and the knowledge that every second counts, fingers become thumbs, and my average speed suffered through my haste. But I got the tools together again, and went off for all I was worth, knowing that I still held a sporting chance.



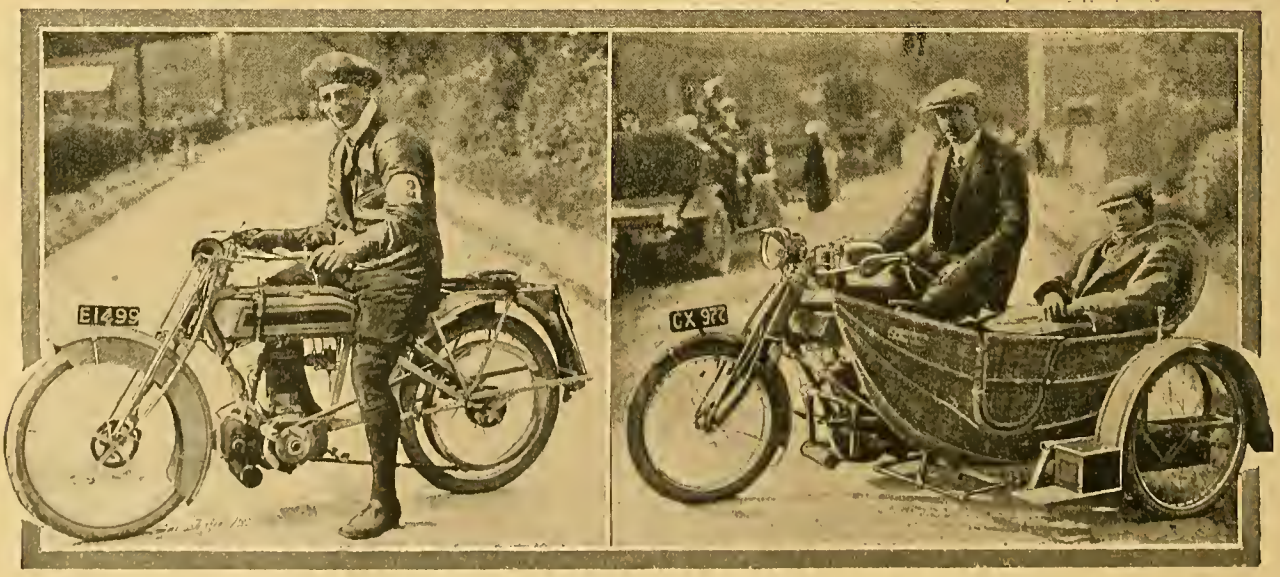
W. F. Newsome, who finished third in the 1909 T.T. race and first of the single cylinders.

Cornering in the T.T.

"In one of the subsequent rounds I happened to come abreast another competitor just before reaching the bend at the bottom of Creg Willey's Hill. I was overhauling my man, but there was not much between our speeds, and we took the corner neck and neck. It was quite impossible for both of us to get round together, it being quite a difficult job for one to take the bend while going all out as we were. My heart was in my mouth, but, to my intense relief, the other man switched off, and this just enabled me to get round first. Never before did I feel so excited, and my nerves were pent up right through until the finish, where I pulled up very stiff. I had not worn goggles, and my eyes were full of dust and terribly sore, but they told me I had finished third in the race and first among the single-cylinders, as a result of which knowledge I quickly got into trim. It was a race in which every moment was exciting, and in which the incident at Creg Willey's corner stood out as the main feature of the ride."

A Modest Rider.

Newsome is one of the best-known trade riders of the day, and since the retirement of Jack Marshall, who won the Tourist Trophy race in 1908, he has been chief rider for the Triumph Company. His exploits on hills and in trials rank among the greatest of motor cycling feats, and he is a rider whose exceptional success has not turned his head. Unfortunately he will be an absentee in this year's T.T. race.



A new pattern 3½ h.p. A.S.L. made its initial appearance at Leathley Bank. It will be noticed that this machine has 26in. wheels, new pattern spring forks, and is finished in French grey. The rider is W. E. Cook.

J. Lockwood, hon. sec. of the Huddersfield M.C.C., with his 5-6 h.p. Clyne and Gondola sidecar. This novel sidecar was referred to in our issue of May 2nd last.

Occasional Comments by "Ixion"

Steady Speedometer Needles.

Unfortunately the market is not so crowded with speedometers that we can press for an A.C.U. trial of these invaluable devices; but the potential buyer will do well to make sure that he selects a make which does not suffer from a wobbly needle. Last week I tested three different types. On one the needle swung freely over a fifteen or twenty mile range of its dial, quite irrespective of road vibration or of front fork action. On another the needle was comparatively staid and sober up to 30 m.p.h., but commenced to "hunt" at those higher speeds at which accurate readings were essential to prove the value of certain tunings I was experimenting with.

The third device is not, I believe, made in motor cycle sizes, but had been converted by a car owner. This device owned a large blunt needle, which fairly clung to the correct figure, and pushed itself almost imperceptibly around the dial, without a trace of dithering.

I have no doubt that the quality of the road surface and the action of the front forks have their effects on certain speedometers, but now that I know from actual experience that it is possible to turn out a speedometer with an absolutely steady needle, which is not affected by any vibration, I shall not be satisfied until I have got one.

Petrol Consumption.

In the discussion about excessive petrol consumption and automatic carburetters, correspondents and contributors appear to have ignored the fact that the average motor cycle manufacturer instructs his testers to adjust the carburetter to provide a mixture that is "rich all through." I have never yet taken delivery of a machine which was adjusted to provide sufficient air for the throttle's widest opening. The reason is obvious. If the jet be a size or so too large for absolute efficiency, the engine will start easily and the mixture will be less sensitive on hills and in picking up after a slow. These theoretical deficiencies are practical merits, since the bulk of motor cyclists are not expert mixture manipulators, and the buyer who knows a little can be trusted to remedy the adjustment for himself.

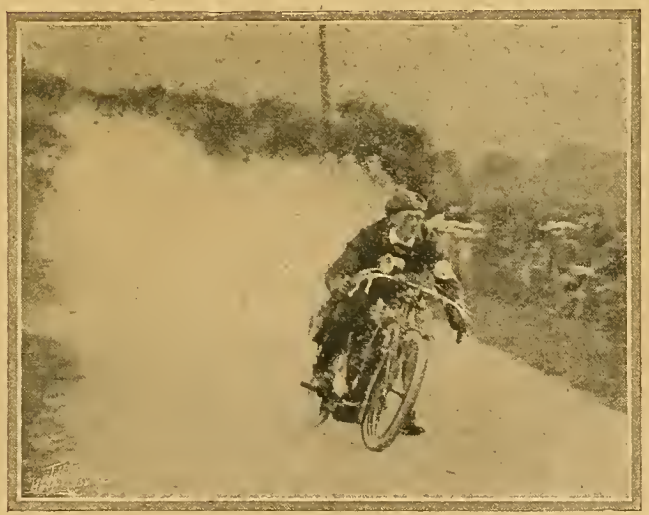
My latest 3½ h.p. as delivered only did sixty miles per gallon, and took full air on half-throttle. So there is room for semi-automatic or fully automatic carburetters to err on the rich side without being inferior to the standard two-lever type as adjusted by the makers; and here is a partial explanation of the universal waste of fuel.

The addition of a Krebs type of automatic valve to existing two-lever vaporisers would retain the easy starting and the non-sensitive air lever without so gross a sacrifice of efficiency. But most buyers would need the help of carefully worded instructions for the adjustment of the valve spring when its tension began to vary in wear.

Improving Mackintosh Leggings.

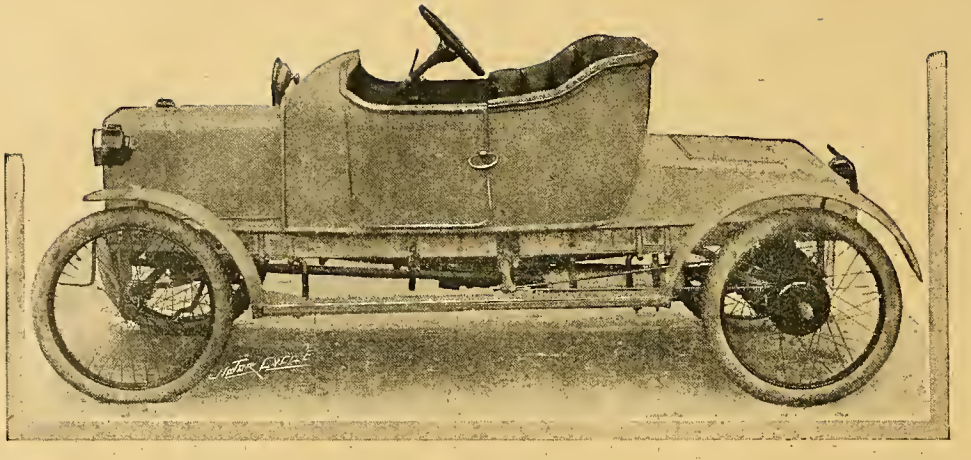
Many mackintosh leggings have grave weaknesses. The first is the flimsy nature of the seams at the fork. If the legging be cut by ordinary tailors, who have no idea of the strain thrown on these seams by the jump mount, they make the legging far too tight a fit, with the result that the material soon rips when the rider leaps off the ground and does "splits" as he vaults into the saddle. If a dealer's stock does not contain a pair that are a loose fit at this point, there are three alternatives: (1) To buy too large a size; (2) to strengthen the correct size by solutioning canvas strengthening strips over the fork seams; (3) to buy a pair of separate pullovers in lieu of trousers. The defect of separate pullovers is that they give no protection from a wet saddle; this may be nullified by laying a waterproof case in which the overalls are carried, over the saddle when the overalls are being worn and the saddle is exposed to rain during a dismount.

Another drawback is the weakness of the instep straps. These are generally made of the same mackintosh material as the leggings; their proportions are more suited to a dancing pump than to a serviceable boot, and unless the leggings are a shade too long to be a pretty fit, mounting and dismounting throw a big strain on the straps. Straps made of mackintosh material soon wear through if the rider place the middle of his foot on the footrests. The straps ought always to be of leather, and made adjustable by means of a buckle. Astute riders never don a new pair of leggings until they have got a saddler or cobbler to substitute really serviceable straps of this type.



A PROLIFIC PRIZE WINNER.

F. W. Barnes (8 h.p. Zenith-Gradua) making fastest time in the Bradford M.C.C. Open Climb at Leathley Bank. Barnes, as usual, had several first awards to his credit at this event.



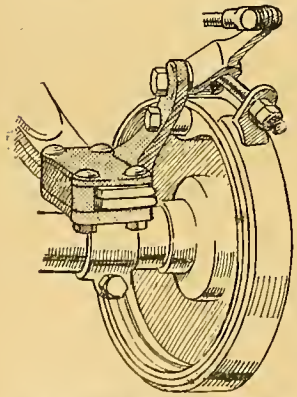
THE ARDEN CYCLECAR.

AN ENTIRELY NEW FOUR-WHEELER WITH SHAFT DRIVE.

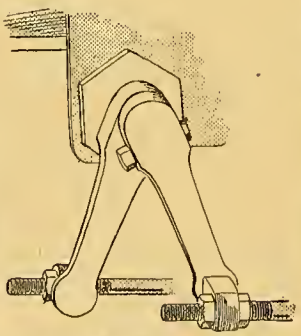
LAST week we inspected the first model produced of a new pattern cyclecar which is being placed on the market by the Arden Motor Co. of Berkswell, Warwickshire. It is the first of a batch of twenty-five, and it will be agreed on inspection of the illustrations that it is of smart design. A motor car in miniature best describes the vehicle, accepted car practice being closely followed throughout. Power is derived from an 8 h.p. J.A.P. air-cooled engine placed transversely in front, cooling being assisted by a belt-driven fan. The carburetter is an Amac, the control being attached to the steering wheel. The drive is by propeller-shaft through a three-speed gear box of the sliding tooth type, giving ratios of 5, 8½, and 12 to 1, and a reverse of 15 to 1, to a differential and live axle of substantial proportions. The wheelbase is 7ft., whilst the track measures 3ft. 8in.

The Margin of Safety.

In examining this vehicle we were impressed by the fact that, although light weight was the outstanding factor, no part having an important function to perform had been reduced in dimensions. For instance,

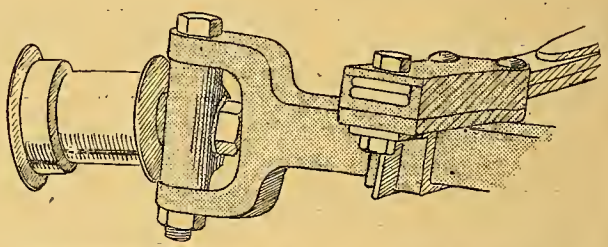


Rear spring slide and brake gear of Arden cyclecar, showing internal and external brake shoes.



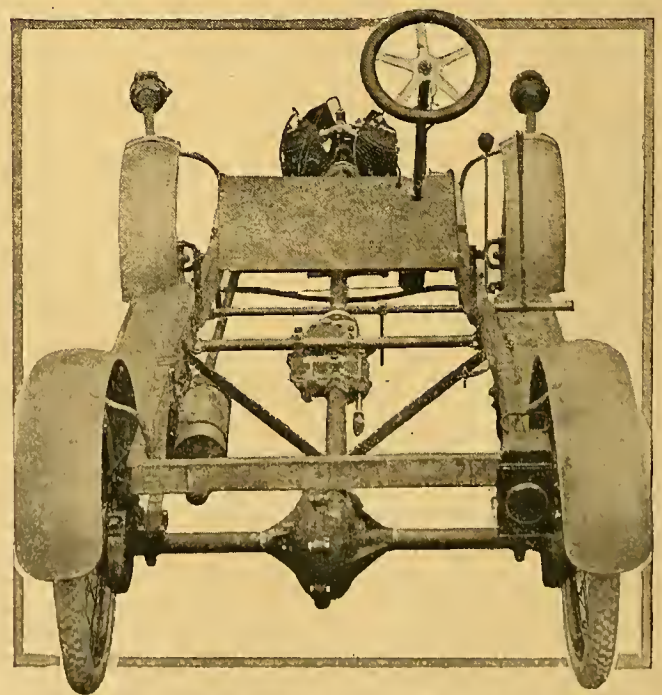
Brake operating levers showing method of adjustment and sturdy construction.

the brake connections and fittings, also the bobbin and wire steering gear, appeared to be amply strong for their purpose. Provision for taking up slackness in the cable has not been overlooked, and as eyeleted ends have been done away with it is considered that the steering gear will outlast the car. The braking power is obtained from internal expanding brakes on the rear wheel operated by a pedal, a side lever contracting external bands on the same wheels. The gear



Front springing. Notice how the steering head is canted out at the bottom.

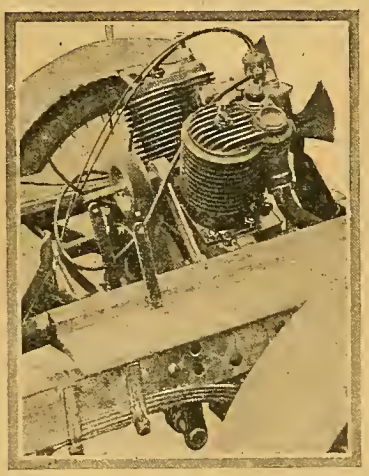
box, which is placed amidships, and which is readily accessible by removing the footboard, is controlled by a change speed lever inside the body. It is sup-



Rear view of chassis showing live axle, torque rods, and general disposition of parts.

The Arden Cyclecar.—

ported by a tubular cross member at the back and by a large diameter tube from the front, which latter also encloses the forward propeller-shaft and is carried at its front end by a substantial bracket immediately behind the clutch. A refinement which we believe is new to cyclecar design is that both engine and gear box are set on a slight slope so as to reduce the angularity of the rear propeller - shaft. The springing of the car is particularly neat, and should prove most efficient in practice. Laminated springs project from each corner of the oak frame, the bottom leaves extending the whole length of the side frames. The frame is supported by flitch plates, the engine cradle forming an additional girder. The clutch is of the internal leather to metal type, the periphery being thickened in order to act as an auxiliary flywheel to enable extremely slow running. An important feature is noticeable in the arrangement of the steering heads, in that the stub axles are so supported that a line produced downwards through the pivot centres would meet the ground at the central point of tyre contact; this is correct practice and considerably improves the steering. A handsome two-seated flush-sided body with scuttle dash is fitted, and this cyclecar is to be sold complete with lamps and horn at a price which will be in the neighbourhood of £100. Running boards, curved mudguards, and covered-in working parts enhance its appearance. The tyre equipment is 26 × 2½in. Hutchinsons on wire wheels. With body complete, we were informed that this vehicle weighs approximately 6 cwts., so that it is well within the A.C.U. definition of a cyclecar.

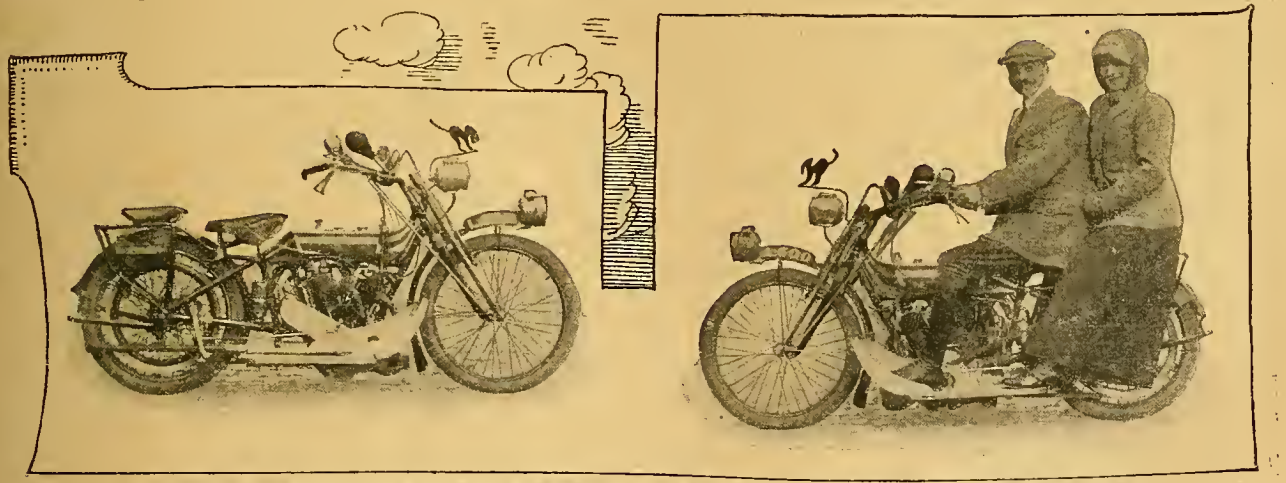


The power unit—an 8 h.p. J.A.P. engine—showing fan placed in front of cylinders, theoretically the correct position.

Mr. E. A. Isherwood, the proprietor of the Arden Motor Co. (formerly the Swan Motor Co.), is a motor cyclist of long standing, and his experience of good machines will ensure that everything, even down to details, of the Arden cyclecar is perfectly satisfactory and up to its work before being finally offered to the public.

A Powerful Twin of Original Design.

WE are able to give details of a very interesting mount made to the specification of M. Louis Augustin, 23, St. Bernard's Crescent, Edinburgh. The machine was made for him by Mr. Saunders, of Bristol, and is fitted with a 7-9 h.p. Peugeot automatic valve engine, having a bore and stroke of 80 × 98 mm. respectively. The frame and fittings are Chater-Lea throughout. Bosch magneto and B. and B. carburetter are used, and the engine is fitted with two large silencers and a long pipe extending to the back of the rear wheel and flattened at the end. Transmission is by Clyno adjustable pulley and 1in. belt to the rear wheel, in which is incorporated an Albion plate clutch, a handle starter being fixed to the frame on the offside of the machine. The wheels are shod with 26in. × 2½in. tyres. Two very noticeable features are the long footboards with metal mud shields and the tank, which is duplex and is slipped over the top tube and then connected up at the bottom. The right hand tank is fitted with the J.A.P. automatic lubricating device, and the space between the tanks forms a neat protection for generator tubes and wiring.



Left and right side views of the 7-9 h.p. special twin described. The owner is astride the machine in the right-hand illustration.

A second saddle will be noticed on the carrier; this is frequently used for passenger work and is found quite satisfactory. The weight of the machine ready for the road is 224 lbs., and the machine starts up any ordinary gradient on a 3½ to 1 gear. It is worthy of observation that tie rods are used from the forks to the handle-bars.

PETROL CONSUMPTION.

CONVINCING PROOFS THAT MOTOR CYCLES ARE NOT EXTRAVAGANT,

A LETTER signed "Enquirer" which appeared in the issue of the 9th inst. under the heading of "Petrol Consumption" has brought quite a flood of replies. The letter pointed out that we had stated several times that the popular 3½ h.p. motor cycle should run about one hundred miles to the gallon. The writer said his average consumption was sixty miles to the gallon, and he wished to know if the consumption he named was really abnormally high, or if the figures we and the makers gave were only paper ones. We left our readers to take up the cudgels. The replies received are so numerous that we have made a selection of extracts for publication which cannot fail to allay any anxiety "Enquirer" and others may have felt regarding abnormal consumption. The letters distinctly show that 100 m.p.g. is not uncommon for a 3½ h.p. machine, and is very often exceeded under ordinary touring conditions. Under exceptional circumstances a 3 h.p. machine has done 22 miles at the rate of 220 m.p.g.

Sir,—Replying to "Enquirer," he must certainly be riding a very extravagant bicycle. Mine, a Douglas, runs regularly 270 miles to two gallons. Something the matter with bis engine. THOS. ABLE.

Sir,—My present mount is a 3½ h.p. 1912 two-speed Humber, which invariably exceeds 100 miles per gallon. At first it would not do more than eighty to ninety miles per gallon, but by using a smaller jet and getting to know the best lever positions, I can average from 100 to 110 m.p.g. The size of the jet is something between .028 and .032. SHAZBAZZIK.

Sir,—My machine is a 3½ h.p. B.S.A. with B.S.A. two-speed gear, which I have had about six weeks. On my first run of sixty-two miles it required half a gallon to restore petrol to its original level in the tank. I was fully equipped for the week-end, with luggage on the carrier. The average speed was about 20 m.p.h. On a more recent occasion the machine used one gallon for 98½ miles. The jet used on the latter run was a .030 and on the former .032. This is the first and only machine I have ever owned or ridden, and I am very pleased with it. J. C. S. DAVIES.

Sir,—I was led to believe that one gallon of petrol would run about 100 miles. I have kept a careful account of all petrol used for the miles run, and find that thirteen gallons has just taken me 1,000 miles, which works out to about 77 m.p.g. Being a novice, and only having ridden a 1912 3½ h.p. three-speed machine about five weeks, I thought perhaps after a while I might run on a little less quantity, as I shall change speed less often and stop less frequently, both of which I suppose consume the petrol. Still, I doubt whether the experience will give me the other 23 m.p.g. NOVICE.

Sir,—Riding daily on business, and with no special attachments of any kind, my consumption works out at 88 m.p.g. I always give all air the engine will take, and my speed is never above the legal limit. My machine is a 1909 3½ h.p. Triumph, which has covered, before and since I got it, over 6,000 miles. It is fitted with the Triumph carburetter, and a jet No. 32, slightly hammered up. My last test was for 800 miles by cyclometer, and consumption was just nine gallons. M.P.G.

Sir,—I purchased a gallon of petrol on a recent Friday night, and did sixty miles solo on the Saturday and forty miles on the Sunday with a sidecar, and still had a wee drop at the bottom of the tank—in fact, about as much as I had in when the gallon was put in. This was done on a 3½ h.p. Bradbury without any special regard for economy. On my last year's machine—a Triumph—I rarely failed to do at least 100 miles per gallon, and often 110. I used a .028 jet, which I found caused an appreciable saving as compared with a standard .032 jet, although I am strongly of opinion that careful use of the control levers and a clean and healthy engine accounts for more economy than all the tinkering with a standard carburetter that the average man can do. The makers of nearly all machines advise giving as much air as the engine will take without misfiring. This is wise up to a certain point, but frequently means a weak mixture. A little less opening of both air and throttle levers will often give the same road speed. OLD 'UN.

Sir,—Quite recently I rode 169 miles, averaging just under 25 m.p.h. for running time, on exactly 1¼ gallons. Under adverse conditions, naturally the consumption is increased, but seldom falls below 95 m.p.g. L.V.B.

Sir,—I possess an ancient 2¾ h.p. chain-driven Humber about seven years old weighing about 200 lbs. all on. I weigh about twelve stones good. This machine will always run eighty-seven miles to the gallon, and has done 120 on level roads in the East Riding of Yorkshire, the average being about ninety-eight. I have an old Longuemare carburetter. CROCK.

Sir,—On my 1912 Rudge I have always exceeded 90 m.p.g., no matter what the conditions of the ride have been, and on two occasions I have covered 125 miles on a tankful of 1¼ gallons. It therefore seems to me that "Enquirer" is either careless in his driving or that he possesses a badly tuned machine. MYER B. LEE.

Sir,—I ride a 1912 6 h.p. twin-cylinder Matchless with V.S. two-speed gear. I took delivery on the night of April 13th, and have since ridden 1,118 miles—1,006 solo and 112 with a sidecar, with my wife and boy, who weigh 15 stones; my weight is 14 stones. This gives a mileage of 74½ to the gallon, as I have used fifteen gallons. The machine is fitted with a J.A.P. carburetter, single lever. I use my machine for business purposes, and my riding has been done in W. Yorks., Cumberland, Westmorland, and Northumberland. VAL TAYELOR.

Sir,—Sixty miles to the gallon is a very poor average. I ride a J.A.P. which is fitted with a Chater forecar attachment (minus seat), and have no difficulty in averaging 90 m.p.g. on average roads. The carburetter is a home-made article with adjustable jet, and I have no doubt could be adjusted to yield 100 m.p.g. IM 17.

Sir,—My 3½ h.p. 1910 Rex has on several occasions covered one hundred miles to the gallon. On one occasion I rode 138 miles on 1⅛ gallons, with an all-night stop at Oxford. The carburetter is a B. and B. with an ordinary touring jet. My brother, on a 5 h.p. Peugeot-Chater-Lea, B. and B. carburetter, rode 128 miles on one gallon. MALCOLM J. ROUND.

Sir,—I have always been able to average a good eighty to the gallon without any special tuning whatsoever, and with a 4 h.p. twin last season averaged seventy-five miles per gallon. My present mount, a 4 h.p. Rex with B. and B. Universal carburetter, averages 90 to 95 m.p.g.

Petrol consumption is governed largely by the following factors: Speed, gear ratio (this makes a big difference in consumption), size of jet used, good compression, and waste of petrol—particularly blowing back through air ports. This latter waste can be largely overcome by fitting an extension pipe with gauze over extra air.

With the B. and B. Universal, of course, it is possible to run with a much smaller jet opening on the level than with the single jet type of carburetter, as one can enlarge the adjustable jet to any size on approaching a hill. Personally I always use the smallest jet engine will take. Petrol level also accounts for a lot of waste if too high. C.E.T.

THE MILITARY MOTOR CYCLIST.

NIGHT MANOEUVRING IN SURREY.

PROBABLY the first manœuvres this year in which a motor cyclist took part were held a few weeks ago near Shere, Surrey.

The actual seat of the operations was kept a close secret until the actual day, and hence no opportunity was given to anyone to make himself familiar with the country. It was a Saturday morning, and it had been raining steadily for two hours when I set out from Sevenoaks. The condition of the roads was appalling in places, but my 1911 Model E Douglas purred away steadily, apparently oblivious of the pelting rain. Following the main road through Westerham, Reigate, and Dorking, Shere was reached punctually to schedule time at 3.30 p.m. The troops—a detachment from A and B company of the London Electrical Engineers—arrived at 4.30, and all sat down to a much appreciated meal. At 6.30 the main body were paraded and marched off in the direction of Peaslake, carrying sealed orders. The remainder gathered round their officer, who explained the night's work. It was supposed that an invading army was advancing from the South on to London. The London Electrical Engineers have been detailed off to locate the enemy, and on arriving at Shere they find that the enemy's cavalry have just left, retiring in the direction of Peaslake. Hence the defending forces throw out pickets who advance towards Peaslake and endeavour to locate the strength and position of the enemy's outposts. It will be seen from the map that there are four roads down to Peaslake. Pickets are sent down each of them, and the work of the motor cyclist was to keep in touch with the four advancing pickets and carry back information to the officers who were stationed at Burrows Cross. At 7.30 the defending party marched off and the pickets were sent down their respective roads. The country is very hilly, and the steady downpour assisted in making the test of the motor cycle a very severe one. On arrival at Burrows Cross I was sent off several times down the different roads to get any information.

The Beginning of the Battle.

Suddenly firing is heard to the West, and I scuttle off down to No. 1 road with lamp turned low to ascertain the news. The picket reports that the enemy's sentries have been encountered but have retired. This news is taken back as hard as the Douglas could go. After some time I was sent back along No. 1 road and came across one of the picket men returning with further information. He was promptly taken on the carrier back to his advance patrol, and back I went to report. By this time we had captured one of the enemy and were led to believe that they were advancing on Shere.

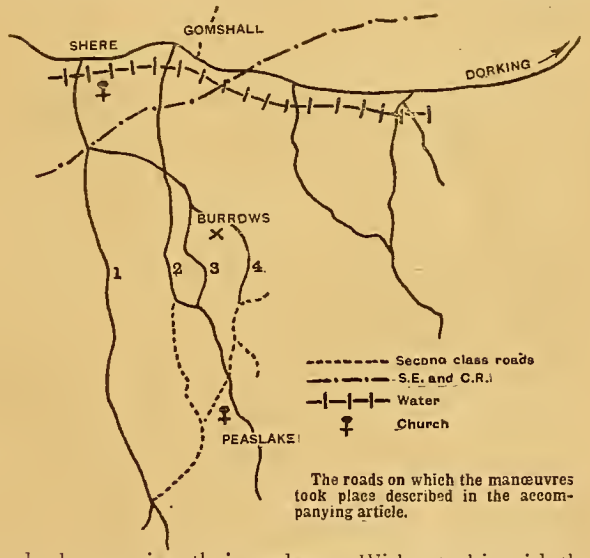
Accordingly the patrols on Nos. 3 and 4 roads were recalled to Burrows Cross, and here again the Douglas carrier helped.

Having concentrated on Burrows Cross we laid in wait at the cross-roads. It was so dark that one could only just see the road. After waiting some time I was told to ride off quietly with doused light and get some news of No. 1 road. Coasting down hill slowly I suddenly became aware of men in front, and found I was within twenty yards of two officers. Almost immediately I heard them challenged and give the enemy's countersign. With this news I hurry back and am then sent along No. 4 road. It speaks well for the Douglas that I got right through the enemy's sentries and pickets to their headquarters—Peaslake—and back without being challenged.

It appears afterwards that I was seen and fired at, but as the sentry only got a snapshot at me as I dashed across the road he was guarding, and as the man had omitted to load his rifle, I, of course, heard nothing of his well—or was it ill?—meant attention.

The Result.

Towards eleven o'clock we fell back to the railway bridge which we held until the "cease fire" was given. The umpires decided that the defending forces had succeeded in locating the whereabouts of the enemy to a satisfactory degree. They also considered the work of the motor cyclist was of extreme value because of the quickness in which the necessarily scattered pickets could communicate information to the officers



The roads on which the manœuvres took place described in the accompanying article.

and also receive their orders. Without this aid the scheme would have been impracticable owing to the difficulty and delay in conveying information. I must say that my mount behaved splendidly through the most trying conditions—incessant rain and frightful roads. The two-speed gear enabled me to negotiate steep dark lanes slowly but surely, while the belt showed no sign of slipping, owing to the large countershaft pulley.

I have come to two conclusions. (1.) I am no longer afraid of skidding after those four hours of fast night riding on slippery chalk roads. (2.) Actual picket work at night is a vastly different thing from what I conceived it.

The nervous tension which one assumes when one is proceeding along an unknown road to endeavour to locate an unknown enemy in the dark must be experienced to be believed. E.C.Y



To Carry a Passenger or Camera.

The accompanying illustration shows a method of carrying not only a passenger but a camera, or any other delicate article.

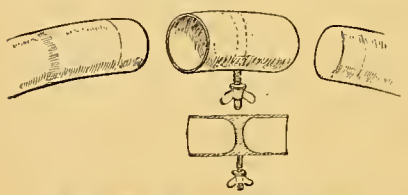


The Tynesider camera carrier.

In the latter case very light springs would be fitted. There is a piston at each corner, sliding in a guide and controlled by a spring; this prevents any swaying motion; it is light, strong, and moderate in price. The makers are the T. E. Henderson Co., 73, Camden Street, North Shields.

New Butted Tube and Goggles.

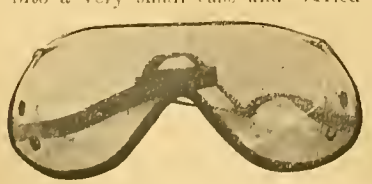
During a recent visit to the Service Co.'s showrooms, 292, High Holborn, W.C., we were shown some novel and interesting accessories which will be of interest to our readers. One of these is



Shrewsbury and Challiner butted tube.

the Shrewsbury and Challiner butt-ended inner tube. The two ends of the tube fit into a sleeve provided with an india-rubber division, immediately over which is a security bolt. Where the strain is greatest the tube is amply protected, and with this particular type it is claimed that bursting is impossible.

The next items shown to us were two new pattern goggles. The first pair of these is made of unbreakable mica and possesses the advantage of being folded up into a very small case and carried in



A neat pair of mica goggles sold by the Service Co.

the pocket. A second pair is rather more elaborately constructed, similarly fitted with unbreakable mica windows, which in this instance are tinted. The latter pair will fit over ordinary eyeglasses, and is sold in a neat chamois leather case.

Yet another novelty is a tool for cleaning and dressing leather belts. This has a wire scrub brush on one side for extracting grit from the surface of the belt, and on the other side a comparatively soft brush for applying the dressing. The Service belting is now made in 1in., 1¼in., and 1¼in. sizes for sidecar and cyclecar work, and a special dressing is supplied for keeping this belt in good condition.

A Combined Suit and Machine Cover.

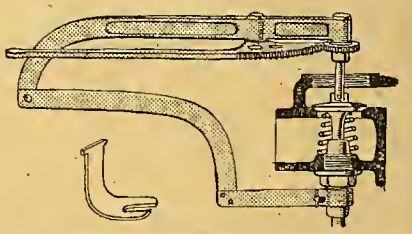
A novelty has been introduced by the Impervious Rubber Co., Ltd., 38, Falfield Street, Glasgow, in the shape of the Tirco coverall. This is a combined motor cycle mackintosh suit and machine cover. The makers say that it makes an ideal cover for the machine as well as for the rider. To wear the overalls, a belt is fastened round the waist, and the leg overalls are fastened by spring fasteners, the coat being put on in the ordinary way. To remove the suit, it is only necessary to give the springs a pull in the centre and pull the tab which is fitted at the knee, then unfasten the waist belt. To convert the suit to a cover for the machine, two special fasteners are fixed on the inside of the leggings to keep them extended, and the cover is then thrown over the machine, as shown in our illustration. The jacket is made with a storm front, storm straps, and wind cuffs to sleeves in rubber proof material, the proofing being guaranteed for two years.



A new combined waterproof coat and trouser overalls.

A Combined Valve-grinder and Spring Lifter.

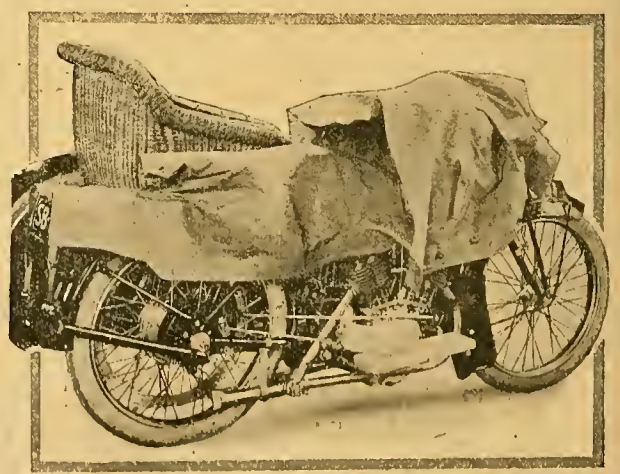
A device which will facilitate the rapid grinding of a valve has been introduced by Bowden Wire, Ltd., 37-41, Pratt Street, Camden Town, N.W. This is one of the neatest of the many ingenious inventions for which this firm has been responsible; it can be operated in practically any position without dismantling the cylinder. For grinding, the two main members are gripped in the left hand, and the right hand is free to work the ratchet handle. The screwdriver-ended spindle, meshing with the teeth of the operating lever, locates itself automatically in the valve head saw cut, and does not slip out, while pressure on the valve



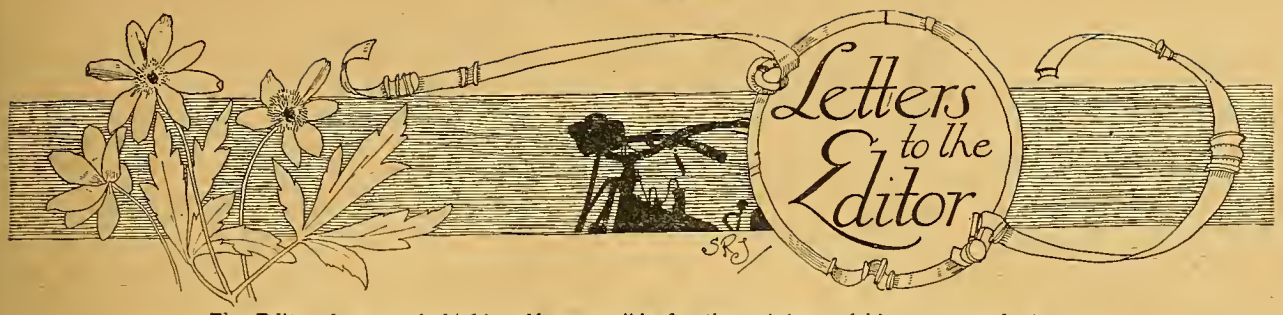
The Bowden Rapid valve grinder.

may be varied by the grip of the left hand. The clip of the lower arm is tightly screwed round the valve stem and a light spring is placed beneath the valve head, so that the latter is lifted off its seating when the pressure is released. By means of the gearing a rapid reciprocating movement is obtained.

The tool also serves as a valve spring lifter to enable the cotter to be removed. For removing the valve spring the L-shaped fork shown in the sketch is used in conjunction with the grinder, being attached to the end of the lower member by means of a butterfly nut. The screwdriver spindle holds the valve down while the spring is being lifted.



The Tirco coverall used as a cover for motor cycle and sidecar.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Tricar Conversions.

Sir,—The article on tricar conversions in the issue of May 16th must have been of great interest to the many users of old-type machines.

The writer is the owner of a 9 h.p. Riley (built in 1907) that has done excellent service, and is still running as well as ever, used as a runabout to save the expense of taking a large car out on short journeys.

I should be very glad indeed to hear of any reader who has successfully converted a tricar of this type to the modern sociable pattern, for I cannot see that there is any great difficulty in doing this. SOUTH CAROLINIAN.

Motor Cycle Taxation.

Sir,—As an enthusiastic cyclist and several years reader of your interesting journal, I was intensely interested in your editorial on motor cycle taxation.

I am a mechanical engineer with a large family and envy others who can afford a motor cycle. It is the tax that has prevented me owning a motor cycle, and if only it was lowered in the direction you have indicated, it would bring a second-hand lightweight within my reach. Having reached an age at which I find long journeys on my pedal cycle too much of a strain, I should be delighted to have a motor cycle to do long journeys and visit scenes enjoyed years ago.

I hope to see something done in the direction you have indicated. Wishing you continued success, J.E.K.

Damage to Hedges at Hill-climbs.

Sir,—I should like to draw attention to the way spectators at various hill-climbs (and particularly at Leathley Bank on Saturday, the 18th inst.) damage and break down the hedges and fences adjoining the steepest part of the hill selected.

This damage, I feel sure, is done unintentionally, nevertheless it is very hard lines on the farmer, who, as soon as everyone clears off, has to start and mend up his fences after each hill-climb.

I understand the tenants of the land adjoining Leathley Bank are going to apply to the Local Government Board to forbid the use of the hill for these climbs.

Hoping you will bring this before your readers and those who attend hill-climbs, thus warning them of the danger there is of putting a stop to a very fine sporting event.

A KEEN MOTOR CYCLIST WHO TAKES AN INTEREST IN THE FARMER.

The Cap Throwing Danger. Strength of Tyres.

Sir,—On my arrival home the other night, after riding from Holborn, *via* Hanwell and Staines, I was astonished to find a boy's cap lying on my footboard, within an inch of the driving chain. It had evidently been thrown at the machine in the dark, as I had not noticed anything *en route*. Had this cap moved another inch, it would have been caught up by the chains, and a bad smash to myself and machine would have been the probable result. Could not the A.A. or A.C.U. circularise head teachers of schools, asking them to point out to the children the dangers of this cap-throwing habit? I generally stop and "go for" the ildren myself when I see a cap thrown.

Most tyre makers draw attention to the thickness of the *tread*. If they gave us stouter *walls* and *beads*, we should be better satisfied. Four out of every five tyres I run burst at the walls, or bead, long before the tread (which is usually thick enough) is worn out. ENQUIRER.

Where Not to take out Licences.

Sir,—At Manningtree (Essex) on the 20th inst., a motor cyclist was fined four guineas and costs, and also had his licence endorsed, for riding his machine up a wide steep hill at 30 m.p.h. The rider was a most careful individual, and it was the first time he had fallen foul of the police.

At the same court, a barman, who had stolen many pounds, and candidly admitted it, was bound over to be of good behaviour for twelve months. Is this justice? Anyway, motor cyclists have means of at least showing their objection to such methods by taking out their motor cycle licences elsewhere. J. TIPPINS.

The Power Required for Sidecar Work.

Sir,—I enclose a photograph of my machine, which may be of interest, as it was through advice given in your paper that I made my choice, and I am glad to say that I chose a 6 h.p. Royal Enfield. I can take most hills on top gear, and even gain speed on a steep hill after having to slow down for traffic. Previously I had a 3½ and sidecar, but I found that I had to take the dust of cars more frequently



Photograph accompanying letter signed "A Long Stager."

than I cared for, and so I determined to purchase a more powerful machine, and now I can show most of these gentlemen a clean pair of heels.

The photograph was taken just before a 200 mile run, which commenced through the Vale of Evesham, where the blossom was so lovely that we crawled for miles on the low gear for the sake of inhaling the fragrance. The sidecar is so well sprung that my wife has lost all nervousness.

A LONG STAGER.

Sir,—I should like to add a word of warning to your readers not to be led blindly into following the example

of those riders of 3½ h.p. machines with sidecars who write rapturous letters to your paper after riding 1,000 miles. I rode one of these fitted with two-speed gear and clutch and up to 2,000 miles; I would have also written rapturously. After this distance my trouble began. The engine, of course, had been over-worked the whole time and various parts gave trouble—in particular the five rivets holding the crank-pin to the flywheel were always shearing off, necessitating taking down the whole engine, crank case and all, and several other parts required constant renewal.

The result of my experience is that for serious sidecar work, a 6 h.p. or 8 h.p. machine is required. A 3½ h.p. will do well enough for occasional sidecar work over good roads, where the low gear will not be frequently called into operation and where the engine is not being over-driven. A single-geared 3½ h.p. for this sort of work is absolutely out of the question, and I should certainly like to examine the engines of those enthusiasts who write to say what they have done with a single-geared 3½ h.p. combination after, say, 2,500 miles.

I have had seven machines, and my average mileage is 10,000 to 12,000 miles per annum with sidecar.

F. G. TOWNSEND.

Sir,—In the issue of the 16th inst. I notice a query and reply regarding the suitability of a 3½ h.p. single-cylinder machine for sidecar work; the machine referred to to be fitted with either a two-speed or Armstrong three-speed gear. You state in your reply, "Netherhall Gardens would just be about the limit for a 3½ h.p. single-cylinder," and further on you say, "You must, however, bear in mind that a 3½ h.p. does not allow very much reserve of power for sidecar work." My point is that the modern 3½ h.p. single is as near an ideal sidecar mount for the pure novice as can possibly be obtained. To variably geared singles stands the credit of the most wonderful performances since the invention of the sidecar. The Land's End to John-o'-Groat's record is held by a 3½ h.p. single and sidecar as is also the Irish End-to-end record, and the six days' sidecar record is also held by a single. Mr. Hugh Gibson recently climbed the dreaded Honister Pass with a Bradbury and empty sidecar, and in your issne of the 16th inst. is a photograph of the same rider climbing Arthur Street, Edinburgh, with three passengers, the combined weight being thirty-six stones, on a similar machine. Mr. Harry Long, in his attempt to cover 20,000 miles in six months, chose a single-cylinder Singer. He has already covered over 5,000 miles and reports "no trouble." Surely these instances ought to prove that the single-cylinder machine for sidecar is quite capable of the work it is called upon to do, and to the raw novice the complication of a twin-cylinder engine is entirely done away with. I should like to hear other readers' opinions. FRED W. ROBERTS.

Punctures.

Sir,— In the accounts of the various trials one sees frequent mention of tyre troubles owing to punctures, while in other parts of your paper one reads accounts of non-puncturable tyres, covers, bands, etc., besides solutions and powders which immediately stop any puncture. Is it because riders do not use these articles or because they do not fulfil all that their makers claim? VERATOR.

The Problem of the Automatic Carburetter.

Sir,—I notice that one or two of your correspondents are rather doubtful about the working of an automatic carburetter, and seem to think that it is not possible to get a perfect mixture at all speeds. Well, I have had some slight experience with most types of automatic car and motor cycle carburetters, and would be very pleased to hear of a carburetter that will give a perfect mixture at both slow and high speeds.

I notice that "E.M.O.," in referring to the Binks carburetter; says that it may give an explosive mixture but not a perfect mixture.

Some time ago I fitted a two-jet Binks carburetter to my 8 h.p. Zenith, and can honestly say that I have never had such a delightful carburetter to control. It is perfectly automatic at all speeds, and engine runs very slowly. As regards the speed it is capable of, I think the fact that my 8 h.p. Zenith ridden by Mr. Griffith and myself when we climbed Arms Hill, Henley-on Thames, to quote your own words, "at terrific speed," is proof sufficient in itself. I think it is the best carburetter I have yet tried, and am still using it.

I need hardly say that I have no interest in Binks carburetters, but I like to give honour to whom honour is due.

W. L. T. RHYS.

Sir,—Your correspondent "J.G.B." has, consciously or unconsciously, hit upon the touchstone by which the true automatic carburetter can be recognised.

No definition of the ideal automatic carburetter has, so far as I am aware, been published in your columns, and perhaps you will allow me to quote Mr. Dugald Clerk's requirements as stated in a paper on "Principles of Carburetting as determined by Exhaust Gas Analysis."

"An ideal compensating contrivance should vary not with varying speed, but with varying quantity of mixture drawn in in a given time. In a car running on the road, for example, the speed of the engine may be kept perfectly constant, but the position of the throttle will vary from point to point on the road, that is, engine speed will be constant, but the volume taken into the engine may vary within large limits. The problem is to charge any given volume of air passing into the engine with a practically unvarying proportion of petrol vapour in a uniform manner.

One might add to this that the proportioning of air and petrol should not, on the other hand, depend on the amount of throttle opening, as an engine might have the throttle set wide open and yet vary in speed over wide limits under varying loads on the road.

Therefore the petrol supply should be controlled by the amount of air passing through the carburetter, and not by the position of the throttle.

Examine the so-called automatic carburetters in the light of these definitions, and one finds that nearly all fail as automatic carburetters, for it is obvious that it should be possible to eliminate entirely the throttle and work on variable-lift inlet valves, and still rely on an unvarying and correct mixture at all speeds.

The carburetter so eloquently described by your correspondent, Mr. G. Duncan, depends on throttle position, and would be useless with variable lift inlets, as would also all multiple-jet instruments.

In my opinion the only one besides the Fafnir which is scientifically a true automatic carburetter is the Stewart-Precision, and I have recently confirmed its capacity for running with variable lift inlet valves by an actual test, which was in every way satisfactory.

F. N. PICKETT.



Edwin T. Heys, of the Manchester Repertory Theatre, lately accomplished an excellent run from Manchester to London on his Dot machine and sidecar, covering the journey without a single involuntary stop. Mr. Heys is now business manager of Miss Horniman's company at the Coronet Theatre, Notting Hill Gate, W. He does all his travelling about on his motor cycle.

Sir,—From the letters which have appeared in your paper, it is evident that the action of automatic carburetters is very little understood. I will endeavour to explain how my two-jet automatic carburetter works.

In this instrument there are two jets each in a separate choke tube; these jets are controlled by a piston throttle. When the piston is right down both jets are shut off. A movement of the piston begins to uncover the small jet which is situated in a very small choke tube, so when the engine is only just turning round, the velocity of air up this choke tube is very great, giving instant starting and very slow pulling. Speed increases as the throttle is further opened until the full limit of power off the small jet is obtained. By this time the mixture is a shade on the rich side, which is necessary for great flexibility. When more power is required, the throttle is further opened and it begins to uncover the main choke tube: air begins to flow through this choke tube, and dilutes the mixture on the small jet, thus giving a more explosive mixture and increasing its volume, this giving more speed; a further opening of the throttle causes petrol to begin to spray out of the main jet, and speed gradually increases until the main choke tube is completely uncovered. As the suction *increases* on the main jet, it *decreases* on the small jet, and this gives a pretty constant mixture throughout, the tendency being, when the main jet is fully uncovered, for the mixture to be a shade on the rich side. However, to accommodate this, a further opening of the throttle, which is all done with one lever, begins to uncover a large air port by which the mixture may be thinned down as much as desired. The sizes of the jet and main choke tube are of vital importance, and as in this carburetter the jets and choke tube can be changed or varied in less than a minute on the road, it is the easiest thing possible to get the correct combination which will allow the throttle to be slammed open and the most violent acceleration obtained. Your correspondent who states that the same results are obtained by moving both levers of a non-automatic carburetter together is hopelessly at fault, and if he will call at my works, I shall be pleased to demonstrate this fact to him, or any other of your readers who are interested. Whatever others may have done, I have totally failed to make a really automatic carburetter which depends on a single jet. When once the idea is grasped of the two jets working together, one automatically correcting the other, then the fact that the automatic carburetter is really satisfactory will be appreciated.

I have noticed in hundreds of instances when just cresting the top of a steep hill, when the engine would otherwise have given out on any carburetter, that shutting the throttle down so that it comes back on to the small jet only will actually cause the engine to "pick up" again, as the velocity past the jet will be actually increased when the engine is running dead slow, whereas in a single jet carburetter the velocity would be insufficient to cause the petrol to spray out at all.

CHAS. BINKS.

Sir,—I was most interested in the recent articles on the problem of automatic carburetters. I agree with "Ubique" in his prediction that the automatic carburetter will take its place as standard on the touring machine of the future, although I think for track riding the two lever type will hold its own. The average business man and the tourist who rides in traffic and on country roads, are the people who can fully appreciate the simplicity of the single lever control.

A few days ago I had the pleasure of witnessing a machine fitted with a B.C.B. floatless automatic carburetter give a very fine performance. It was very interesting to watch the way in which it would crawl through traffic, and the quick pick up by just a turn of the throttle, together with its exceptional hill-climbing power, was to me most convincing. This carburetter does not seem to be very popular, although there are several running about here (Halstead). I do not think it has been on the market many weeks. The rider of the machine informed me that the supply of air in this particular carburetter is admitted through a spring controlled valve, which allows air to pass it in varied quantities according to the speed of the engine, and not in accordance with the throttle position. Therefore the mixture is not weakened when the engine is tugging up stiff hills on full throttle.

CARBURETTER.

[Correspondents are urged to be as brief as possible or their letters will be curtailed.—ED.]

The Mobilisation Scheme.

Sir,—I intend to compete in the National Mobilisation run as outlined in your issue of the 9th inst. Can you tell me my position if I am summoned for riding over 20 m.p.h. in this event? Do the War Office authorities indemnify me against any fine, or do I take all risks?

FRED DOVER.

Sir,—I have read with interest of the proposed Mobilisation Scheme under the heading of "Military Motor Cycle Notes" in your issue of the 16th inst. As a motor cyclist, and a member of the Automobile Association and Motor Union, I feel, however, bound to protest against that portion of the scheme which is described as a "speed test." Everyone knows by now what speed a motor cycle can attain—if there is any doubt about it, there is always a racing track on which the proposed test can be carried out—and by having a competition in which competitors have to return home with "all speed" simply means that the winner will be the competitor who is prepared to take the greatest risk as regards cross roads, other vehicles, and scorching through towns and villages, to the annoyance of the inhabitants. Such behaviour is only calculated to bring motor cycling into disrepute, and invite police interference. I sincerely trust that *The Motor Cycle* will not be guilty of encouraging such practices. If you can arrange the competition in order to demonstrate how large a percentage of the competitors can return home at a reasonable pace, without stoppages for repairs, etc., you will, I am certain, be doing far more to further the cause of military motor cycling than you will be if the competition is carried out on the lines suggested.

GEORGE BIRCH.

[The War Office cannot interfere in the matter of police traps; if riders exceed the limit, they do so at their own risk. With regard to the second letter, it has now been decided that the return journey shall not be a *speed* test.—ED.]

Should Ladies Race?

Sir,—I was sorry to read your leaderette "Should Ladies Race?" as I think you are a little unfair in your views. In my humble opinion we should be allowed to enter for speed events, and the very fact of our wishing to ride in these competitions plainly shows that we are not likely to suffer from "Nerves."

After all an odd accident or two should not cause a scare—look at the crowds of accidents men riders have, and yet they all continue to enter for competitions.

The majority of women will be content with touring, etc., but some of us who are really keen on hill-climbs and have had years of experience would feel it rather hard if we were to be shut out from all the sporting events.

I hope other lady riders will send in their views on this subject.

MURIEL HIND.

Sir,—Would you allow me, through the columns of your widely circulated paper, to thank all the kind friends who have written, telephoned, or called at the cottage hospital since my accident a week ago. Fortunately my fall was not a very serious one, and I hope to be out of hospital in a few days. I was sorry to read your article concerning ladies competing in hill-climbs in last week's issue. I should be very sorry indeed should our entries be refused in the future. I do not think there is any more danger in racing for women than men. I certainly have fallen, but mine is not the first accident that has happened in a hill-climb, often an expert man rider has come to grief. I should like to hear the views of your lady readers on this subject.

N. HOUGH.

SUMMARY OF CORRESPONDENCE.

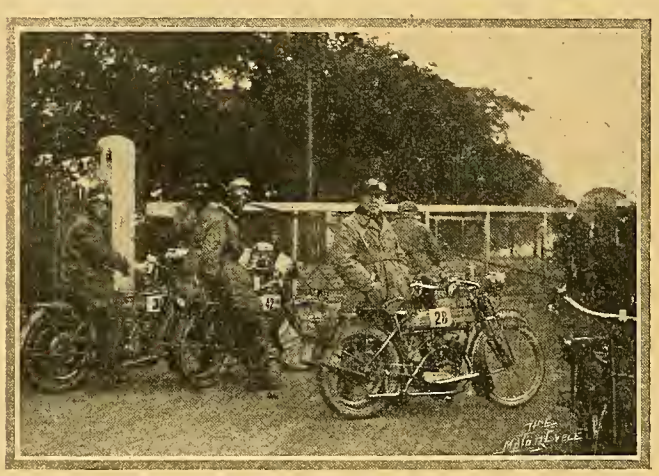
J. F. Cramp asks, and we think with reason, why the Warwickshire County Council do not have the Coventry-Kenilworth main road properly mended and then tar treated? He says, "If the Coventry-Dunchurch Road can be tarred to prevent the dust nuisance, surely the Kenilworth Road is worthy of equally careful treatment.

Will any reader residing within a reasonable distance of Catford, S.E., who feels capable of tackling a difficult problem in connection with a motor cycle engine of old type, kindly communicate with "Perplexed," c/o the Editor.

THE LONDON TO EDINBURGH RUN.

Another Record Entry, and a Long List of Survivors.

FOR the ninth time in succession the Motor Cycling Club's London to Edinburgh run has been a great success. It might be said that the first time the competition was held, it made the Motor Cycling Club, while every subsequent occasion adds a jewel to its crown. The very words London to Edinburgh have magic in them. Their very sound has a magnetic attraction which draws irresistibly, and this year attracted another record entry. It is solely the idea of covering the distance of 400 odd miles between the two capitals inside twenty-four hours



At Sutton Crossing on the Great North Road in the early morning of Saturday. The competitors are A. J. Duncan (Rex), S. Savage (Triumph), H Greaves (2¾ Enfield).

which fascinates the entrant. The drive is not difficult, and very little of it is even pretty. To accomplish it is ridiculously easy. It means simply sitting still for most of the time and letting the machine do the rest, and success almost certainly awaits anyone who can stand the fatigue, and motor cycle riding renders one so extraordinarily fit that there are very few who cannot. To gain one of the special cups the rules are rather more irksome, as schedule time has to be vigorously observed, and success awaits not necessarily the man with the best machine or the best driver, but him who best can guess his speed. Someone suggested bringing in Sutton Bank, which could have been easily done, as the men pass within sight of it after York, and to climb it, say, on formula, after a 220 miles run, would be a really sporting effort, and one really worthy of serious consideration in our opinion, but we fear this suggestion is rather against the M.C.C. idea of what the run should be. What think our readers?

Perfect Conditions.

To revert to the 1912 event. No better weather conditions could possibly have existed. A clear night followed a dull day. Clouds faded from the sky after sunset, and as the daylight waned a bright half-moon *behind* the men shed its soft and cheering rays on the highway. The starting point, that fine open space beginning at the Old Gatehouse Inn, Highgate, was packed with denser throngs than ever an hour previous to the start. Anybody who was anybody in the motor cycling world was there, and a right busy scene it was. Years of experience have taught the M.C.C. officials how to do things, and they have profited. Everything is now splendidly organised. A rapid glance over the machines revealed several points of interest. Commodore Sir R. K. Arbuthnot was there, having travelled all the way from Invergordon specially to compete. G. N. Higgs for the first time had entered a 2 h.p. Alcyon in company with the well-known exponent of that make, N. D. Slatter. Slatter's mount was enamelled blue and was labelled the Blue Bird. The P. and M.'s entered, as they always do, looked surprisingly neat and clean. The method of carrying route cards employed by several was interesting. That fine old veteran, Applebee, sen. (Centaur), the hero of a hundred canine encounters, slipped his round the lamp generator and held it on by means of elastic bands. Charlesworth, a Zenith rider, carried his secure from the elements in a mica case.

Equipment.

W. H. Bedford (Rex-Jap and sc.) had a new and smart-looking electric lamp, the "Nups," by Husband, of Leicester, which was certainly novel in appearance, and possessed a fine compound lens. H. C. Mills (Premier), Hemy (Service), and others more intimately connected with the industry, carried illuminated signs denoting the make of machine they rode. Howard (Zenith and sc.) employed a neat back-rest and a very complete set of touring bags; Karslake, on his invincible Rover, used a big F.R.S. and two Cox-Walker electric lamps, and round his waist was slung an inspection lamp for reading his route card, which, we hear, will shortly be placed on the market by Messrs. Siemens. Gwynne (Indian) relied on two Cox-Walker lamps and a Siemens battery only; Letchworth (Bat) carried a



An unofficial check at the G.N.R. crossing, Sutton Notts. The riders getting away after the train had passed.

The London to Edinburgh Run.—



A halt outside Doncaster, showing H. Huckle (Zenith and sidecar), Hugh Gibson, J. J. Day, and A. Abbot (all on 3½ Bradbury sidecars.)

big brass car lamp; Kerry (N.S.U.) used three baby acetylene lamps and one big Duco; E. B. Dickon (Bat) used the same front Dunlop tyre he used in the London to Edinburgh run last year, and strapped two spare inner tubes to each side of his tank—these acted as knee pads; Pratt this time rode a P. and M. and sidecar gaily lighted by three lamps; Griffith was mounted on a smart-looking Alldays, possessing a wide tank of sensible capacity and a short frame; Wasling (Enfield) carried a big electric car head light, lit by a high voltage battery, and beneath it, mounted on a board, a car clock.

Previous to the start the officials were working their hardest to get their various duties done. Messrs. Seed and Gibbons were busy doling out numbers, which this year were fastened to the side of the tanks; Messrs. Bilney, Collins, Snell, and Blyton looked after the motor bicycles; Messrs. Butterfield and Wightman were busy with the sidecar machines and cyclecars; while it fell to Mr. S. H. Fry's lot to look after the cars.

When nine o'clock approached, night was turned into day by means of Liversedge portable acetylene lights, under the glare of which Messrs. F. T. Bidlake and G. F. Sharp despatched the men. Ten minutes before the start Mr. Charles Jarrott, president of the M.C.C., moved off in his Rolls-Royce, bearing the two travelling marshals, Messrs. R. H. Head (chairman) and A. Candler (former secretary).

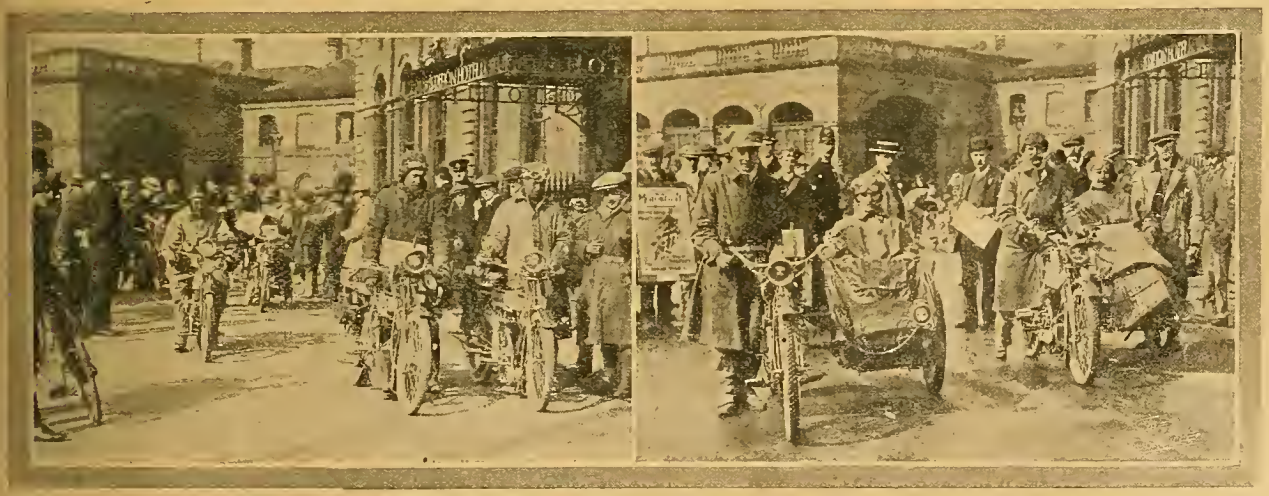
The Start.

The first man to be despatched was H. G. Bell (F.N.), on whose broad shoulders fell the responsibility of the organisation, and well indeed did he deserve the right to carry No. 1. Southcomb May, the hon. secretary, rode a Portland-Jap and sidecar. Both members of *The Motor Cycle* staff who followed the run were well mounted—one on a 3½ h.p. Zenith and the other on the 2½ h.p. Motosacoche, the excellent behaviour of which has previously been referred to in these pages. Guest (Matchless and sc.) after the start hit a tram and ran on to the pavement. Once under way the cold began to be felt, and when the suburbs were left behind it became intense. All along the route interested spectators on motor cycles turned out to see the men go by, and most of them, we regret to record, inconsiderately turned their head lights so that the unfortunate competitors had to face their full glare. The first check was at Hatfield, outside Water's garage, and this point was reached without incident. The roads were in splendid condition, and there was very little dust. The writer rode the Zenith, which pulled well, and, thanks to the fascinating Gradua gear, was a real pleasure to drive, especially up Digswell and all other hills encountered, where a touch of the gear handle eased the load and sent the engine roaring up the slope. The way through Welwyn was shown by willing helpers, and then followed an easy run through Stevenage to Baldock, after which the straight Roman road to Biggleswade was taken.

Tyre Troubles.

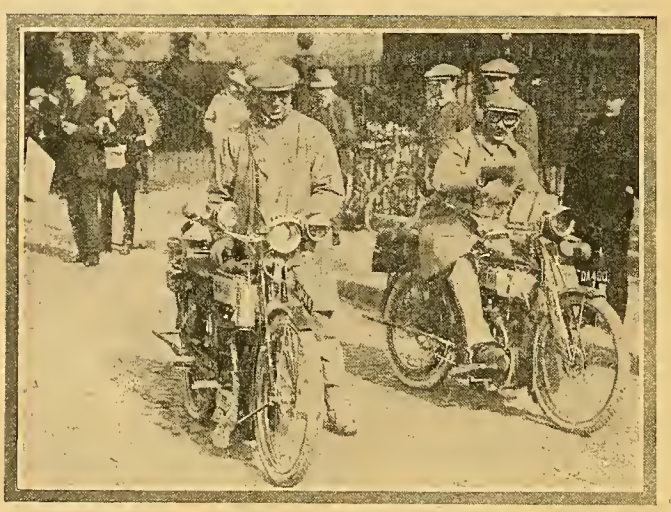
Three miles from this town my back tyre collapsed, due to the butt-ended tube blowing out. Then there ensued half an hour's struggle with the new tube, the valve of which refused to go in its hole. All the assistance available was from a semi-drunken countryman, and was of little use. Meanwhile the competitors sped by in shoals—a most extraordinary sight. Finally, I had to beg for the assistance of someone, and the first man I hailed turned out to be Cyril Patteson (accompanied by C. J. Feeney, both on Moto-Rêves), who, even though he was a Cup man, gladly gave most welcome and skilful aid. Poor fellow, he deserved a better fate, as in poor return for his charitable assistance his engine seized up before Doncaster was reached.

The excellent refreshments at the Swan Hotel, Biggleswade, put new life into us. Coffee is a mild stimulant, and warms the interior better than any other beverage. The lamps the Zenith carried were an ordinary Broadhurst acetylene and a C.A.V. electric which Messrs. Vandervell fixed up specially for the trip. Soon after Hatfield I realised the lamp was tilted too much downwards, but, thanks to the simple way in which it was carried, it was possible to alter the angle while running. This lamp gave an excellent light, and was no trouble until one of the Simplex terminals gave way near Eaton Socon. Now the writer has his own method of securing Simplex terminals, and the fact that one he himself had dealt with did not come loose was distinctly pleasing. The tip is a simple one to follow. Fix the terminal in the usual way, and before hammering it up loop a thin piece of copper wire round the groove, and twist the ends round the insulated portion of the cable, and then hammer it up.



(1) Leaving the York Control. W. B. Gibb (Douglas), E. A. Colliver (Zenith), and C. T. Newsome (Rover) at the Station Hotel. (2) B. Alan Hill (7 h.p. Indian sidecar), and J. J. Day (Bradbury sidecar).

The London to Edinburgh Run.—



Com. Sir. R. K. Arbuthnot, R.N. (3½ h.p. Triumph), and T. H. Haddock 2¾ h.p. (A.J.S.) about to leave York.

Meanwhile a respectable-looking young Scot, who, poor fellow, was walking to Edinburgh, and said he hoped to get a lift from someone in the competition, came up and held the matches while the break was seen to. The delay through the puncture was a serious set-back, and the Zenith was now among the sidecars and enveloped in their dust. Everybody was travelling as fast as was safe in the dark, and it was somewhat difficult to get away from them. However, at Alconbury, as it always does if the weather be fine, a welcome glimmer appeared in the east, the road broadened out, and in the increasing light the dusty sidecars were left behind.

The First Surprise Check.

Near Norman Cross the Cup men had to stop for a surprise check. The section from Eaton Socon to Norman Cross is famous for its much-betrapped villages, and it was quite curious by night to go through them at legal limit, while by day 17 m.p.h. incurs a heavy fine. In nearly every village some enthusiasts were about to watch the long procession. Just when it was light enough to see both the lamps on the Zenith went out, but, fortunately, it was just possible to do without them. I stopped for a stretch on the hill leading into Stamford, and Eli Clark came up and reported his back tyre had come off some way back. The Zenith rapidly forged ahead, and dropped into Grantham, having made up much lost time. The fine yard at the George Hotel was thronged with machines, and the smart way in which the machines were filled up with petrol reflects great credit on the organisers.

The worst part of the journey was over, and the men fortified by breakfast, the next section was tackled with lighter hearts and in better spirits. Incidents during the night run were few and far between. In the early days men used to fall asleep and tumble off, but cases of this kind are now unknown. Lamp troubles used to be frequent, but now the use of several lamps, or of one lamp and two generators, has changed all this. Lamps, however, still get loose, and one or two men were seen carrying their head lights on the luggage carrier. Beyond Newark was the second check for those entered for the cup. At Crow Park level crossing the Zenith overtook the vanguard, nearly thirty being hung up by the gates being closed. The pace was now reduced, and the run into Doncaster made "under easy steam." The road from Bawtry into Doncaster was very rough, and on this portion my accumulator box, though provided with clips riveted and soldered on, began to come adrift. Both straps holding in the accumulators broke loose and the two latter were lost, all of which teaches its own lesson. The C.A.V. lamp itself was a great success and a real comfort, and a little extra care over the accumulator terminals and the method of carrying the batteries themselves would have saved all trouble. Corcutt's garage was the first check after breakfast, and here Sir R. K. Arbuthuot, W. Cooper, Haddock, and Wasling were signing on as I arrived. Over the remainder of the section the roads were rather rough. York was reached at 7.15, after an easy run in a warmer and more congenial temperature, through Ferrybridge and Tadcaster.

Incidents of the Night.

Here Mr. Charles Jarrott watched a number of the early arrivals sign on, while a few of the comparatively scanty incidents of the first half of the journey came to light. S. B. White (Service) reported valve trouble, while Higgs (Alcyon), whom I had seen stopped some miles back with Slatter helping him, had been in similar difficulties. Brough arrived with a marvellously clean engine and an untarnished exhaust pipe. Bellchamber (Rover) reported an internal short in his enclosed magneto, which he traced and remedied without difficulty. Several entered for the cup became bored with the tedious necessity of keeping dead on schedule and continued the journey without heeding the necessary restrictions. Among these were Jacobs and Applebee. R. C. Davis arrived with a flat tyre, while Chater-Lea (Chater-Lea sc.) had a puncture before Grantham. Southcomb May was delayed somewhat by the carbon brush holders of his magneto coming loose. Huckle (Zenith sc.) suffered carburetter trouble. White (Rex sc.) reported delay through a loose magneto sprocket. L. E. Cass (Quadrant sc.) had had trouble with the cones on his Armstrong gear coming undone. The York check, where breakfast was served, was in the capable hands of the Rev. E. W. Gedge.

At York a water cart had been busy on the tram lines, and several riders were performing complicated evolutions in consequence. At Easingfold, some thirteen miles from York, came the first secret check in the second section, set with some skill.

The roads continued good, and the coldness of the morning was gradually overcome by the sun until it was as warm as could be wished. Nearly all the way between York and Newcastle the competitors were bunched more closely together, and this afforded an excellent opportunity of studying the running of the various makes. In particular the two Motosacoches were interesting, as they were getting along at a steady pace, which pace, to one riding a heavy single, came as a surprise. Certainly these small machines have wonderful engines.

At Northallerton, Croft, and Neville's Cross were more checks, the two latter being in the nature of a surprise. Newcastle would have proved an awkward place to negotiate but for the excellent way in which the police held up all traffic for the competitors. The control was outside the Newcastle and District Motor Club, and its arrangement was excellent in every way. On arrival the machine was taken away and placed in the square opposite the club, while the rider signed on and made a rush for lunch and a wash. Petrol and oil were easily got, and there was no difficulty or unnecessary delay. Before the leading singles left the



R. O. Clark (2¾ h.p. F.N. and sidecar) travelling at a good speed between York and Newcastle. The photograph was taken from a sidecar just following. Clark's F.N. is the smallest engine to complete the double journey with a sidecar and passenger.



W. Cooper (Bradbury), D. S. Baddeley (Baddeley), and P. Phillips (Douglas) passing through Dringhouses near York.

first sidecars were arriviug, all looking well and apparently running to time. The light F.N. and sidecar seemed especially cursed with tyre troubles, a fate which this small engined combination by no means deserved. Out of Newcastle the road is the worst in England, and as no care had been bestowed on it the bumping was awful.

Caught in a Surprise Check.

At Morpeth there was another check, and thereafter to Alnwick the vile surface played havoc with the accessories. At Belford a neat surprise check caused an unseemly flutter, quite half-a-dozen riders hastily concealing themselves behind a stone wall and consulting watches. In many cases the check was too much for them, especially as a marshal walked out and caught them redhanded as it were. From Alnwick and Berwick the road was slightly better with several curves and sharp turns on which many emphasised their cornering. At Berwick a sharp left turn and a steep rise, ending in a sudden turn up a gradient, led to a paved yard and to the tea control. Tea was served in a very old and spacious dancing hall. Outside the clanking was worth hearing, as new arrivals realised a second too late what the gradient really was. Quite an unusual number turned up with their lamps, whose gorgeous and complicated arrangements had been their joy at Highgate, tied on their carriers in a crumpled condition.

Scotland at last!

Some miles outside Berwick one of the Douglas riders passed astride the carrier of another Douglas. He had suffered a stripped timing gear at Berwick. Here also the Swift had sprung a bad leak in its tank, and it was only by doing much temporary repairing that the machine was driven to Edinburgh. Into Cockburnspath, where there was another control, the road was again vile, and everyone was horribly shaken. The Scots, as usual, were most enthusiastic, every village being crowded. Checks were situated in both Dunbar and Haddington. The final ones before East Preston Street were the last on the journey. Thereafter the speed of all seemed to increase, as no less than ten machines passed going fast into Edinburgh, making clouds of particularly penetrating dust. Then at last Edinburgh was reached, with crowds of people all standing in the road as close to the competitors as possible. Fortunately, the Edinburgh police are excellent traffic managers, but even then it took an open cut-out and a low gear, shouts, and, in fact, all the noise possible to reach the Royal Hotel in safety.

Extraordinarily little trouble was noticed on this trip. Here and there, it is true, tyre troubles such as delayed Haswell's two-speed Triumph, the A.S.L., and the F.N. lightweight were encountered, and occasionally some man with a sooted plug or belt trouble was to be seen, but in the main nothing interesting was apparent, and it was not until the finish that any incidents could be learned.



W. P. Tippett (Humber), and N. D. Slatter (Alcyon) at the finish of the run.

Unfortunately, two accidents involving some injury to the riders have to be recorded. Marians hurt his arm through a saddle spring breaking, and McKechnie, on the Dot, broke his collar bone, due to a burst tyre. Luckily, a man with a knowledge of first-aid was present, and by the time a doctor (who was also a sidecar passenger) came Marians's arm had been bandaged up. McKechnie was removed to Morpeth by the driver of a private car, who very kindly cleared out all his passengers in order to accommodate the injured man. Howe, on a Rudge, ran into the roadside during the night, and appeared considerably dazed when picked up, but was otherwise unhurt. North upset his sidecar and himself at a corner, due, it is said, to his passenger being asleep and not hearing the request to lean out. Frankenstein also arrived at Edinburgh with a smashed lamp and buckled front mudguard, while another report speaks of a smashed Rex beyond Morpeth.

Few Accidents.

Mechanical breakages seemed fairly rare, except for the number of lamp brackets already referred to, but a Service broke its frame and the already mentioned Swift suffered a leaky tank. R. Lord (Rex) had three punctures and endured belt trouble on two occasions, these latter both occurring within easy reach of the finish. Gerald Bunn (A.S.L.) had



Competitors' machines ranged in the Newcastle Motor Club Gardens.

The London to Edinburgh Run.—
the flattest head lamp that has been seen for some time, due to charging a wall at Morpeth.

All arrangements for meals and refreshments were carried out as well as could have been wished, and all seem to have enjoyed themselves to the full.

In Alexander's garage a great deal of work was being put into the various machines preparatory to the return journey. Boswell (Ariel) had a leaking tank, Letchworth (Bat), Peppercorn (Baddeley), Webb (Bradbury), and Deacock (N.L.G.) all had smashed lamps or brackets to attend to, Beal (N.S.U.), was busy with a new oil pipe nipple, Wasling (Enfield) repairing a mudguard, while on the G.W.K. a cover had been changed and the friction wheel replaced, as it had been badly scored during the run. On the small F.N. and sidecar the seat pillar and inlet pipe were repaired while the driver and passenger were busy with the rear tyre.

Great credit is due to the 2½ h.p. Motosacoche and the 3½ h.p. Zenith, the excellent running of which is responsible for the punctual arrival of our representatives. The Zenith was shod with Kempshall covers, which gave absolutely no trouble. The tube which failed at Biggleswade was not of the same manufacture as the tyres. Among the silver medallists, Roy Walker owed his had luck to tyre troubles. Great credit is due to the cyclecars which came through. The G.W.K., A.C., Morgan, Chater-Lea, the *élite* of this type, did extremely well. E.M.P.B.

List of Medal Winners.

The following are the results of the outward journey, subject to confirmation:

* Signifies that member entered for the Motor Cycling Club Challenge Cup.

† Signifies that member entered for the Special Gold Medal Return Journey Competition.

c Signifies that member entered for the Clark Cup (double journey).

w Signifies that member entered for the Wells Cup (single journey).

Gold Medals.

Harry G. Bell (5-6 F.N.)
Com. Sir R. K. Arbuthnot (3½ Triumph)
*P. Phillips (2¾ Douglas)
D. S. Baddeley (6 Baddeley)
*Joseph Stevens (2¼ A.J.S.)
†W. Cooper (3½ Bradbury)
*T. H. Haddock (2¼ A.J.S.)
*W. P. Tippett (3½ Humber)
†N. D. Slatter (2 Alcyon)
*Edward Pond (3½ Rudge)
J. Marians (6 Zenith)
*A. J. Dixon (3½ Singer)
F. E. Wasling (2¾ Enfield)
*P. Shaw (3½ P. and M.)
†A. V. Deacock (6 N.L.G.)
*F. W. Applebee (2¾ Centaur)
W. Price (5½ Cleveland)
*Gerald Bunn (3½ A.S.L.)
†A. Webster (2¼ Handy Hobart)
*H. J. Beal (3 N.S.U.)
*R. G. Charlesworth (3½ Zenith)
*G. Boswell (3½ T.T. Ariel)
A. J. Duncan (6 Rex)
*F. J. Watson (3½ Swift)
*H. Greaves (2¾ Enfield)
Daniel Barratt (3½ Triumph)
*A. T. Stanton (3½ Bradbury)
A. E. Catt (3½ Triumph)
*Harold Karslake (3½ Rover)
Edwin Gwynne (7 Indian)
*D. W. Popplewell (3½ Triumph)
Ronald Clark (3½ Rudge)
*F. C. Wasley (2¾ Douglas)
Stanley Webb (3½ Bradbury)
*A. C. Robbins (3½ Humber)
Sidney Savage (3½ T.T. Triumph)
Arthur Lister (3½ T.T. Triumph)
*D. H. Noble (3½ Rover)
†G. H. S. Letchworth (8 Bat)
*E. A. Collins (3½ Zenith)
†W. E. Rootes (3½ Singer)
*W. B. Gibb (2¾ Douglas)
A. G. Peppercorn (3½ Baddeley)
*Eli Clark (2¾ Douglas)
*C. T. Newsome (3½ Rover)
†R. Croucher (3½ Abingdon)
*C. Henry (3½ Service)
†J. Kerr (3½ N.S.U.)
*H. E. Davidson (3½ Kerry)
†James Baker (3½ Alldays)
*Geo. Brough (3½ Brough)
†E. B. Dickson (8 Bat)
*G. T. Gray (3½ Rudge)
†S. J. Bellchamber (3½ Rover)
†J. S. Holroyd (2½ Motosacoche)
†C. E. Lovett (3½ Triumph)
*F. Begley (2¾ Hazlewood)
†J. A. Campbell (3½ Rudge)
*G. L. Fletcher (2¾ Douglas)
†Herbert Le Vack (2½ Motosacoche)
*H. C. Mills (3½ Premier)
†W. F. Guiver (3½ Rudge)
*S. F. Garratt (3½ Premier)
†G. Griffith (3½ Alldays)
*Alec Walsgrove (2¾ Hazlewood)
†H. R. Whitmore (3½ Rudge)
*J. Sydney (3½ Quadrant)
*Harold Patterson (2½ Moto-Reve)
†H. G. R. Slingo (3½ Rover)
*w*cR. E. Guest (8 Matchless sc.)
L. A. Baddeley (3½ Baddeley)
*w*W. H. Platt (3½ P. and M. sc.)
cR. C. Davis (8 Chater-Lea sc.)
F. Frankenstein (3½ Scott)
G. B. Fry (3½ Quadrant)
w†J. P. Le Grand (6 Rex sc.)
J. Dawson (3½ Triump.)
w†W. A. Jacobs (6 Rex sc.)
P. D. Walker (3½ T.T. Rudge)
Jack Hasiam (6 Zenith)
*w*J. Chater-Lea, jun. (8 Chater-Lea sc.)
J. R. Blackburn (6 Zenith)
*w*Geo. Wray (3½ Bradbury sc.)
G. A. Reed (2¾ Humber)
w†A. J. Sproston (3½ Rover sc.)
J. R. G. Rowden (3½ Triumph)
cH. P. Beasley (3½ Rover sc.)
S. Sawer (3½ Premier)
w†R. O. Clark (2¾ F.N. sc.)
Fred. Dover (3½ Premier)
*w*S. T. Tessier (7-8 Bat sc.)
G. P. Howe (3½ T.T. Rudge)
*w*A. Mahon (3½ Rudge sc.)
†Southcomb May (8 Jap, Portland sc.)
cF. E. Pither (6 Enfield sc.)
Elijah Wells (4 L.M.C. sc.)
*c*W. H. Bedford (6 Rex-Jap sc.)
J. C. Haward (5-6 Zenith sc.)
*c*C. W. Meredith (3½ Bradbury sc.)
w†H. A. Sudfeldt (6 F.N. J.A.P. sc.)
*w*cH. E. Hull (7 Indian sc.)
*w*cF. C. North (3½ Ariel sc.)
†J. R. Haswell (3½ Triumph sc.)
J. Jewell (3½ P. and M.)
G. Walker (2¾ Enfield)
*w*W. Barratt (3½ Rudge sc.)
Dr. C. B. Moss-Blundell (3½ B.S.A.)
*w*Jno. W. Hewson (5 A.J.S. sc.)
P. G. E. James (7 Indian)
*w*W. Hugh Gibson (3½ Bradbury sc.)
w†B. A. Hill (7 Indian sc.)
*w*W. H. Wells (7 Indian sc.)
*w*cF. Smith (5-6 Clyno sc.)
w†H. Hinckle (6 Zenith sc.)
*c*A. Abbott (3½ Bradbury sc.)
cT. G. Proctor (7 Indian sc.)
*w*P. Platt (3½ Bradbury sc.)
*w*Geo. Stevens (5 A.J.S. sc.)
*w*L. Austin (5 A.J.S. sc.)
*c*C. F. Halsall (8 Matchless sc.)
cGeo. Nott (8 Matchless sc.)
cL. E. Cass (4½ Quadrant sc.)
*w*R. Lord (Rex sc.)

Cyclecars.

Dr. D. B. Howlett (5-6 A.C. Sociable)
†H. F. S. Morgan (Morgan Runabout)
W. Chater-Lea (8 Chater-Lea)
†J. Talfourd Wood (8 G.W.K.)
†C. M. Keiller (8 G.W.K.)

Silver Medals

*w*Roy W. Walker (3½ New Hudson sc.)
w†F. White (6 Rex sc.)
w†A. G. Clayton (3½ Humber sc.)

The Return Journey.

Glorious weather again favoured those of the competitors who had entered for the return journey, of whom seventy-four had been timed out of Edinburgh by F. T. Bidlake. The first man left at just after 2 o'clock on Monday morning. During the first part of the trip it was very cold, but later the weather was warm, though the dust was trying. A large crowd assembled at Barnet to welcome the arrivals, the first of whom to be greeted was Charles Jarrott. Nearly every man questioned declared he had had a glorious run, and of incidents there appeared to be hardly any to record.

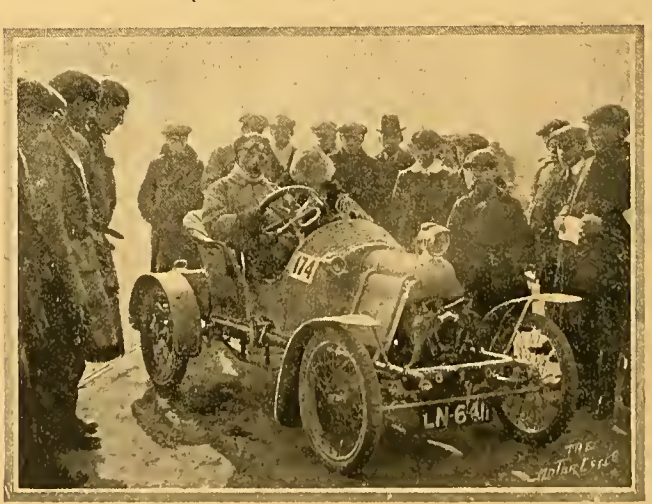
The first competitor to sign on was W. Cooper at 10.30, who brought the news that Brough was running to a second, and that despite two punctures north of York he had reached the control punctually. Two men carried extra passengers. Begley had Baker on his carrier, whom he had carried on part of the outward journey and all the way back. Baker had had trouble with a bearing. Dew had timing gear trouble at Berwick on the way north, and was brought in by Fletcher, while Pither suffered tyre trouble. The following reached Barnet:

Phillips (2¾ Douglas)
Stevens (2¼ A.J.S.)
Cooper (3½ Bradbury)
Haddock (2¼ A.J.S.)
Tippett (3½ Humber)
Slatter (2 Alcyon)
Dixon (3½ Singer)
Shaw (3½ P. and M.)
Deacock (6 N.L.G.)
Appleton (2¾ Centaur)
Webster (2¼ Hobart)
Beal (3 N.S.U.)
Charlesworth (3½ Zenith)
Boswell (3½ Ariel)
Watson (3½ Swift)
Greaves (2¾ Enfield)
Karslake (3½ Rover)
Popplewell (3½ Triumph)
Wasley (2¾ Douglas)
Robbins (3½ Humber)
Noble (3½ Rover)
Colliver (3½ Zenith)
Roots (3½ Singer)
Gibb (2¾ Douglas)
Eli Clark (2¾ Douglas)
Newsome (3½ Rover)
Croucher (3½ Kerry-Abingdon)
Henry (3½ Service)
Davidson (3½ Kerry-Abingdon)
Brough (3½ Brough)
Gray (3½ Rudge)
Bellchamber (3½ Rover)
Holroyd (2½ Motosacoche)
Lovett (3½ Triumph)
Begley (2¾ Hazlewood)
Campbell (3½ Rudge)
Fletcher (2¾ Douglas)
Le Vack (2½ Motosacoche)
Mills (3½ Premier)
Guiver (3½ Rudge)
Garrett (2½ Premier)
Griffiths (3½ Alldays)
Walsgrove (2½ Moto-Reve)
Slingo (3½ Rover)
Guest (8 Matchless sc.)
Davis (8 Chater-Lea sc.)
Beasley (3½ Rover sc.)
Clark (2¾ F.N. sc.)
Pither (6 Enfield sc.)
Bedford (6 Rex-Jap)
Meredith (3½ Bradbury sc.)
Hull (7 Indian sc.)
North (3½ Ariel sc.)
Haswell (3½ Triumph sc.)
Hill (7 Indian sc.)
Smith (5 Clyno sc.)
Huckle (6 Zenith sc.)
Abbot (3½ Bradbury sc.)
Proctor (7 Indian sc.)
Halsall (8 Matchless sc.)
Morgan (8 Morgan)
Wood (8 G.W.K.)

The engine dimensions of R. O. Clark's 2¾ F.N. sc. were 65 by 85 mm., the smallest sidecar machine ever seen in this competition; a really wonderful performance.

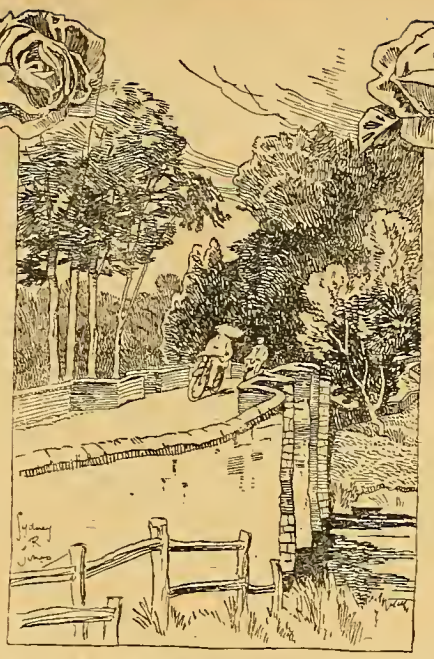
Letchworth (Bat) retired owing to a broken frame.

The only absentees at one a.m. were Letchworth, Kerr, Southcomb May, Nott, Cass, and Keiller.



Mr. and Mrs. J. Chater Lea in the 8 h.p. Chater Lea cyclecar which attracted much attention all along the route.

CURRENT CHAT



TIME TO LIGHT LAMPS.

May 30th	... ...	9.2 p.m.
June 1st	... ...	9.4 ,,
,, 3rd	... ...	9.6 ,,
,, 5th	.. ...	9.8 ,,

A.C.U. and the Grand Prix.

Special arrangements are being made by the A.C.U. for those members who wish to see the Grand Prix race. Additional interest is lent this year by the unusual number of English entries.

R.A.C. and Ascot.

There should be adequate provision for motorists attending this year's meeting at Ascot (from June 18th to 21st). All six motor enclosures have been secured by the R.A.C. This is the first time that self-propelled vehicles have been allowed inside the course.

Canadian Motor Cyclists' Association.

An association has been formed in Canada on the lines of the Federated Association of Motor Cyclists in the United States. The new body will be known as the Canadian Motor Cyclists' Association, and an agreement will be drawn up and signed with the F.A.M. to enable Canadians to ride at F.A.M. meetings and American riders to race in Canada. The first annual championship will be held on the Hamilton Jockey Club's track.

Road Dangers at Night.

Motor cyclists riding by night from Crowle to Gainsborough *viâ* Epworth should be careful of the ferry at Walkereth. The signpost on the main road reads "To Gainsborough," but Mr. Cave (who travels by motor in the interests of the Turco Co.) suggests that it should read "To Walkereth Ferry," as he recently found himself within a yard or so of the water's edge, there being no signpost to indicate that there was a ferry anywhere in the neighbourhood.

M.C.C. Inter-team Trial.

The complete list of clubs which have promised entries for the M.C.C. inter-team Trial for *The Motor Cycle* Cup to be held on June 15th, at Daventry, is as under: Bedfordshire and District M.C.C., Birmingham M.C.C., Bristol M.C.C., Bristol C. and M.C., Derby and District M.C.C., Derbyshire and North Staffs A.C., Coventry and Warwickshire M.C., Essex M.C., Herts County M.C.C., Liverpool M.C.C., Luton and South Beds. M.C.C., Mersey M.C., Motor Cycling Club, Northants M.C.C., Norwich and District M.C.C., Norfolk M.C.C., North-west London M.C.C., Nottingham and District M.C.C., North Middlesex M.C.C., Oxford M.C.C., South Birmingham M.C.C., South-east London M.C.C., Sheffield and Hallamshire M.C.C., Sutton Coldfield and Mid-Warwickshire A.C., Walthamstow M.C., and Wolverhampton M.C.C.

Grand Prix de Champagne.

The Touring Motoclub de France rejoices in having secured several English entries for its Grand Prix de Champagne, which takes place on June 2nd. In Class 1. Berwick will ride a 2¾ h.p. New Hudson and H. Graham Dixon a 3½ h.p., while R. G. Mundy will ride a 3½ h.p. Singer and J. Cocker a 2½ h.p. Singer.

Speed Limit Applications.

The application by the London County Council for a ten-mile speed limit at the road junction at Swiss Cottage has been refused. The A.C.U. and A.A. and M.U. were represented at the inquiry.

SPECIAL FEATURES.

MY MOST EXCITING RIDE.
LONDON-EDINBURGH RUN.
PETROL CONSUMPTION.
BIRMINGHAM-LAND'S END-BIRMINGHAM

The Scottish Auto Cycle Union.

Already the Scottish A.C.U. represents some seven hundred motor cyclists, and its future seems assured. The following have been elected as a General Committee: Messrs. Norman Macmillan, C. H. Macmillan, Campbell McGregor, R. J. Good, J. R. Alexander, William Morrison, J. D. Morrison, J. S. Fulton, George H. Cutbush, John Gow, Alex. R. Fraser, F. Salvesen, T. R. Marshall, R. W. C. Stevens, John R. Thomson, G. E. Whitehouse, W. Yeaman, J. R. Nisbet, jun., D. C. Paterson, A. L. Watt, Bruce Syme, J. Craig, jun., Simon McLean, A. F. Sinclair, D. S. Baddeley, and R. J. Smith. Mr. James S. Fulton, 151, West Regent Street, Glasgow, has been appointed secretary, and the Marquis of Tullibardine is to be asked to accept the presidency. In view of the good work done by Messrs. Norman Macmillan, John Gow, and John Adam, chairmen of the Edinburgh, Glasgow, and Scottish Automobile Clubs respectively, the first-mentioned has been appointed chairman of General Committee, the second vice-chairman, and Mr. Adam a vice-president in the company of Messrs. Robert Todd and J. R Nisbet.



INTER-'VARSITY HILL-CLIMB.
A. C. Hardy, Oxford (4 h.p. Norton), about to cross the finishing tape. (See pages 582-583.)



BIRMINGHAM—LAND'S END—BIRMINGHAM COMPETITORS.
A group of competitors in the Birmingham M.C.C. run to Land's End and back assembled at the Land's End on Sunday.

English-Dutch Reliability Trial

Next week we hope to publish the list of British representatives in the international contest to be held in Holland on August Bank Holiday. Over a score of club committees have assisted in the selection of the British teams.

British Successes in France.

At the two-day Meeting Automobile du Mans, organised by the Automobile Club de la Sarthe et de l'Ouest, British machines scored heavily. On the first day the results were :

Up to 500 c.c.—1, R. G. Mundy (Singer), 41⅕s. ; 2, H. G. Dixon (New Hudson), 42s. ; 3, V. Taylor (3½ Rudge), 43s.

Up to 350 c.b.c.—1, H. G. Dixon (New Hudson) ; 2, J. Cocker (Singer) ; 3, Péan (Peugeot).

Sidecars, etc.—1, H. G. Dixon (New Hudson) ; 2, Bouville (Bedelia).

The result of the joint hill-climb was :

Lightweight and 500 c.c. Classes.—1, R. G. Mundy (Singer) ; 2, H. G. Dixon (New Hudson).

Sidecars.—H. G. Dixon (New Hudson).

FUTURE EVENTS

June 1.—Birmingham M.C.C. Open Hill-climb at Wenlock Edge.
1.—Liverpool A.C.C. Open Hill-climb.
1.—B.M.C.R.C. Race Meeting.
„ 14 and 15.—Dublin M.C.C. Open 24 Hours' Reliability Trial.
„ 15.—M.C.C. TEAM TRIAL.
„ 28.—JUNIOR TOURIST TROPHY RACE.
„ 29.—North Middlesex M.C.C. Open 12 Hours' Reliability Run.
„ 29.—Mersey M.C. Open Hill-climb.
July 1.—SENIOR TOURIST TROPHY RACE.

Unofficial Records.

At Penzance last week-end we were informed that a rider of a Quadrant was timed away from Land's End on Saturday evening in an attempt to capture the End-to-end record. The rider in question has already failed in an attempt to beat the lightweight record.

T.T. Entries.

Four more entries have been received for the Tourist Trophy : F. W. Owen (Norton), J. R. Hayes (K.S.), and N.S.U. Co. (one machine), senior ; N.S.U. Co. (one machine), junior. The N.S.U. machines will be ridden by Gassert, who rode last year in the Isle of Man.

Hill-climbing.

T. M. G. Chapman, of Cadewell, near Torquay, advises us that recently his 1912 pattern T.T. 3½ h.p. Arno, ridden by George Fleming, made a clean ascent of Stentiford's Hill, Torquay, from a standing start. The gear was carefully measured and found to be 5 to 1. The hill is 250 yards in length, with an average grade of 1 in 5.

Speed in Sevenoaks.

Many motor cyclists travel too fast on the London-Sevenoaks road in order to get up the hill on the London side of the village, and then forget to slow down on arrival in the village. An application for a ten-mile limit is contemplated, but the A.C.U. has managed to get the Kent County Council to withhold their application subject to an appeal being made to motor cyclists to moderate their speed. It is to be hoped riders will exercise caution, not only in Sevenoaks, but all towns and villages, and so prevent these complaints being made.

The Next Mobilisation Test.

There are still a large number of well-known motor cyclists who have not yet entered for the mobilisation test on Sunday, June 9th, which ought really to prove a most interesting event. Competitors should select routes which will avoid the greater towns. The object of the competition is apparently not quite clear to some people.

For those who have not followed the scheme of the competition it may be as well to repeat the conditions. All those who send in their applications will receive a postcard on Saturday, June 8th, telling them the rendezvous (which will be within fifty miles of Charing Cross). The time of arrival is fixed at 1 p.m. on June 9th, and competitors should time themselves so as to arrive on the stroke of the hour. All those who wish to take part should refer to the conditions on page 531 in the issue of May 16th last.



J. Cocker (Singer) competing in the hill climb at Le Mans on Sunday last. Singer machines were conspicuously successful at this important French meeting.

BIRMINGHAM-LAND'S END-BIRMINGHAM.

A Sporting Long Distance Trial for the Lycett Trophy.

THE second annual competition organised by the Birmingham M.C.C. for the Lycett trophy took place on Saturday and Monday last over the same course as last Whitsuntide, viz., to Land's End and back. Despite the arduous nature of the contest, each day's journey necessitating seventeen hours' riding, there were over forty entrants. The start was at 3 a.m. on Saturday last, from the Maypole, Alcester Road, the competitors having assembled half an hour or so earlier in order to have their numbers allotted and watches sealed. An interesting feature of this run was the adoption of the sealed watch for timing, which system, we believe, was first instituted by the Bradford M.C.C., of which club Mr. Vernon Brook, the Birmingham hon. sec., was at one time a prominent official. The competitor's sealed watch has effectually settled all disputes as to timing. At one period a competitor with a good watch would find that checkers' watches varied several minutes, and the wrong man was declared winner; but in the sealed watch system every competitor is timed from his own watch.



The silver tropny, value 30 guineas, presented by Mr. E. R. Lycett.

The air was crisp and cold as the first competitor set out on his long run with lamp burning brightly.

The Route.

The route was as follows: Alcester, Evesham, Cheltenham, Painswick, Stroud, Marlsworth, Old Sodbury, Bath, Shepton Mallet, Taunton, Cullompton, Exeter, Two Bridges, Tavistock, Callington, Liskeard, Lostwithiel, St. Austell, Truro, Redruth, Penzance, Land's End.

The first secret check proved to be approximately six miles south of Evesham, but so keen was the competition for the trophy that all were close to time. Most of the competitors ran most regularly, and, the first part of the journey being over familiar ground, little of incident occurred.

There was a fine pull up out of Bath, which was a foretaste of more to follow in Devon and Cornwall. Several were reported missing at this point. K. L. Spiers (Enfield sc.) and J. H. Slaughter (L.M.C. sc.) were notable absentees. Punctures were not infrequent, but generally the riders ran most regularly, which, indeed, was necessary if 20 m.p.h. was to be averaged. Outside Radstock we passed George Bell (New Hudson sc.) repairing a puncture. A 3d. toll at Burr Bridge gave the stragglers an opportunity to catch up and chat over the events during early morning.

Performances of the 3½ h.p. Sidecars.

Quite a feature of the run was the wonderfully consistent running of some of the 3½ h.p. sidecar machines. In spite of the numerous hills and severe nature of the conditions, splendid progress was made, and several reported absolute non-stops. A. D. Arter's James, for instance, was never once seen stopped, and the way his three-speeder annihilated the Devonshire gradients, often on the intermediate ratio, won universal praise. S. Wright and B. Yates were also plodding along in regular style on their 3½ h.p. Humber sidecars. The former started at 12.45 a.m. from Coventry, and started in the competition at 3.2, so he had prolonged his journey unnecessarily.

Bourke (New Hudson) reported to the writer that he never had occasion to open his toolbag on the outward run. P. J. Evans was driving a 6 h.p. Enfield, with his wife in the sidecar. We had a number of chances to observe its speed, and we noted particularly that he had no difficulty at all in keeping pace with the bicycles. Two new twin A.J.S. machines attracted attention by reason of their silence and smooth running, whilst Fowler's Norton with Shelley gear was always amongst the leaders.

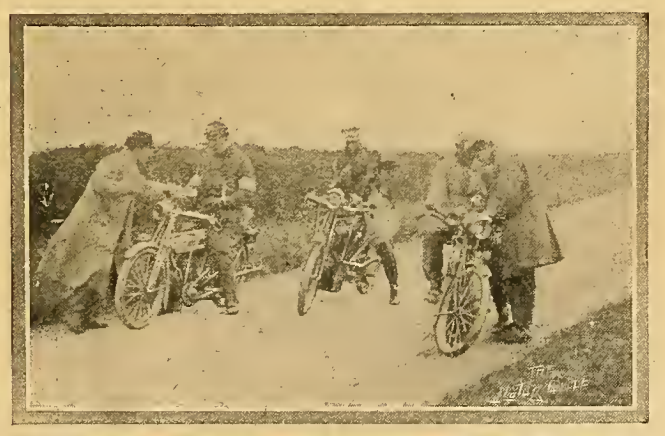
The first arranged stop was at the Bude Hotel, Exeter, for lunch (164 miles). Thereafter the course became much more severe, and single figure gradients were frequent.

To make matters worse, the road is narrow and winding, and one who is unacquainted with the road has little idea when a long hill is being encountered. The second secret check was approximately five and a half miles from Tavistock, but here again most were on time. Over Dartmoor the hills were steeper than ever, and many a time the riders were passed cooling their engines. T. Pollock (James) was geared too highly, and twice he ran to the foot of a hill for a second attempt. Dr. Fawssett (Chater-Lea sc.) was passed repairing a puncture, and he was not seen again until the Sunday, when he turned up at Land's End. Sand Hill, Gunnislake, an ascent nearly two miles long, tested the engines severely. We noticed McNab (Trump) come to a standstill, and have no doubt others did the same. R. W. Duke (Zenith) broke a valve, and lost three-quarters of an hour removing the cap. He later burst a tyre in Hayle, but caught up again.

In Penzance, Mr. Edward Lycett, the donor of the trophy, was awaiting the arrival of the competitors. What a temptation it must have been for them to stop, instead of continuing to Land's End and back—another twenty miles. As usually happens on these trials, two were unlucky on this last stage. Blackwell (Zenith) burst a cover and could not continue, whilst Spiers (Macbeth) broke the carburetter control wire and had to stay at the End. A goodly crowd assembled at Holman's Garage to witness the finish of Saturday's run. Those who checked in were:

Entrant, machine, and gear.	*Entrant, machine, and gear.*
R. V. C. Brook (3½ Precision—Roc)	J. H. Percox (3½ Alldays)
H. R. Fowler (3½ Norton—Shelley)	L. Newey (3½ Ariel—Armstrong)
F. Read (2½ A.J.S.—A.J.S.)	F. C. Sangster (3½ Ariel)
R. W. Duke (Zenith—Gradua)	H. Walters (2½ A.J.S.—A.J.S.)
H. Stevens (5 A.J.S.—A.J.S.)	A. J. Stevens (2½ A.J.S.—A.J.S.)
W. E. Baylis (3½ N. Hudson—Armstrong)	H. Ball (3½ Triumph)
H. D. Jones (3½ Zenith—Gradua)	T. E. Blumfield (3½ Kerry—Armstrong)
P. J. Evans (6 Enfield—Enfield)	S. Wright (3½ Humber—Roc)
T. Peck (3½ Rudge—single)	B. Bourke (3½ Humber sc.—Armstrong)
H. Blockside (3½ B.S.A.—single)	B. Yates (3½ Humber sc.—Roc)
T. Pollock (3½ James)	G. Bell (3½ N. Hudson sc.—Armstrong)
A. Young (3½ Kerry—Armstrong)	H. J. Cox (3½ Premier sc.—Armstrong)
A. D. Arter (3½ James—Heron)	
F. A. McNab (3½ Trump—Armstrong)	
D. Cork (5 A.J.S.—A.J.S.)	

J. L. Norton (Norton sc.) experienced tyre trouble, so elected to stay at Penzance, as also did P. Brewster on a similar turnout.



At the secret check on the Evesham-Cheltenham Road in the early hours of Saturday.

The Return Journey.

All got away to time in the early hours on Whit-Monday, it being just sufficiently light to enable the riders to dispense with lamps. The hills on the homeward run were even more severe than going out, Lostwithiel, Gunnislake, Redruth, and Tavistock all boasting gradients of the first water. Over Dartmoor again one or two mounds proved real teasers. Sangster and Newey, on Ariels, kept together throughout, and always seemed ahead of time. H. J. Cox (Premier sc.) suffered belt troubles, whilst a number were noticed repairing or changing inner tubes. Cork (A.J.S.) somehow missed the first check between Liskeard and Tavistock—hard lines indeed, as he had kept closely to time throughout. The right-angled bend at Two Bridges successfully climbed, a long pull of over a mile on the edge of Dartmoor was the next rise to command attention. Here Mr. Lycett's car party were observing the riders. Near Moreton Hampstead Secretary Brook unfortunately landed in a ditch in rounding a bend downhill, and bent his forks besides damaging his machine in other ways. He pluckily continued and reached Exeter. After breakfast here, the competitors set out with light hearts *viâ* Taunton and Bath, the weather conditions being of the best and more familiar roads being at hand.

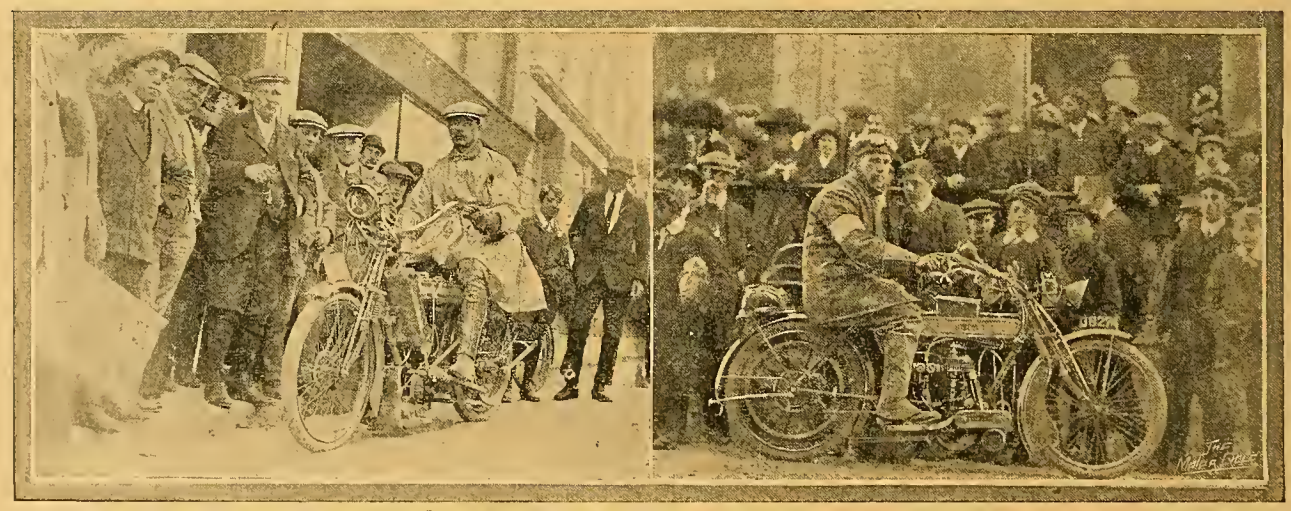
Dust troubled the riders not a little, and they presented a weird sight as they filed through the big towns. Most scurried ahead in order to snatch a hasty lunch in the neighbourhood of Stroud and Cheltenham, as no further stop was arranged. The last secret check was midway between the last-mentioned town and Evesham, and then the remaining section *viâ* Alcester was a mere nothing. P. J. Evans had time to watch with us the finish of a boat race at the Evesham Regatta.

The first man was due at Birmingham at 7.46, and almost to the minute he finished, followed by the remainder as under:

R. V. C. Brook (3½ w.c. Precision)
N. C. Blackwell (6 Zenith)
H. Rem Fowler (3½ Norton)
H. D. Jones (3½ Zenith)
R. W. Duke (3½ Zenith)
W. E. Baylis (3½ New Hudson)
F. A. McNab (3½ Trump)
H. Stevens (5 A.J.S.)
F. Read (2½ A.J.S.)
H. Walters (2½ A.J.S.)
D. Cork (5 A.J.S.)
A. J. Stevens (2½ A.J.S.)
J. H. Percox (3½ Alldays)
L. Newey (3½ Ariel)
F. C. Sangster (3½ Ariel)
H. Ball (3½ Triumph)
T. E. Blumfield (3½ Kerry-Abingdon)
A. Yonng (3½ Kerry-Abingdon)
H. Blocksidge (3½ B.S.A.)
Tom Peck (3½ Rudge)
T. Pollock (3½ James)
A. D. Arter (3½ James sc.)
Dr. B. Fawsett (8 Chater-Lea sc.)
P. J. Evans (6 Enfield sc.)
H. J. Cox (3½ Premier sc.)
Sam Wright (3½ Humber sc.)
B. Bourke (3½ New Hudson sc.)

The Lycett Trophy winner cannot be announced until next week.

The run throughout was well arranged; excellent route cards with times and distances clearly marked were supplied to each competitor, and despite the gruelling nature of such a long ride over roads varying from almost flat to exceptionally difficult, the competition was greatly enjoyed by the participants.



(1) The first arrivals at Holman's Garage Penzance. R. Vernon C. Brook on the 3½ h.p. water-cooled Precision. (2) H. Rem Fowler (3½ h.p. Norton), with Shelley gear, who rode most regularly throughout.

THE LEGION OF MOTOR CYCLISTS.

THE HON. SECRETARY'S REPLY TO A RECENT ATTACK.

Sir,—My attention has been called to an editorial in a contemporary, reprinted *in extenso* by a twin journal, and headed "Advice to the Legion of Cyclists." I do not know on what grounds the writer of the article assumes the right to give advice to the members of an organisation to which he himself does not even belong. As hon. organising secretary of the Legion, I would like to advise him to mind his own business, and, in the eloquent words of the *Titanic's* operator, "To keep out, you fool."

He justifies his presumption by pleading that, owing to the War Office refusal to recognise the Legion, "it is obviously futile to proceed with the Legion," and advises his readers not to waste any more time upon a scheme that he himself claims to have started.

I would like to point out that, first of all, your contemporary did not start the scheme. The Legion was started by myself and certain enthusiasts on military cycling. In December I asked the editor of *Cycling* to lend it the publicity of his pages, and two months later the editor of your contemporary offered also to publish details—a request with which I complied. So much for the boastful claim as to originating the scheme.

Now I should like to say a word as to the weak-kneed advice the editor has now presumed to give to the Legion. At the very first rebuff from the War Office he throws up the sponge. That, sir, is not the way great causes win to their own. I myself have had some little hand in gaining recognition of the value of military cyclists in general. It has been an uphill battle lasting many years, and we certainly should not now possess fourteen regiments of cyclists in the Territorial Army if those who have worked so hard for the cause had thrown up the sponge at the first rebuff. Whether I shall win recognition for the Legion eventually I cannot say, but I shall not cease to fight for it by every means in my power so long as a dozen loyal legionaries will stand by me. At present I am receiving splendid support. Thirty new corps have been formed during the past month, and I have received many loyal protestations from organising officers throughout the country, who are anxious to stand by me.

Arrangements have been made for publishing an illustrated monthly, in which several pages will be devoted to Legion news. This journal will make its bow to the public on June 15th, and is entitled *The Territorial Monthly and Legion News* (price 2d.), with editorial offices at 128, Jermyn Street, W. That very small public which may have seen the editorial article in your contemporary are requested to get the first issue and read the other side of the case. A. H. TRAPMANN, Captain
(Hon. Sec. L.O.C.)

MOTOR CYCLE RACING AT BROOKLANDS.

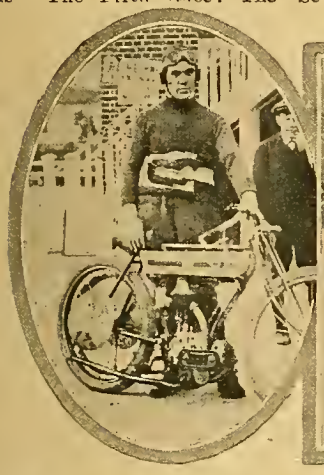
FINE weather favoured the Brooklands race meeting on Whit-Monday. The attendance was excellent and the races were well supported. The first motor cycle race was the eighth short motor cycle handicap, distance about 5¾ miles (for start). The machines passed the fork once and then entered the straight. All got away well except Remington, whose machine was slow starting. He eventually got up a good speed, when his belt came off. The order at the fork at the end of the first lap was: Edmond, Dewar, Kickham, Stanley, Jepson, Campbell, Lavender, Walker, Barnes, Fowler, Friedlander, Bailey, Axford, Elce, Capt. Harkness, Printz, and Weatherilt. The race resulted in an easy win for Dewar who led by about quarter of a mile.

		Handicap.
1.	W. Dewar (1 Triumph, 85×88) ...	... 1 42
2.	M. Campbell (1 Triumph, 85×88) ...	... 1 26
3.	G. E. Stanley (1 Singer, 85×88) ...	... 1 30

The next motor cycle event was down on the programme as "The Fifth Race: The Seventh Long Motor Cycle Handicap." Distance, about 8½ miles. The machines passed the fork twice, and then entered the straight. The first lap order was Edmond, Kickham, Jepson, Davis, Campbell, Lavender, Manners-Smith, Friedlander, Dewar, Winfield-Smith, Bailey, Fowler, Capt. Harkness, Weatherilt, Axford, Stanley, Elce, Printz, Schmidt, Barnes, and Remington. Second lap order: Edmond, Kickham, Campbell, Jepson, Weatherilt, Fowler, Lavender, Winfield-Smith, Dewar, Manners-Smith, Stanley, Friedlander, Axford, Bailey, Printz, Elce, Capt. Harkness, Remington, Barnes, and Schmidt. Weatherilt won easily.

		Handicap.
1.	P. Weatherilt (1 Zenith, 90×77.5)	... 1 24
2.	M. Campbell (1 Triumph, 85×88)	... 2 9
3.	E. Kickham (2 Douglas, 60×60) ...	... 2 45

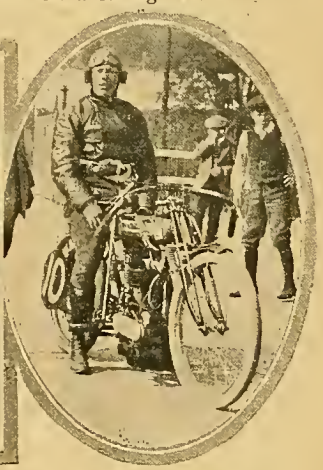
The winner's speed was 65¼ m.p.h. Campbell, who is a keen private owner, was, it will be noticed, second in both races; he also competed on a racing car.



(1) W. Dewar (3½ h.p. Triumph), winner of the eighth Short Handicap.



(2) A fine finish.



(3) P. Weatherilt (Zenith), winner of the seventh Long Handicap.

DUBLIN TO LISBURN AND BACK.

THE Whitsuntide fixture of the Dublin and District Motor Cycle Club took the form of a reliability trial from Dublin to Lisburn and back, a distance of 186 miles. The start took place from Drumcondra Bridge at 9 a.m. The White Cup was offered in the event. The single-cylinder machines were compelled to carry a lady passenger, and in both classes the combined weight of the passenger and driver was fixed at 17 stones. There were two controls on each journey, at Dunleer and Banbridge, and at the turning point, while two or more secret controls were stipulated for. The starters were as follows:

WHITE CUP COMPETITION.

T. J. Dunphy (7 Indian)	C. Magennis (3½ Rudge)
F. Keogh (3½ Triumph)	F. J. Walker (3½ Rudge)
H. T. Carroll (3½ Rex)	R. Lowry (3½ Rover)
C. E. Murphy (3½ Triumph)	J. P. Quill (2¾ Douglas)
T. E. Greene (3½ Rudge)	R. Walshe (4 Calthorpe)
J. H. Taylor (3½ Rudge)	T. Woods (3½ Premier)
J. Browne (3½ New Hudson)	A. F. Irwin (2¾ Enfield)
P. J. Brady (3½ Rudge)	W. G. Green (2½ A.J.S.)
G. Roche (3½ Rover)	P. Beattie (3½ Rudge)

SIDECAR CLASSES.

A.—Single-cylinders.	B.—Multi-cylinders.
T. D. Rolling (3½ Rover sc.)	J. L. Walshe (6 Enfield sc.)
E. W. Armstrong (3½ Rudge)	F. A. Wallen (6 Enfield sc.)
V. Barton (3½ Triumph sc.)	J. D. Weir (7 Indian sc.)
O. G. Price (3½ Rudge sc.)	T. A. Ireland (7 Indian sc.)
J. Healy (3½ Rudge sc.)	O. S. Baker (6 Enfield sc.)
W. J. Towell (3½ Rudge sc.)	

The feature of the trial was the remarkably high standard of reliability attained at all open controls. The great majority were dead on time, and at the finish only three men varied from the schedule. Consequently the result will altogether depend on the markings at secret controls, and will not be known until these are examined.

LONDON—COVENTRY TRIAL RESULTS.

The following prizes were awarded in the above trial. The figures represent the total number of marks lost by each competitor.

MEMBERS' CLASS.

J. H. Pooley (3½ h.p. Premier), 0; silver cup and special prize for best solo performance.

SILVER CUPS.—W. Cooper (3½ h.p. Bradbury), 1; G. H. Hollis (2¾ h.p. Douglas), 1; H. Karslake (3½ h.p. Rover), 1; H. Beau (6 h.p. Matchless), 2; L. Joiner (3½ h.p. Brown), 3; E. Rose (3½ h.p. P. and M.), 3; and P. C. Dewhurst (3½ h.p. Rudge), 4.

SILVER MEDALS.—J. Gibbs (2¾ h.p. Humber), 10; G. B. Coombes (7 h.p. Indian), 13; E. G. Westacott (3½ h.p. Zenith), 16; and P. H. Goddard (2¾ h.p. Douglas), 21.

OPEN CLASS.

C. R. Collier (8 h.p. Matchless and sc.), 1; H. A. Collier (8 h.p. Matchless and sc.), 2; R. E. Guest (8 h.p. Matchless and sc.), 4; J. Tassell (8 h.p Matchless and sc.), 4; silver cups and Woolwich, Plumstead and District team winners of team cup and silver medals.

J. R. Haswell (3½ h.p. Triumph sc.), 3; silver cup and special prize for best member's performance in Open Class.

SILVER CUPS.—A. C. Robbins (3½ h.p. Humber sc.), 3; J. T. Wood (G.W.K.), 4; G. M. Killier (G.W.K.), 4; J. Oliphant (3½ h.p. Premier sc.), 4; H. W. Lambert (8 h.p. Chater-Lea sc.), 1; H. F. S. Morgan (8 h.p. Morgan), 1; F. S. Wheatland (6 h.p. Matchless sc.), 3; F. Smith (5-6 h.p. Clyno), 4; C. T. Newsome (3½ h.p. Rover sc.), 5; and R. G. Mundy (4 h.p. Singer sc.), 10.

SILVER MEDALS.—S. Tessier (6 h.p. Bat and sc.), 8; A. J. Dixon (4 Singer sc.), 13; W. O. Oldman (6 h.p. Bat and sc.), 16; F. Hill (A.C. Sociable), 13; A. S. Phillips (8 h.p. V.S.-Jap and sc.), 15; F. J. Willmott (8 h.p. Morgan), 17; W. S. Percival (3½ h.p. Humber sc.), 31; and W. P. Tippet (3½ h.p. Humber sc.), 27.

CLUB NEWS



Nelson and District M.C.

The first hill-climb will be held on June 1st on Thorny-holme Hill, about two miles from Nelson.

Hunslet M.C.C.

A motor cycle club is being formed under the above title. Information can be obtained from the hon. secretaries, Messrs. W. H. Gaines and T. Wasden.

Merioneth M.C.C.

The first competition of this new club took the form of a club run to Pentre Voelas. The hon. secretary is Mr. B. Edwards, Talrafon, Dolgelly.

Purley and District M.C.C.

Last Saturday's trial between a team of six Purley riders and six of the South-East London resulted in a win for the former by 592 marks to 457. Brasted and Titsey Hills had to be climbed twice on the run, the total distance being sixty miles.

Wishaw and District M.C.C.

A hill-climb was held at Kirkfieldbank on the 18th inst. Results :

Lightweight Class.—1, G. Brown (Douglas); 2, A. McLean (2¼ F.N.).

Touring Class.—1, J. L. Muir (Triumph); 2, J. Buchanan (Bradbury).

The above club will hold a confined reliability trial on Saturday, June 1st. The distance is about 130 miles, and the route chosen is a very good one for such a trial.

Newcastle and District M.C.

The above club held their annual all night reliability trial on the 18th and 19th inst., the first competitor leaving the club house in Saville Place at 9 p.m.

The outward route chosen was *viâ* Berwick and Dunbar, returning home by way of St. Boswell's and Jedburgh.

Fourteen competitors started, and of this number five qualified for silver medals and one for the club bronze medal.

The names of those qualifying for silver medals are as follows: J. E. Reed, J. Cooper, R. J. Spencer, W. S. C. Spencer, and R. Wilson; bronze medal, W. S. Doods.

Northamptonshire M.C.C.

The prize-winners of the flexibility hill-climbing competition held on Doddington Hill on the 18th inst. were as follows :

Class I.—Single-cylinder Machines.

		Difference in time.
1.	W. Lees (T.T. Triumph)	2m. 13s.
2.	C. T. Underwood (3½ Bradbury) ...	2m. 5⅘s.

Class II.—Any Type of Machine.

1.	C. T. Underwood (3½ Bradbury) ...	2m. 24s.
2.	W. Lees (T.T. Triumph)	2m. 14⅕s.

The Triumph Cup, which was the prize for the first class, now becomes the property of Mr. Lees, who has won it twice in succession.

Dundee and District M.C.C.

The above club held a successful hill-climb, the results being decided on formula.

Lightweight machines, single-cylinder: 1, Miss Kate Scott (2½ Singer); 2, W. Bell (2½ ———); 3, John Thomson (2¾ Minerva).

Twin-cylinder machines: 1, Miss J. Couttie (2¾ Douglas); 2, G. E. Whitehouse (2¾ Douglas); 3, Dr. A. P. Low (2¾ Douglas).

Heavyweight machines, single-cylinder: 1, J. W. Adamson (3½ Triumph); 2, W. P. McArthur (3½ Triumph); 3, J. S. Beveridge (3½ Triumph).

Heavyweight machines, multi-cylinder: 1, D. G. Forrester (5-6 J.A.P.); 2, S. J. K. Thomson (7-8 Bat); 3, A. S. Morgan (7 Indian).

Passenger machines: 1, E. Robertson (3½ Rudge sc.); 2, S. J. K. Thomson (9 Bat sc.); 3, H. M. Lowson (3½ Triumph sc.).

North-west London M.C.C.

The second competition for the Thomas Challenge Cup will take place on Saturday, June 8th, starting from Finchley Road at 6.30. It will take the form of a reliability run of about 216 miles, with probably eight time checks, and competitors will lose marks for failure on nine observed hills, including Dashwood, Kingston, Bhrint Kop, and Sundon.

Aberdeen and District M.C.C.

A flexibility trial was carried out on the Slug Road on the 18th inst. It had been originally intended to have a hill-climb at the Shooting Greens, but owing to the road there being under repair the flexibility event was taken instead. There was a large turn-out of members, and nineteen entered for the competition. The winners were: 1, J. A. Wood, jun., 4.81; 2, A. Stewart, 4.75; 3, G. F. Davie, 4.72; 4, H. Cassie, 4.10.

Mersey M.C.

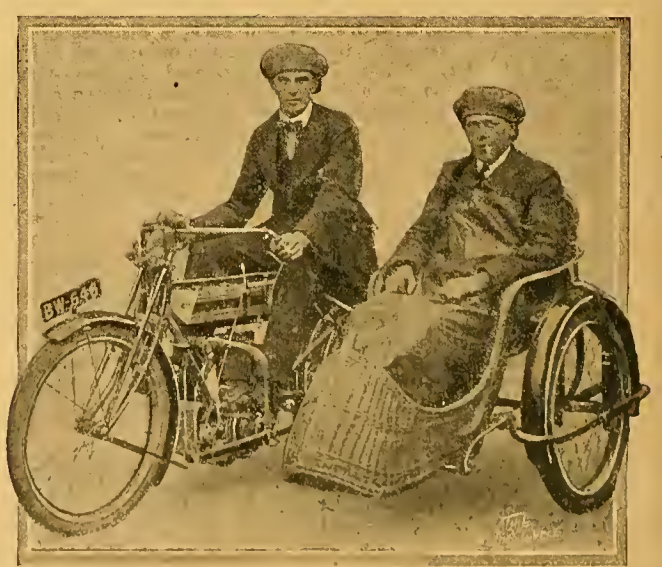
A Tortoise Race will take place on June 1st. Members meet at the Shrewsbury Arms, Old Chester Road, at 3 p.m.

Team trials will be held on June 2nd, meeting at the Farmers' Arms, Moreton, at 2.30 p.m.

Ayr and District M.C.

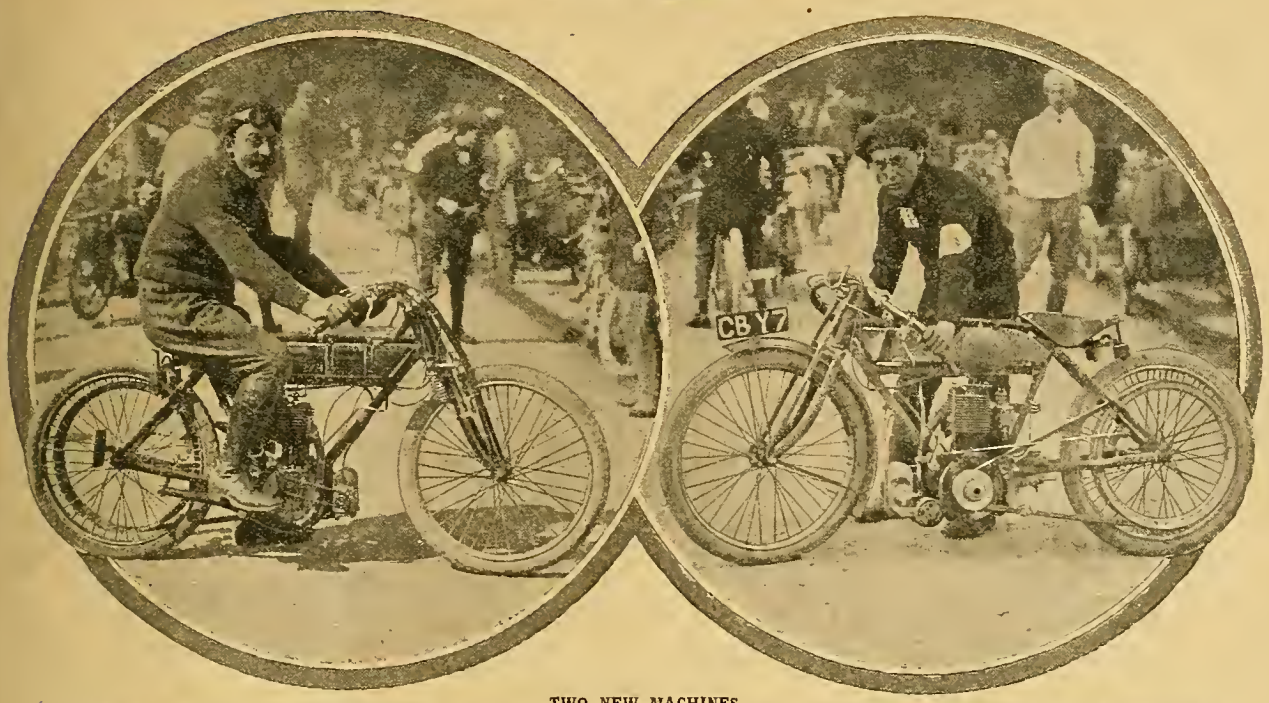
A flexibility hill-climb was held on the Asylum Brae, near Ayr, on the 22nd inst. The results, based on the formula $\frac{\text{Slow} - \text{Fast}}{\text{Fast} + \text{Slow}}$ were as follows :

		Fig. of Merit.
	Open Class.	
1.	Jas. Gilchrist (3½ Triumph)	.614
2.	Jas. Senior (3½ Rudge)	.605
3.	D. McGill (3½ Mystery II.)	.600
	Amateur Class.	
1.	Jas. Gilchrist (3½ Triumph)	.633
2.	Jas. Senior (3½ Rudge)	.584
3.	W. Munro (2¾ Douglas)	.540
	Novices' Class.	
1.	J. McKervail (3½ Triumph)	.568
2.	A. Reeve (3½ Rudge)	.549
3.	Jas. Purdon (Peugeot)	.394



186 MILES TO THE GALLON.

H. S. Askew (3½ h.p. Triumph sidecar) who is credited with covering such a big distance per gallon of petrol, in the Oxford M.C.C. consumption contest, that the manufacturers of the machine find it difficult to believe. We have suggested to the Oxford M.C.C. that the trial be repeated.



TWO NEW MACHINES.

C. Thackray and the 3½ h.p. Contrast-Jap on which he competed for the Ilkley M.C.C.'s Dawson Trophy.

H. Hodkinson (3½ Premo-Precision), on which he competed in the Bradford M.C.C. Leathley Bank hill-climb.

Evesham M.C.

At a meeting held in the Public Hall, Evesham, on the 14th inst., it was resolved to form a club for the district. Mr. W. H. Chapman was appointed captain and Mr. E. Holloway hon. secretary *pro tem.*

Kidderminster M.C.C.

This new club held its opening competition in the form of a hill-climb on the 11th inst., at Copthorne Hill, near Bridgnorth. The races were run on the knock-out plan. Result: 1, F. Wright (Ivy-Precision); 2, Cedric A. Nicholls (Triumph); 3, F. W. Giles (Clyno).

Walthamstow M.C.

The club's standard ride to Norwich and back resulted as follows: Miss A. Percy (3¾ Scott and sc.), J. W. Percival (6 Fafnir tricar), A. G. Peppercorn (3½ Bradbury), F. Picken (3½ Rudge), H. Eiden (5 F.N.), and H. J. Beal (3½ N.S.U.), all of whom received silver cups.

Exeter and District M.C.C.

A reliability trial for the Hancock cup will take place on June 14th and 15th. The route will be round the coast of Devon and Cornwall, starting in a south-westerly direction from Exeter *viâ* Torquay, Totnes, Plymouth, Tavistock, Lostwithiel, Helston, Penzance, Wadebridge, Bude, Bideford, Lynton, Minehead, Tiverton, Sidmouth, and Exeter. No stops (except traffic) will be allowed between controls. The total distance is 400 miles, and the schedule speed 20 m.p.h.

Sydney (N.S.W.) M.C.C.

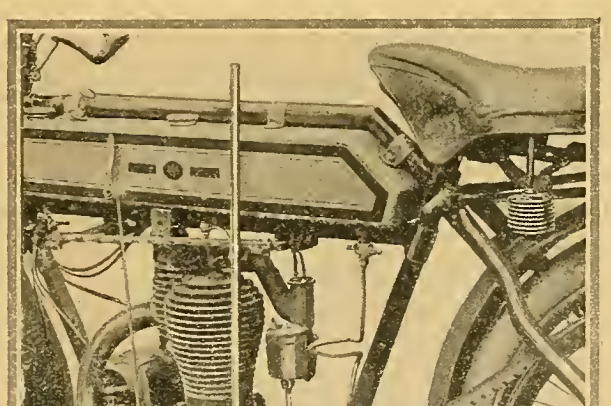
The following entries were received for this club's reliability trial to Orange from Sydney on the 5th ult.: E. Fletcher, F. Flew, W. Spearing, C. Wellesley, A. Foy, R. Carlile, T. W. Green, R. W. Allen, A. Brown, D. St. Clair, A. Lawson, E. Fyson, A. Shilling, G. Hungerford, P. Bayley, R. Robinson, F. Staples, T. E. Green, F. H. Bartlett, H. I. Clements, and E. N. Birks.

The conditions were: Speed, eighteen miles per hour, and the trial to be an absolute non-stop one.

The distance from Sydney to Orange is 165 miles, and R. W. Allen (3½ Zenith) and P. Bayley (3½ N.S.U.) arrived at each of the four controls right to time. Both men had one dismount each, thereby tying for first place. The roads were fairly good, with the exception of part of that between Bathurst and Orange, the sand here being responsible for the downfall of many of the fixed gear machines.

Hamilton and District M.C.C.

A speed-judging competition was held on the 18th inst. over a four-mile course on the road between East Kilbride and Strathaven. Results: 1, Thomas Johnson, Hamilton (7 h.p. Indian), speed 25 m.p.h., 1s. early; 2, Robert Mack, Motherwell (5-6 h.p. Matchless), 15 m.p.h., 3s. early; 3, James Currie, Motherwell (3½ h.p. Chater-Lea-Jap), 20 m.p.h., 8s. late.



The above illustration shows the latest form of Mabon variable gear, which Mr. Mabon has adapted to a 3½ h.p. Rudge. The control, as will be seen by the photograph, has been greatly simplified, and can now be fitted to many well known makes of motor cycles. The gear, as shown, is only in the rough and is a prototype of future models. It was used by Mr. Mabon in the London-Edinburgh run.

Questions & Replies



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Hastings to Lampeter and Back.

I am contemplating a ride from Hastings to Lampeter in Cardiganshire this summer. Could you please inform me as to the most direct route, avoiding, if possible, any big towns or much traffic? I do not want to go anywhere near London, but I wish to stop at Gloucester.—A.G.M.

We have pleasure in giving you the following routes: Hastings, Pevensey, Lewes, Ditchling, Cowfold, Horsham, Cranleigh, Guildford, Bagshot, Camberley Crowthorne, Wokingham, Reading, Pangbourne, Streatley, Didcot, Wantage, Faringdon, Lechlade, Cirencester, down Birdlip to Gloucester, Ledbury, Hereford, Willersley, Hay, Three Cocks Junction, Brecon, Llandovery, and Lampeter. Hastings, Ninfield, Horsebridge, Lewes, Ditchling, West Grinstead, Billingshurst, Chiddingfold, Milford, Farnham, Odiham, Basingstoke, Newbury, Hungerford, Swindon, Cricklade, Cirencester, Gloucester, Ross, Monmouth, Abergavenny, Crickhowell, Brecon, Llandovery, and Lampeter. These routes avoid all the big towns. You can go one way and return by the other.

Ignition and Carburetter.

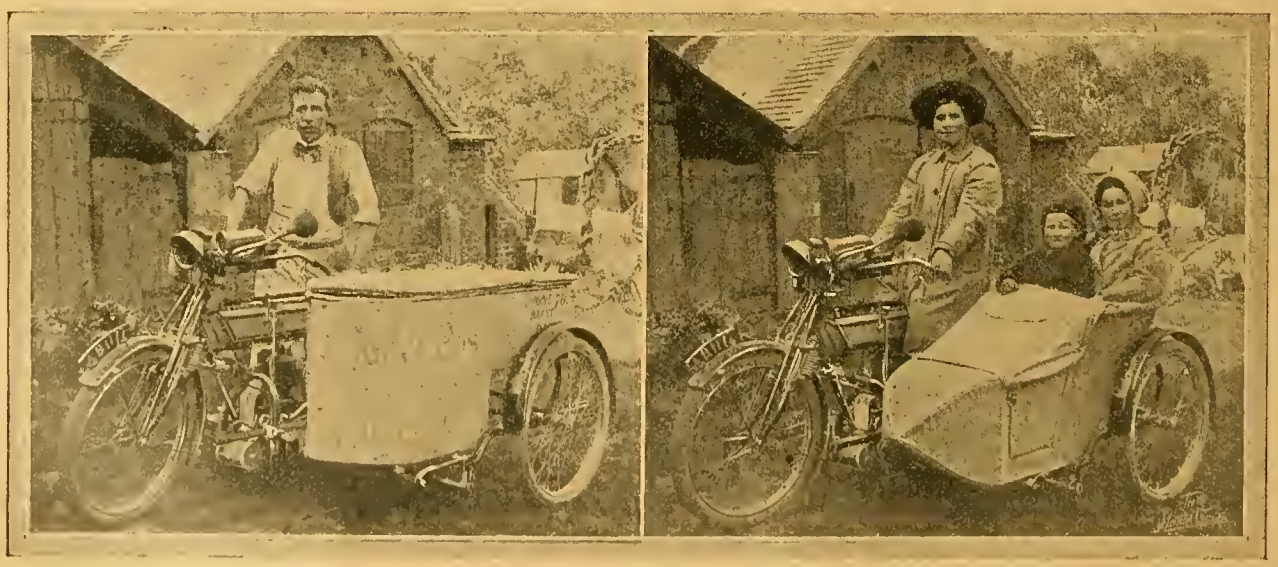
My machine is a 2¾ h.p. 1904 Humber chain-drive. It runs fairly well on the level, but will not take a hill, no matter how little. The valve and piston rings are all as bright as silver. The compression is very good. I might mention that the engine gets rather hot. I cannot get above forty miles to the gallon of petrol.—B.A.

From the description of your troubles we should say that your ignition timing is too late or that your carburetter is at fault. Take out plug in cylinder head and turn engine till piston is dead on top of compression stroke, then retard ignition lever two-thirds. If wipe contact is used, the segment should just be making contact; if make and break, the points should be on the point of breaking. A most important point in connection with hill-climbing on old pattern machines is the opening of the valves. Most probably you will find the exhaust cam worn and not raising the valve the full ¼in. If so, it should be replaced. The inlet valve should be adjusted to open ⅛in. to .5 in. Also try the effect of new valve springs.

Bushes and Magneto Repairs.

(1.) I have a Triumph 1909 free engine; what is the selling value of same? (2.) Will it take a sidecar easily? (3.) How should I proceed to give the engine new bearings, and what would be the cost of this? (4.) What parts of the magneto generally get worn first and want replacing? (5.) What are the bushes of an engine? (6.) How low should the gear be to enable the machine to take a well-loaded sidecar comfortably? (7.) Are the inlet and exhaust valves alike?—G.N.

(1.) The second-hand value of your machine is approximately £30. (2.) It would take a sidecar fairly well in a level district. (3.) You had better get the bearings rebushed by the makers, from whom the cost may be obtained. (4.) The contact breaker mechanism and the armature bearings. (5.) The bush is the stationary part of the bearing in which the journal (the moving part) turns. (6.) The machine should be geared about 5½ to 1 to take a sidecar, and with that it will not take a hill much steeper than 1 in 12. (7.) The valves are interchangeable.



A DOUBLE PURPOSE MOTOR CYCLE AND SIDECAR.

The photographs show how, by a simple conversion of bodywork, a 3½ h.p. Humber is made to do dual work in the capacity of a business and pleasure vehicle. The owner, W. Baseley, tells us that he has covered over 15,000 miles on his machine without trouble. He has climbed Mow Cop Hill, N. Staffs., with a 12-stone passenger in the sidecar.

Silencer.

(1.) The one feature I do not like about the 1912 3½ h.p. Rover motor cycle is its extraordinary silence. Would drilling larger holes in the silencer make it louder? (2.) On the above-mentioned machine there are two ways of starting. One is by running alongside the machine, and the other is by pedalling the machine on the stand and letting in the Triumph clutch with which it is fitted. I do not care for either of these methods of starting. Is it possible to employ a method of handle starting—something similar to the Phelon and Moore or Roc machines? If so, I shall be glad of your suggestion. (3.) How does a Tourist Trophy model differ from an ordinary motor cycle? (4.) Is the petrol consumption of an 86 × 96 mm. engine higher than an engine of 85 × 88 mm. bore and stroke?—W.R.D.

(1.) Drilling larger holes in the silencer would make it louder. Its silence is one of its greatest advantages. It is the noise of motor cycles which hampers their popularity to a large extent. (2.) We should strongly advise you to be content with the present method of starting. A handle is not satisfactory, as a rule, on motor cycle engines. The engine can be started by the pedal with the back wheel on the ground and the clutch out. (3.) A T.T. model is shorter and lighter than a touring machine and has no pedals; it usually has a high compression engine and rigid forks. (4.) The consumption of an 86 × 96 engine would be slightly higher than that of an 85 × 88.

Road Obstruction.

While travelling to Woodside Ferry, Birkenhead, at about ten miles an hour, along New Ferry Road, Port Sunlight, I noticed a lorry on one side and a bread van on the other—both at a standstill—with a space between just wide enough for my passage. The carter in charge of the lorry was standing between the two vehicles, but close up to the bread van, apparently talking to the driver of the van. I sounded my horn three times in order, as I thought, to attract his attention and then pass on between the van on the left side and the lorry on my right. The trouble arose when the lorry driver, having apparently finished his conversation, stepped right in my path, on his way back to his horse I suppose. I had anticipated this and slowed down to five miles per hour, but nevertheless I hit him, came off, and the machine fell and damaged lamp, footrests, horn, and plating. The damage is roughly 25s. to 30s. Have I a good claim, and if so, against the man or employer? How should I proceed?—K 5.

Our legal adviser writes as follows: "I have perused the letter from 'K 5' and would suggest if he has any remedy at all, it would be against the man himself and not against the employer. An employer is only liable for such acts as his servant does in the ordinary course of his employment, and that would not include stopping to talk to the driver of the van. As regards the law, it would certainly appear that the damage was caused through the man's negligence in stepping across from the bread van towards the lorry without looking round to see what was coming. Your correspondent seems to have done all that he ought to have done, and, provided the facts can be proved, I think he would have good prospects of recovering the 25s. The man will, of course, say that he did not hear the horn, and will probably be of opinion that the motor cycle was going much faster than your correspondent states. It would, therefore, be inadvisable for 'K 5' to commence an action unless he has one or two good witnesses who will support his view of the matter. As the amount involved is small, I suggest it would be best for 'K 5' to write to the man demanding payment of the money, and threatening proceedings, but if some offer is forthcoming, he had better accept it. If he brought an action, it would certainly be a novel one, and, therefore, attended with some risk, but personally, I feel that the ordinary principles of law apply, and that he ought to succeed if he prove the facts clearly."

THE MOTOR CYCLE
T.T. and Summer Number
THURSDAY,
June 27th, 1912.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"A.C.B." (Windsor).—2½ h.p. two-stroke Levis. (1.) Speed obtainable. (2.) Lubrication. (3.) Wearing qualities of engine.

"F.O." (Weston-super-Mare).—3½ h.p. free engine Lincoln Elk with and without sidecar.

"W.H.J." (Notts).—2¾ h.p. twin-cylinder Humber with three-speed gear. Reliability, particularly engine.

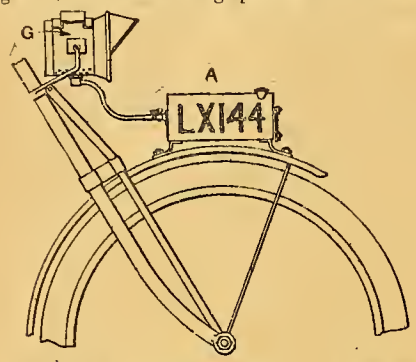


BATTLING WITH THE ELEMENTS.

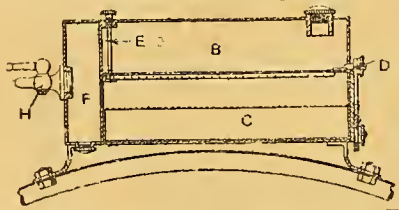
No matter whether north, south, east, or west, Miss Lottie Berend is usually to be seen at motor cycle functions. She and her lady passenger are oblivious as to the weather. In the photograph Miss Berend is seen battling against a gale of dust. She usually rides Precision engined machines, her best performance this year being in the Barnet-Harrogate and back trial.

A Combined Number Plate and Acetylene Generator.

An acetylene generator A is formed of inverted V-shape in cross-section, and is adapted to be secured to the front mudguard, its sides being painted with the



registration numbers. B is the water chamber, and C the carbide chamber, which is adapted to be slid longitudinally into position and secured by screws D.

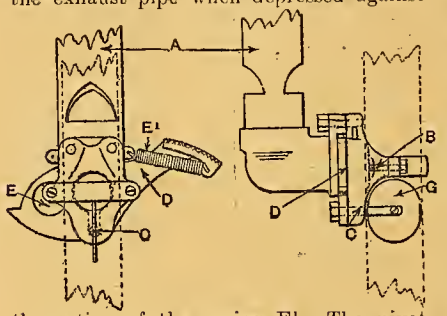


The water control valve is shown at E, and the gas, when generated, passes to a chamber F, whence it issues to the lamp G by way of a tap H.—A. E. Bishop and F. Plater, No. 15,376, 1911.

PATENTS by Eric W. Walford A.C.I.P.A.

An Exhaust Whistle.

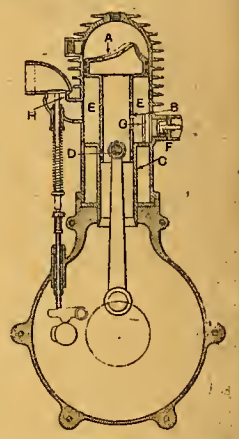
The whistle A is secured to the exhaust pipe by a clip B, which also carries a pivot C, upon which oscillates a plate D. This plate D is provided with a hole E adapted to put the exhaust whistle in communication with the exhaust pipe when depressed against



the action of the spring E¹. The pivot C also carries the butterfly throttle G, so that as the plate is moved to open the passage between the exhaust pipe and the whistle the butterfly throttle G is closed, causing the whole of the exhaust gas to pass through the whistle by means of the hole E.—W. W. Genn, No. 8,994, 1911.

A Two-stroke Engine.

This is a construction in which compression of the charge is not effected in the crank case but in a separate chamber provided for that purpose. The piston A is of two diameters, having a reduced portion B which passes down through a guide C and carries the gudgeon pin D. It will be seen that by this arrangement an annular space E is left beneath the piston head, and it is in this space that compression takes place, the gas being supplied through the inlet valve F. In the cylinder wall are formed ports G which, when the piston head aproaches the lower limit of its travel, allow the compressed gas to enter the combustion chamber, the exhaust gas meanwhile escaping through the cam operated valve H.—C. T. B. Sangster and W. Evans, No. 9,056, 1911.



The Editor disclaims all legal responsibility in any way for loss of copy in the form of manuscript, drawings, or photographs submitted to him. Rejected manuscript, drawings, and photographs will only be returned provided a stamped addressed envelope is enclosed.

T.T. Insurance Policies.

Special policies for the Tourist Trophy Race, including practice and the day of the race, are again being issued by Percy Butler and Co., 3, St. Peter's Square, Manchester.

The Circuit de l'Eure

In the above French race, which we described a fortnight ago, M. Plaudet, riding a standard two-speed Humber, secured the Triumph cup which was offered for the best time for four laps. Plaudet's time was 1h. 46m. 13⅘s.—12m. 21⅕s. faster than the second man.

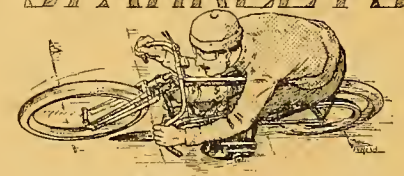
Club Members' Performances.

The 2¾ h.p. Royal Enfield, with two-speed and free engine, has been very successful in members' club events of late. The firm point out that they have not entered their trade riders regularly in open events this year, but have relied more on the performances of private owners.

Trade Announcement.

The new garage recently built by Messrs. Patterson and Wilberforce, about a mile north of Caterham, combines utility and practicability with a pleasing appearance. It stands just off the main road, is approached by a short gravel drive, and is well equipped with waiting room, lavatories, and a good airy workshop fitted with electrically-driven machinery. The partners, Messrs. Cyril and Harold Patterson and Mr. Wilberforce, well-known motor cyclists, give the work their personal attention

SPARKLETS



Belt Fastener Improvement.

The latest Forward belt fastener, which has been so successful ever since its introduction, is now fitted with a serrated steel lining. The serrations grip the rubber of the belt and yet do not tear it.

Successes.

Outstanding victories at the Leathley Bank hill-climb must be credited to the Hutchinson tyre—which make, we believe, won every possible class—the Amac carburetter—which was also very prominent—and Lyso belts. F. W. Barnes, whose Zeniths scored so decisively, used the above.

A Metal-working Firm.

A firm making a speciality of motor cycle tanks, carrier boxes, spare petrol tins and radiators, is A. J. Phillips, 112, Lynton Road, Bermondsey, and 150 152, Southwark Park Road, S.E. The same firm also supply silencers and the Camber mudshield and under screen. The latter is stocked in standard sizes for Bradbury and Triumph machines, and can be supplied to fit other makes to order in two or three days.

Motor Cycle Insurance.

Motor cyclists contemplating insurance will find Harold Townend and Co., 13-14, Abchurch Lane, E.C., an old established firm which has been exclusively devoted since 1902 to the question of motor insurance.

Motor Cyclists' Guides.

Two useful books for motor cyclists are "Throup's North of England Guide" and the same publisher's "North Wales Guide." Both have been brought up-to-date, and may be obtained for 6d. each from all newsagents, or 7½d. each post free from T. Throup, 25, Whetley Hill, Bradford.

Catalogues Received.

The latest catalogue of F.R.S. lamps and specialities is entitled "My Lamp." In this booklet are to be found descriptions and illustrations of the latest F.R.S. lamps, generators, back rests, and front wheel stands, which have attained such a wide vogue.

"Why? The Reason of Success"—a booklet proving by testimonials the reasons for the many successes enjoyed by Hutchinson tyres. Nearly every make of motor bicycle is mentioned, and opposite each is a testimonial from the owner of one of these giving his experiences. Tyres, goggles, and motor cyclists' overboots are also listed. The other publication is the company's motor cycle tyre catalogue, which enumerates the various types of these tyres now in use.

New non-skid principle.

Permanent non-skid quality is your protection against personal danger.
Until now all non-skid tyres wore smooth in time.
Every mile was run on the protecting ribs, studs, or other non-skid formation.

The non-skid device on

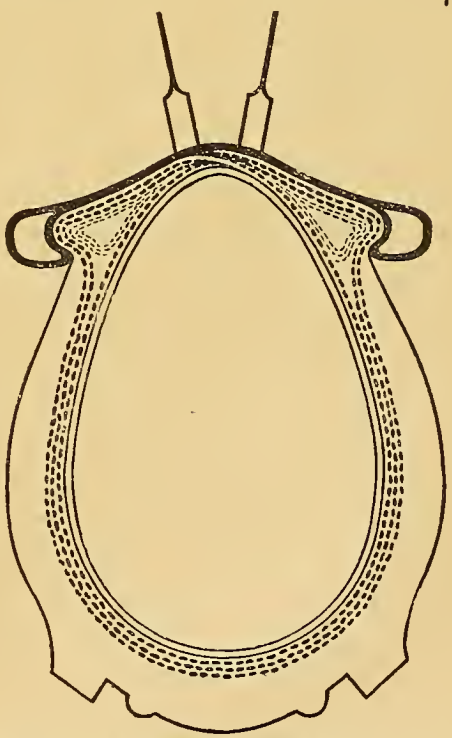
the New (1912)

"Bates" Tyre

is never in contact with the road except when the machine heels over to slip

Hence it is as effective on a tyre that has run for months as on a new tyre.

Note the tread-formation of "Bates" (1912) Tyres.



Heavy central tread takes all the weight.

Undercut side-ridges are off the road until the machine heels over to slip.

Then their sharp edges check the skid and save the rider.

See particulars, diagrams, and prices in the new (1912) Bates booklet "The Truth about Tyres."
Post free from

W. & A. Bates, Ltd., St. Mary's Mills, Leicester.

Depots also in London, Glasgow, and Newcastle-on-Tyne.

NON-SKID.

THE
"BURNETT"
PATENT SUCTION-CUP
TYRE.



TESTIMONIAL.

30, Upper Sandhurst Road,
Brislington,
BRISTOL.
March 27th, 1912.

Messrs. The Burnett Motor Tyre Co.,
Melksham, Wilts.

Dear Sirs,—It is with much pleasure that I express to you my satisfaction of excellent results I have had from one of your Special 3-ply Mdtor Cycle Tyres, which I purchased from you in 1910.

I fitted tyre to the rear wheel of my 4¼ h.p. single-cylinder motor cycle, sidecar attached, and ran about 3,000 miles without having the least bit of trouble, not even a puncture. I have since removed tyre to wheel of sidecar, and after 1,000 miles is still in excellent condition.

It is also interesting to note that during the time tyre was running on rear wheel of motor cycle, I used no less than three tyres of well-known makes on front wheel, which caused me no little inconvenience.

I may also add that I found tyre excellent as a non-skid during bad weather and far superior to any other make of tyre which I have ever tried.

Yours truly, W. H. WHITE.

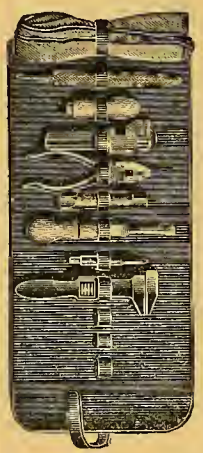
	3-Ply.	Tubes.
26 × 2	33/- ..	8/6
26 × 2¼	34/6 ..	9/6
26 × 2½	36/- ..	10/6

Carriage Paid. Less 10% Cash with Order.

THE BURNETT MOTOR TYRE CO.,
MELKSHAM, WILTS.

Tel.: 33, Melksham. Tel. Address: "*VACUUM, MELKSHAM.*"

We sell more toolkits than any other firm.



British motor cycle builders order these kits in thousands. They know that every tool is made to stand hard usage, and thoroughly well tempered.

Rotax

Toolkits.

The illustration shows a kit consisting of leather case, large and small spanners, screwdriver, tube spanners, pliers, punch, file and cleaning cloth.

From your agent
9/-
and good value.

(Wholesale only)

43-5, Great Eastern Street, London, E.C.

Ask your agent for
Rotax Accessories.

See those pointers—

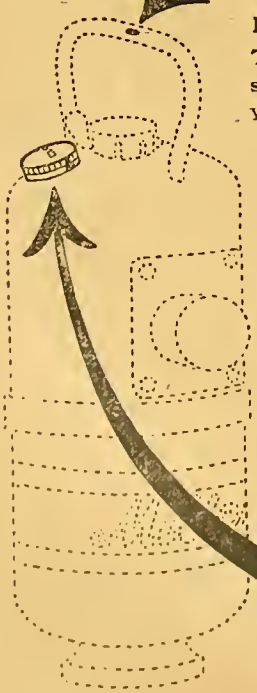
their purpose is to emphasise two exclusive features of the Miller Generator—the SOLID SCREW TO WATER-FEED and the HANDLE AIR-VENT—

These eliminate entirely the common fault of splashing, and, by such service, add enormously to the value of the MILLER models.

You know that fault—then you will appreciate the "remedy"—

It is to be found in all the Miller Motor Cycle Lamps, including the one illustrated here—the

MILLER 26S.

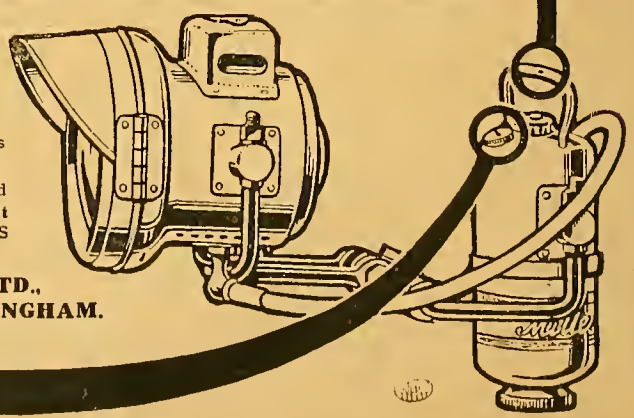


And, remember, that lamp has many other merits—among them—

A 4in. Mangin Lens Mirror, silvered by an entirely new process which renders its lustre absolutely heat-proof—less weight on the front door hinge than in any other head-light, thus entirely overcoming strain and the rattle which invariably ensues—a valve that is practically unbreakable and cannot be strained.

All this means better service, and—that's your need!

Then write us for the Miller Catologue, and note that all Agents can supply—**and that promptly**—and that the price of the 26 S (as illustrated) is **35s.**



H. MILLER & CO., LTD.,
BIRMINGHAM.

"AMAC" CARBURETTER.

WE ONLY ADVERTISE OPEN EVENTS.

BRADFORD M.C.C. OPEN HILL CLIMB
AT LEATHLEY BANK.

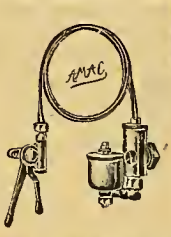
F. W. BARNES	CLASS 1.	AMAC **FIRST**.....	..... FIRST FASTEST CLIMB	ZENITH.
P. WEATHERILT	CLASS 2.	AMAC **FIRST**.....	.....SECOND FASTEST CLIMB	ZENITH.
H. D. SHAW	CLASS 3.	AMAC **FIRST**.....	..... THIRD FASTEST CLIMB	ZENITH.
H. C. NEWMAN	CLASS 4.	AMAC **FIRST**.....	.....FOURTH FASTEST CLIMB	IVY-PRECISION.
P. E. TOLFREE	CLASS 6.	AMAC **FIRST**.....	..... FIFTH FASTEST CLIMB	MATCHLESS.
C. W. JAMESON	CLASS 7.	AMAC **FIRST**.....		MATCHLESS.
W. H. SHELDON	CLASS 8.	AMAC **FIRST**.....	.....RECORD FOR HILL	IVY-PRECISION.
H. REED				DOT.
H. S. KERSHAW				LEVIS.



Sutton Coldfield A.C.'s Amateur OPEN Hill Climb at WENLOCK HILL.

FOUR CLASSES. TWO were won on AMAC.
ALSO FASTEST TIME OF DAY.

ASTON MOTOR ACCESSORIES Co., Ltd., Talford St., Aston, BIRMINGHAM.



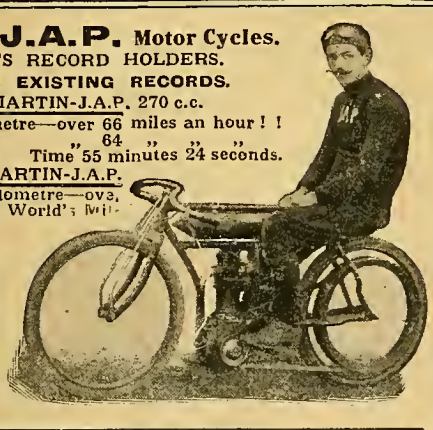
MARTIN-J.A.P. Motor Cycles.
THE WORLD'S RECORD HOLDERS.
BROOKLANDS EXISTING RECORDS.

CLASS A. 1¾ h.p. MARTIN-J.A.P. 270 c.c.
World's Kilometre—over 66 miles an hour ! !
Mile " 64 " " "
" 50 Miles Time 55 minutes 24 seconds.

CLASS B. 2¾ h.p. MARTIN-J.A.P.
345 c.c. World's Kilometre—over 68 miles an hour ! ! World's Mile over 65 miles an hr.

CLASS C. 3½ h.p. MARTIN-J.A.P. 498 c.c. World's Kilometre—over 73 miles an hour ! ! World's Mile over 72 m.p.h.

H. MARTIN & CO.,
Works: Leslie Grove, East Croydon Surrey



NEALL PRECISION DE LUXE MOTOR BICYCLES.

Simplicity. Reliability. Combination.

2½ h.p. Lightweight Models. 3¾ h.p. Standard Models.
4¼ h.p. Sidecar Models.

Druids, Lyso Belts, B & B. Carburetters, Bowden Controls, Hutchinsons or Dunlops, N.S.U. 2 Speed Gears, Armstrong or Sturmey-Archer 3-Speeds

Prompt Delivery of all Models.

Be sure and get our Prices and Complete Specifications.

NEALL BROS., Ltd., Manufacturers, Daventry.

MOTOR CYCLES BY EASY PAYMENTS

Whiteleys are prepared to supply ANY MAKE OF MOTOR CYCLE or CYCLE-CAR on the EASIEST OF EASY TERMS

Interest Charge from 2 per cent.

A TEN POUND NOTE

secures delivery, and you can pay the balance afterwards by twelve monthly instalments

WHY WAIT 6 WEEKS WHEN WE HAVE IN STOCK

Premiers	Alcyons	Bats
Bradburys	New Hudsons	Zeniths
Triumphs	Calthorpes	Swifts
Indians	James	Clynos
Douglas	Singers	P. & M. s.
Rex-Japs	Rudges	Duo-Cars

Carriage Paid to any Station in the United Kingdom.

WHITELEYS

——QUEEN'S ROAD, LONDON, W.——

PARSONS RAPID REPAIR KIT

The following is an example of the many unsolicited testimonials which we are constantly receiving, and of which the originals may be seen an application:

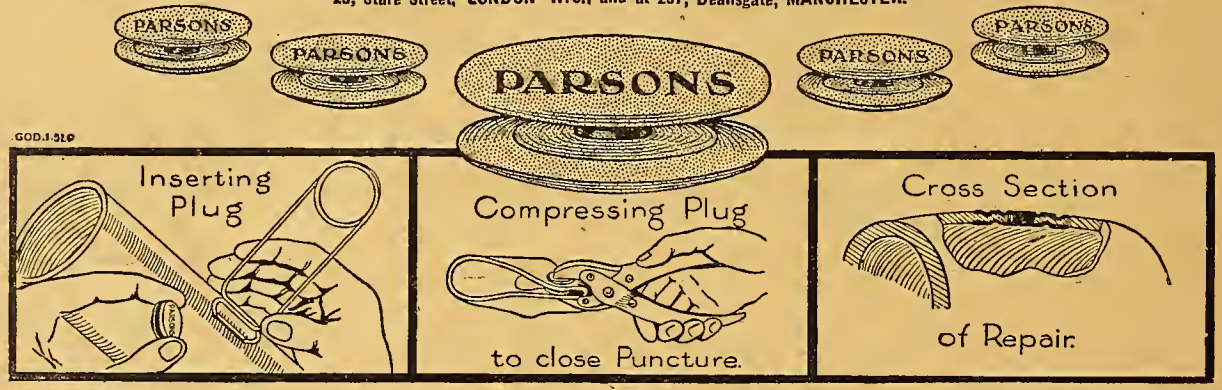
Send to-day for the Free Descriptive Booklet. It shows how you can mend punctures in One Minute—permanently, cleanly and cheaply.

Horncastle,
May 9th, 1912.

Dear Sirs,—

"I used one of your Rapid Repair Outfits during my recent Six Days' World's Record Ride of 3,008 miles. I certainly only had three punctures, but I found the outfit a very great help when I had these, as I repaired the tubes in half the time that I should have done had I used ordinary patches I also find when these are once put on they stay for good. I hope you will have a tremendous sale for these, which you will deserve. I shal certainly recommend the Outfit to all my friends.

THE PARSONS NON-SKID CO., LTD.,
23, Store Street, LONDON W.C., and at 237, Deansgate, MANCHESTER.



Motor Cyclist!

You will always have trouble with your plugs if you do not use the genuine

OLEO

Insist absolutely upon them.

No. 1D .. 3/-
No. 6D .. 4/-

"UNBEATABLE."



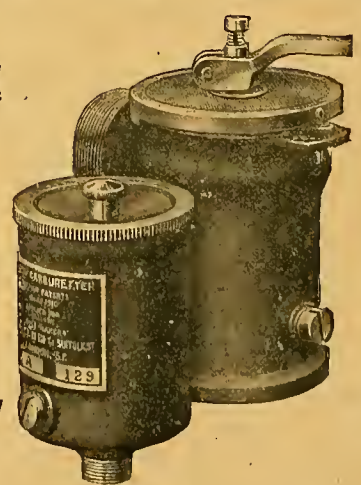
LEO RIPAULT & CO.,
64a, Poland St., LONDON, W.

THE LUKIN

SINGLE CONTROL CARBURETTER.

Absolutely Automatic

Very Flexible.



Extremely Simple.

Perfect Vaporiser.

Write for particulars to:

LUKIN LTD., The Ride, Newcomen Street, LONDON, E.C.

SPECIAL AGENTS:
THE SERVICE CO., LTD., 292-293, High Holborn, London, W.C.
H. TAYLOR & CO., 21a, Store St., Tottenham Court Rd., London, W.C.

BOUNCE !

Many firms exist by Bounce. WE don't ! Our turnover for the Half-year ending April 30th—the Winter Half-year, mind you—was £5,000 more than the previous—or Summer—Half-year. This is all right, and points to a few morals, as follow :

1. Bounce will not increase your turnover by 500 pence. The £5,000 has been made by the trade given us by our satisfied customers. Through the customers who have found Hitchen's, of Morecambe, to do as they say they will do, when they "tell the tale."

2. Through the Sunny Jims who have purchased machines from us, and left the choosing of them to us. Anything they get is good, and the price right.

3. Through the Trade, who have placed their Contracts with Hitchen's in preference to buying direct from the Makers, and binding themselves to take a good deal more machines than they are ever likely to sell.

4. Through the Bhoys who have bought new machines on the Deferred, paying a quarter or a third down, and who are now paying the balance by instalments.

"Man wants but little here below, and does not want that little long," so the Poet says. However, we want a lot ; and more than that, we want it as long as we can get it.

We are not satisfied with the £5,000 increase in turnover, even in a Winter Half-year, but we expect a £30,000 or £40,000 increase this Half-year. To get this, we intend to treat you well, as in the past ! To let you have anything you purchase from us on the usual approval terms, which are as follow :

Anything you get from us, if not as specification, you are at liberty to return within three days and have your money back in full.

At the same time, Hitchen's are prepared to exchange at any time. The originality of this offer makes it stand alone. Others imitate us, both in our Advertisements and in our System of Business, but as they are only small fry, and have no stock, we ignore them. Of course, imitation is the highest form of Flattery, and while they think they are advertising themselves in this manner, they are advertising Hitchen's, of Morecambe, the Originators of the system.

People write and ask us why we are fixed up in Morecambe ! Why not be in London, Manchester, Liverpool, or Leeds ? The answer is simplicity itself. If we were in London, or any of the places mentioned, we should not have been able to get the splendid Agencies that we hold, comprising such machines as

P. and M., Scott, Matchless, Clyno, Bat-Jap, Zenith, Humber, Bradbury, Premier, Motosacoche, Morgan Runabouts, A.C.'s, Lincoln Elks, and all the rest of them.

Then again, WHAT IS wrong with Morecambe ? Halfpenny stamp brings you a list from Morecambe. A few shillings on the train will bring you to Morecambe from any part of the Country, or if you have a good Motor Bike, the roads are good about here. If you live in Ireland, there is the boat to and from Heysham, within a couple of miles from Morecambe. If you live in the Isle of Man, the same thing applies. If you live in the Land of Cakes (Scotland), we are quite near you ; and the same with Wales. We are Central for all parts of England, and close to the main lines. What more do you want than all this ? The World is our Playground, and there are the means for getting to every part of it. We send Motor Cycles abroad quite as easily as to Lancaster, the County town, three miles away. We send goods to every British Colony in the World, and to all parts of the Continent.

If you want to buy a machine, and live, say, in the South of England, we do not send it from Morecambe, but direct from the Works, it may be near London or in the Midlands. Therefore, you are just as well off, as far as the matter of carriage goes, as if we lived in London. Or, on the other hand, if you live in Ireland, we send the machine from Morecambe to Heysham, and thence by boat. The same thing applies to Scotland—the Land of Cakes. If you live in the Principality, you are within reasonable distance of the Midlands or Morecambe.

Then again, Bhoys, in the summer time, when the sun shines, and the roads are dry, which is the best place to go to—a large City, with its hosts of tramlines and traffic ; or Morecambe, with its Sea Breezes and its quiet Rural Roads and beautiful Scenery ? You can come to Morecambe for a week-end, enjoy the Sea Breezes, and see the stock and choose what you want.

If you want to buy a Motor Cycle, don't forget the Firm in Morecambe that will treat you well ; and if you come down and purchase a Motor Cycle, they will pay your fare here. You will, of course, ride the machine back, and therefore not require the return fare.

You can buy a new machine from Hitchen's either for cash or on the Deferred, and a second-hand machine for cash, Deferred, or Exchange terms.

What is of the greatest interest to you is the fact that Hitchen's, being in Morecambe, only pay as much in the way of annual rent for their Garage as the London firms pay in a week. Do you twig it ? Hitchen's are able to give you a lot of the London Rent by wanting less profit on their deals. Then again, can you go to any of these places, pick a machine, and try it on the road ? No, certainly not ! You can come to Morecambe, pick a machine, and try it on the road for an hour or more, and see what you are buying. Don't buy a pig in a poke.

Just at the moment we are clearing out our stock of Second-hand Machines and Accessories. If you have not had our list, send us a postcard, and we will send you one. If you are not in a position to pay the full amount of cash down, say how much you can pay down, and how you can pay the balance per week or month. WE INTEND TO SELL. If we cannot sell at our price, we will try and do so at yours, but SELL the BALANCE we WILL. So now you have it off by heart. If you want a new bike, we have the stock, and are open to do business on your terms, if reasonable. When you get a list, knock off 10% to 20% and let us have your bids. We will meet you. Remember, ALL MUST BE SOLD, as room is wanted, and we are having big stock in every day, so please help. The same applies to Accessories, Tubes, Tyres, etc., etc. Now write at once, or come and see the Canary.

HITCHEN'S, MORECAMBE.

Telegrams—"Motor." 'Phone—112. Morecambe.

Anyone can pay cash for a motor cycle—but why should YOU ?

Read it Again.

—when Pagets Plan enables you to purchase by monthly instalments—to enjoy the use of the machine whilst paying for it. Anything more easy or straightforward could not be imagined—just pay one-fifth down and the machine is yours. Send us the balance so much a month.

Early Deliveries if Orders given now.

Write for full details of Pagets Plan.

PAGETS LIMITED,

10 and 11, Jermyn Street, London, S.W.

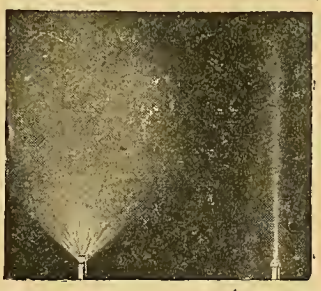
PAGETS PLAN

E.H.G.

5/-

Makes your 3½ h.p. into 4½ h.p.

or any power 15% to 25%.



This side shows Jones & Co.'s Patent Jet delivering petrol as vapour to engine.

This side shows your jet delivering petrol in liquid to the engine.

HOW ?
By having Jones and Co.'s Patent Jet Petrol Atomiser fitted in exchange for your old jet. This patent delivers the petrol to engine in thousands of particles instead of in liquid.

WHY ?
This causes the vapour to be properly exploded instead of burnt ; saves the piston head from being carbonised, and gives at least 15% to 25% more power.

WHO SAYS SO ?
Expert riders of world repute. Copies of testimonials free.

WHAT GUARANTEE ?
Your money returned within 14 days if the jet does not improve your engine 15% to 25%.

ANY CARBURETTER
fitted. Send your old jet, or give exact particulars of your carburetter. *From any good Agent, or*

JONES & CO.,

31, CANNON STREET, BIRMINGHAM.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII.
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION IX.
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

Don't Wait.

Start riding now.
We have the Motor Cycle you want at the keenest value price for promptest immediate delivery.
Nearly 300 Newest 1912 Models & Great Bargains in genuine Second-hand Machines, overhauled and put in satisfactory riding trim.



CALL AND SEE OUR GREAT SHOW.

ASK FOR TO-DAY'S LIST, WHICH INCLUDES:

5036.	2½ h.p. 1911	**MOTOSACOCHE**	£27 0
5009.	3½ h.p. 1911	T.T. **BRADBURY** ..	£32 0
5055.	3½ h.p. 1911	**L.M.C.**, variable gear	£35 0
5287.	2¾ h.p. 1911	**DOUGLAS**	£28 0
5006.	3½ h.p. 1910	T.T. **TRIUMPH**	£34 0
5470.	3½ h.p. 2-speed	**ROC**	£20 0
5066.	3½ h.p. 1911	**BRADBURY**, Mabon cl.	£37 10
5332.	5-6 h.p. 1911	4-cyl. **F.N.**	£33 10
5358.	2¾ h.p. 1912	2-speed **ENFIELD** ..	£47 0
4420.	3½ h.p. 1911	Free Engine **PREMIER**	£38 10
5441.	3½ h.p. 1911	**BRADBURY**	£35 0
5468.	3½ h.p. 1911	**BRADBURY**	£35 0
5475.	3½ h.p. 1911	**ZENITH-GRADUA** ..	£40 0
5476.	3½ h.p. 1907	**TRIUMPH**	£21 10
5327.	7 h.p. 1911	2-speed **REX DE LUXE**	£45 0
5384.	3½ h.p. 1910	Standard **TRIUMPH**	£33 10
5496.	3½ h.p. 1909	**BRADBURY**, free eng.	£27 10
5285.	2 h.p. 1910	**MOTO-REVE**	£20 0
4863.	3½ h.p. 1911	**CHATER-J.A.P.**	£32 0
4871.	3½ h.p. 1911	**BAT-J.A.P.**	£32 10
5420.	2¾ h.p. 1911	2-speed **ENFIELD** ..	£40 0
5424.	3½ h.p. 1912	F.E. **BRADBURY** ..	£48 10
5306.	3½ h.p. 1910	2-speed **P. & M.**	£42 0
5460.	2½ h.p. 1910	2-speed **F.N.**	£27 10
5341.	3½ h.p. 1908	2-speed **P. & M.**	£25 0
5493.	3½ h.p. 1911	2-speed **BRADBURY**	£42 0
5471.	3½ h.p. 1911	F.E. **BRADBURY** ..	£38 0
5293.	2¾ h.p. 1911	**ENFIELD**	£40 0
5499.	3½ h.p. 1910	2-speed **HUMBER** .	£32 0
4865.	2¾ h.p. 1911	**HANDY HOBART** ..	£25 0
5500.	3½ h.p. 1911	**P. & M.**	£50 0
4957.	8 h.p. 1910	**BAT-J.A.P.**	£35 0
4701.	2¾ h.p. 1910	**N.S.U.**	£18 0
4607.	3½ h.p. 1911	**KERRY-ABINGDON**	30 Gns.
5290.	5-6 h.p. 4-cyl.	**F.N.**	£33 10
4393.	3½ h.p. 1911	T.T. **PEUGEOT**	£27 10
4425.	3½ h.p. 1911	F.E. **PREMIER**	£37 10
4146.	3 h.p.	**N.S.U.**	£15 0
4226.	3½ h.p.	**MIDGET BICAR**	£20 0
4331.	1¾ h.p. 1909	**MOTOSACOCHE**	£16 10
4631.	3½ h.p. 1909	**CHATER-J.A.P.**	£22 0
4784.	3½ h.p. 1911	T.T. **ARIEL**	£28 10
5333.	2 h.p. 1909	**MOTO-REVE**	£21 0
5438.	3½ h.p. 1909	2-speed **HUMBER** ..	£27 10
5253.	3½ h.p. 1908	Twin **PEUGEOT**	£18 0
5448.	3½ h.p. 1911	Cone Clutch **REX** ..	£35 0
3731.	5 h.p. 1911	Tourist **REX**	£30 0
5503.	5 h.p. 1910	**INDIAN** and Sidecar	£34 0
2965.	2 h.p. 1909	**MOTO-REVE**	£17 10
5485.	5 h.p. 1909	Tourist **REX**, F.E. ..	£28 10
5169.	5 h.p.	Twin **G.B.**	£20 0
4903.	3½ h.p. 1911	Tourist **REX**	£27 10
5195.	2 h.p. 1908	**MOTO-REVE**.....	£17 10
4828.	3½ h.p. 1911	**JAMES**	£32 10
4089.	1½ h.p. 1910	**MOTOSACOCHE**....	£18 10
5437	3½ h.p. 1908	**TRIUMPH**	£26 0

WAUCHOPE'S

9, SHOE LANE, FLEET STREET, LONDON, E.C.

'Phone: Holborn, 5777.
Wires: "Opificer, London."



NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or it "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

3½h.p. Triumph, splendid condition; £27/10.—C. W. Smith, Northgate, Darlington.

5-6h.p. Zenith-Gradua, Mills-Fulford £21 sidecar, spare lamps, tyres, complete with all spares; selling through accident (broken leg); £80.—W., c/o C. W. Smith, Northgate, Darlington.

3½h.p. Zenith-Gradua and 3½h.p. New Hudson, 3 speeds; ready for delivery.—C. W. Smith.

3½h.p. Smith-Precision, winner of Darlington climbs and fastest time Middlesborough; do over 60; £39/10.—C. W. Smith, Northgate, Darlington.

1912 Bradbury Standard, only run 100 miles; £46.—Gannt, cycle agent, Crook, Durham.

SCOTTS for early delivery, subject to the Scott Company's approval; £65.—Walker's, Fishburn, Ferryhill.

1911 New Hudson, 2¾h.p., 3 speed, has been carefully used, spares; trial; £35.—Palmer, Langley Park, Durham.

1911 3½h.p. Ariel, decompressor, free engine, variable gears, list price £51/5, never been run; 42 guineas, offers.—Martindale, architect, Carlisle.

1912 Phelon and Moores, free engine Triumphs, Douglases, Bradburys, B.S.A.'s, Enfields, in stock. —Phone: 1X2. Stout's Garage, Egremont, Cumberland.

1909 P. and M., £32; 1911 4h.p. 2-speed Quadrant, like new, £38; 1911 3½h.p. Premier, £35; 1911 7h.p. free engine Rex, £33.—Walker's, Fishburn, Ferryhill.

3½h.p. Late 1911 Ariel, decompressor variable gear, new belt; bargain, £33; in magnificent order, tyres perfect.—Turvey and Co., The Motor House, Sunderland.

3½h.p. Premier, new June, 1911, very little ridden, in grand running order; a bargain, 30 guineas. —Turvey and Co., The Motor House, Sunderland.

TRIUMPHS, Humbers, B.S.A., Royal Enfield motor cycles, lightweights, 2 speeds, free engines; write, wire, or 'phone for immediate deliveries.—Turvey and Co., The Motor House, Sunderland. Tel.: No. 626.

SECTION II.

York and Lancashire.

PICKLES for Lincoln Elks.—3½h.p. £34, 2 speeds £42.

PICKLES for sidecars from 5 guineas, in stock; B.S.A., Chater-Lea, Royal Avena, J.A.P.; Michelins 17/6; machines sold on commission, 5%; no sale, no charge.—Pickles, Church St. Garage, Bradford.

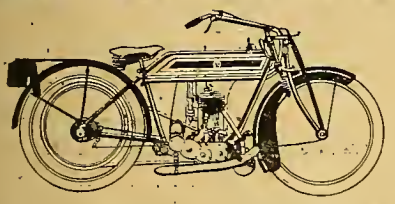
THE Great Douglas Agent, Douglas, Gourlay, Fallowfield, Manchester.

TRIUMPH, late 1909, as new, complete, Mabon, F.E.; £30.—Todd, Swinton Terrace, Masham, Yorks.

The Halifax Motor Exchange

Largest Rex Dealers, 16, WESTGATE, HALIFAX.
'Phone, 766. Telegrams, "Perfection."

BRAND NEW 1911 REXES.



	Makers' price.	Ours.
3½ h.p. Rex Tourist	43 guineas	**34 guineas**
3½ h.p. Free-engine	48 guineas	**39 guineas**
3½ h.p. 2-speed De Luxe	57 guineas	**46 guineas**
5 h.p. 2-speed De Luxe	60 guineas	**51 guineas**

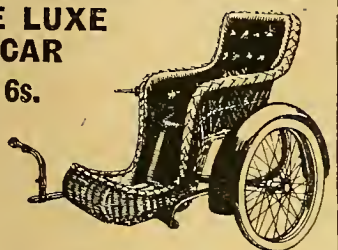
All new and guaranteed. Exchanges liberally dealt with.

£3 to £5 DOWN and 5/- weekly secures prompt despatch of

2¾ h.p. **J.A.P.**, Clement-Garrard frame	£8 10
Twin Magneto **MOTO-REVE**, Druids	£15 0
3 h.p. **QUADRANT**	£10 10
2¾ h.p. **KERRY**	£10 10
3 h.p. **HUMBER**, chain drive	£8 10
3½ h.p. Light, low **REX**, very smart	£12 10
2¾ h.p. **DE DION**	£10 10
2½ h.p. **J.A.P.**, spring frame, h.b. control	£9 10
3½ h.p. **M.M.C.**, torpedo tank	£10 10

1912 DE LUXE SIDECAR

£6 6s.



"Exchange," with Continental motor cycle tyre	£5 5 0
"De Luxe," with best tyre, apron, footmat	£6 6 0
Ditto, with reversible child's seat	£7 0 0
Ditto, with best coach-built body	£7 12 6

Improved Quick Detachable Joints, cranked extra strong back axle and spindle, tip-up body, and caged ball races to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.
Discount to trade. Exchanges entertained.

GUARANTEED IN RUNNING ORDER.

1912 3½ h.p. standard **BRADBURY**, NEW	£48 0
1912 Twin **REX** Sidette	£75 0
1911 3½ h.p. 2-speed **N.S.U.** and new sidecar	£39 10
1912 2-speed **REX** Junior. Liberal exchange	£45 0
1911 3½ h.p. Tourist **REX**, done 100 miles	£32 10
SCOTT 2-speed. Aug., 1910	£37 10
1910 3½ h.p. 2-speed Magneto **CENTAUR**	£32 10
1911 3½ h.p. **REX**, clutch model, as new	£34 10
1911 5 h.p. 2-speed **REX DE LUXE**	£47 10
1910 7 h.p. Twin **REX**. HOT STUFF	£37 10
1910 3½ h.p. Tourist Trophy **REX**	£29 10
1910 5 h.p. **REX**, very fast. Special machine	£29 10
1911 5-6 h.p. 2-speed Twin **REX DE LUXE**, soiled only	49 Gns
5½ h.p. 2-speed Twin **ROC**, magneto, Druids	£29 10
1908 3½ h.p. Magneto **REX**, spring forks	£22 10
3½ h.p. **REX**, h.b. control, 26in. wheels	£12 10
Twin **MOTO-REVE**, magneto, Druids	£15 0
5½ h.p. 2-speed Twin **REX**, good and reliable	£34 10
3 h.p. **QUADRANT**, low frame	£10 10
2¾ h.p. **KERRY**	£10 10

Easy Payments at Special Rates.

£7 deposit and 10/- weekly secures—

2¾ h.p. Mag. **MINERVA**, chain drive	£16 10
2¾ h.p. **R. and P.** Magneto	£14 10
N.S.U. Magneto Lightweight	£15 10
3½ h.p. Magneto **REX**	£19 19
2¾ h.p. Twin **MOTO-REVE**, Druids	£19 19
2½ h.p. **REX** Magneto Lightweight	£16 10

TRICARS.

6 h.p. Twin **KERRY**	£14 10
5 h.p. W.C. 2-speed **HUMBER**	£19 10

TYRE BARGAINS.

2¼×2¼ **CLIPPER** Covers	10/6
2¼×2¼ **CLIPPER** Tubes	5/9

MOTOR BICYCLES FOR SALE.

3½ h.p. N.S.U., magneto, 2-speed, good condition; cheap, or exchange for lightweight.—Barry, 28, East Castle, Bridgnorth.

TRIUMPH, 3½ h.p., free engine, lamp, and all accessories, perfect condition; £37/10 cash.—England, Orchard House, Shrewsbury.

IN Stock, 1912 T.T. and touring Dot, J.A.P.'s, finished red, £56/14; exchanges arranged.—Pritchards' Garage, Stoke-on-Trent.

2½ h.p. Motosacoche, 1911, free engine model, in excellent condition, not run 2,000 miles; £26/10.—Dr. P. Kingswood, Llandrindod Wells.

TRIUMPH, free engine, 1909, perfect, carefully used, new Dunlop, £33; Cowey speedometer, £3; Lucas 50/- lamp, for 25/-.—Rudge, Foundry, Stafford.

TRIUMPH, late 1910, free engine, like new, Kempshall tyre on back, Palmer on front, new Dunlop belt, all accessories; £35 cash, no offers.—Griffiths, 56, Well St., Ruthin.

3½ h.p. Triumph Motor Cycle, 1909, equal to new in every respect, no better machine on the road, guaranteed perfect, tyres and engine; price £32; only wants seeing.—F. Bayley, Roe St., Macclesfield.

MINERVA, 2¾h.p., Brown and Barlow carburetter, spring forks, tyres Continental hack and front, nearly new, splendid condition; bargain, £12/10.—Vanguard Cycle and Motor Co., Lichfield St., Walsall.

SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

IN Stock, 1912 free and fixed engine Rudges.—Binks and Co., Liucoln.

TRIUMPH, 1912, F.E. model, in stock.—Johnson Bros., Bourne, Lincs.

5 h.p. Rex, 1909, Roc 2-speed, lamp, horn, etc.; £23.—Main, 36, Parade, Leamington.

3 h.p. Triumph, 1906, magneto, good condition; £16.—Main, 36, Parade, Leamington.

MULTI Rudge, just delivered, not used.—No. 621, *The Motor Cycle* Offices, Coventry.

1911½ Bradbury, Kempshall Fox tyres, whistle, everything as new; cheap.—18, Barkham St., Wainfleet.

1912 Triumphs, Bradburys, Premiers, Humbers, Rudge, in stock.—Clifford's Motories, Eastwood, Notts.

TRIUMPH, 1909½, splendid condition, little used, new tyres, Lucas lamp; £27.—W. Gardner, School, Alcester.

3½ h.p. A.S.L.-J.A.P., excellent condition, lamp, horn, accessories; £32, or offer.—Lovel, 7, Arthur Rd., Erdington.

TRIUMPH, 1909½, running perfectly, lamp, generator, spare cover, belt, bought 1912; £26.—Eaden, Allesley, Coventry.

£7.—3h.p. Quadrant, in perfect order, 2 new Dunlops, good belt; owner bought Triumph. — Launton, Hallaton, Uppingham.

TRIUMPH Motor Cycle, magneto, Brown and Barlow carburetter, h.b.c., splendid order; price £23/10.—Wilson, Grandborough, Rugby.

1911 Humber, 3½h.p., 2-speed, sidecar, Cowey, lamp, generator, horn, whistle, only used 2,300 miles; owner gone abroad; £45.—Plastow, Grimsby.

PLASTOW, Grimsby, has the following second-hand machines for sale: 2¾h.p. Fairy, Bosch magneto, £12; 1908 Triumph, £24; 1909 Triumph, £26; 1910 F.E. Triumph, £37; 1911 2¾h.p. Hobert, run 600 miles, £26; 1911 F.E. Rudge, run 1,800 miles, £42/10.

WANTED, offers for new 1912 F.E. B.S.A., 1912 F.E. Rudge, 1912 2-speed Humber, 1912 3-speed 2¾h.p. Premier.—Plastow, Grimsby.

MOTO-REVE, 1910, 2¾h.p., recently overhauled, new Palmer studded back, lamp, horn, tools, perfect; trial; 19 guineas.—Overy, 163, Edmund St., Birmingham.

3½ h.p. Triumph, 1911, roadster, new last October, not run 500 miles, perfect condition, lamp, horn, spares, complete; £40.—Barker, 54, Clarence St., Loughborough.

LATE 1911 Triumph, free engine model, perfect order, £45, or exchange for 1912 T.T. racing Triumph, Rudge, or other good T.T. model.—145, Gladstone St., Peterborough.

MATCHLESS, Model No. 7, 8h.p., twin J.A.P. engine, 2-speed gear, cost 70 guineas in February of this year, complete with sidecar, £63; any trial, expert examination.—Hilton, Motors, Rugby

3½ h.p. Rex, 1909, Bosch, 1911 B. and B., adjustable pulley, Dreadnought back, Lyso, Rich spare tube, spare belt, stand, carrier, head lamp, generator, good condition, take two over Stoneleigh Hill; £20.—541, *The Motor Cycle* Offices, Coventry.

WOODGATE, for immediate delivery of all models of Singers, Triumphs, Enfields, Rudges, and Ariels, and Canoelet and J.J.W. sidecars; also for a splendid range of second-hands, varying from £5 to £45. Get my prices and save money; exchanges and payments arranged. — J. J. Woodgate, the Motor Cycle Depot, Small Heath, Birmingham. 'Phone: 372 Victoria.

REY

5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.
Tele: "Rey, Hampstead." Tel: 2678, P.O., Hampstead.

EXTENDED PAYMENTS

Taken on any Machine or Runabout.

NO EXTRA CHARGE ON MOST MAKES.

Following 1912 Machines for

IMMEDIATE DELIVERY

AND IN STOCK:

TRIUMPH T.T. Roadster, 1912	£50 0
RUDGE Multi-speed, 1912	£60 0
TRIUMPH Standard Model	£48 15
TRIUMPH 1912 F.E. Model	£55 0
RUDGE Standard Model	£48 15
RUDGE T.T. Model	£48 15
RUDGE F.E. Model	£55 0
CLYNO 5-6 h.p. 1912 2-speed Model	65 Gns
P. and M. 3½ h.p. 1912 2-speed Model	£65 0
B.S.A. 3½ h.p. 1912 2-speed Model	£60 0
B.S.A. 3½ h.p. 1912 Standard Model	£50 0
BRADBURY 3½ h.p. 1912 2-speed Model	£55 0
ZENITH. 6 h.p. Model	67 Gns
ZENITH 3½ h.p. Model	53 Gns
DOUGLAS L Lady's Model	£52 0
DOUGLAS J T.T. Model	£47 0
DOUGLAS G Standard Model	£41 0
BRADBURY Standard Model	£48 0
BRADBURY F.E. Model	£54 10
BRADBURY T.T. Model	£48 0
SINGER 3½ h.p. 3-speed Model	£58 10
LINCOLN ELK 3½ h.p. Standard Model	£34 5
HUMBER 3½ h.p. 2-speed Model	£52 10
BAT 6 h.p. Standard Model	£58 0
SINGER 2-speed 4 h.p. Sidecar Model	£65 0
ZENITH 8 h.p. Model	69 Gns
DOUGLAS Model K	£50 0
BRADBURY 2-speed Model	£55 0
B.S.A. F.E. Model	£56 10
G. and N. Runabout in four weeks.	

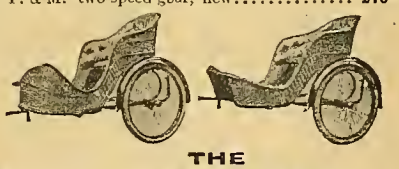
Any other makes on application.

TRADE SUPPLIED WITH VARIOUS MAKES. LIBERAL DISCOUNTS ALLOWED.

Machines at Bargain Prices to Clear.

2011.	**F.N.**, 1911 model, 6 h.p., like new	£35 0
2047.	**F.N.**, 2½ h.p., 1911, 2-speed gear	£26 0
1955.	**F.N.**, 4-cyl., 6 h.p., good order	£35 0
1906.	**F.N.**, 4-cyl., 1911, with sidecar	£35 0
1966.	**F.N.**, 2¾ h.p., magneto, splendid order	£15 0
2064.	**F.N.**, 2½ h.p., 1910, 2-speed	£24 0
1858.	**F.N.**, 2½ h.p., 2-speed, 1910½	£25 0
1968.	**REX**, 1910½, 3½ h.p.	£25 0
1893.	**REX**, 6 h.p., twin, good order	£10 0
2066.	**J.A.P.-CHATER-LEA**, 4 h.p., 1911	£29 0
1967.	**RUDGE**, F.E., 1911, splendid order	£39 0
2146.	**DOUGLAS**, 1910, fine order	£24 0
1640.	**ZENITH**, 1911, 3½ h.p., good order	£41 0
2063.	**F.N.**, 4-cyl., nice order	£25 0
2135.	**ZEDEL** Twin, 6 h.p., Chater fitting	£22 0
	MILLFORD Spring Wheel Sidecar, cane, 1911	£8 0

All Accessories included on S.H. at the price advertised.
BAT P. & M. two-speed gear, new £10 0



THE £4 - 10 REY Sidecar £3 - 10

With Hutchinson or Michelin 26×2¼ tyre and tube, 30/- extra.

The famous "REY" EXHAUST WHISTLE now reduced to 12/6 each. Triumph standard type.

The "REY" LEATHER BELTING outlasts two of any other makes. Price 2/- per foot.

—— SPECIAL DISCOUNTS TO TRADE. ——

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

REY

5, HEATH STREET, HAMPSTEAD.

Caught on!!

OUR REED CANE BODIES

have undoubtedly hit the mark.

Undoubtedly this class of cane is far superior and more classy than ordinary cane or wicker work, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

Model E



£7 10s.

Model F



£8 8s.

OUR POPULAR MODELS ARE GOING STRONG.



Model de Luxe.—£6 5s.



Model C.—£7.



Model E.—£7 5s.



Model D.—£8.

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID. Send for list.

MISCELLANEOUS BARGAINS.

4½ h.p. Aster Engine, water-cooled	£4 10
4½ h.p. Buchet Engine, water-cooled	£4 10
2 h.p. Stationary Engine, water-cooled	£4 10
Leamington Passenger Chair, new	12/6
Cocoanut Fibre Sidecar, foot-mats	3/-
Albion Clutch, fits Triumph	47
New Screw-cutting Lathe, 4in. centres	£6 10
Brooks's B105 Saddle	10/8
Brooks's B130 New Saddle, 1912 model	14/8

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane, HALIFAX (Two minutes from G.P.O.)

Telephone 919.

MOTOR BICYCLES FOR SALE.

HUMBER Motor Cycles.—If you missed your chance at Whitsuntide, do not get left for the next holiday; order now from the Midland retail and wholesale agents: Henry Garner, Ltd., 78, New St., Birmingham. Call, write, or telephone Central 7298 for catalogue. Your present machine taken in part payment for a Humber. "One of the best."

SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

CHIEF Triumph Agents for Cambridge (early deliveries), King and Harper, Cambridge.

1911 Standard Douglas, in real good order and condition; £26.—3a, Bridge St., Cambridge.

1912 Humber, 3½b.p., 2-speed; immediate delivery; £52/10.—Robinson's, Green St., Cambridge.

TRIUMPH, free engine, late 1910, new Palmer cord tyres, Lucas lamp, complete in every way, also sidecar; this combination in excellent order and ready for the road; £45.—Robinson's, Green St., Cambridge.

TWO 1912 Triumph, free engine models, actually in stock; £55.—Triumph agents, Robinson's, Green St., Cambridge.

CLYNO, 5-6h.p., 2-speed; sole agents in Eastern Counties; £68/5. — Robinson's, Green St., Cambridge.

LADY'S Douglas, 1911 pattern, handle starting, 2-speed gear, excellent condition, complete lamp, horn, Jones speedometer, and quantity spares; £45.—Robinson's, Green St., Cambridge.

TWIN Premier, 1912 pattern, 3½h.p., free engine clutch, soiled only; £51.—Robinson's, Green St., Cambridge.

PREMIER, 2½h.p., 1912 pattern, 3-speed Armstrong, soiled only; £42. — Robinson's, Green St., Cambridge.

ROBINSON'S Motor Bicycle Garage, Green St., Cambridge, Triumph agents. Tel.: 388. T.A.: Bicycles, Cambridge.

1909 Motosacoche, magneto, in topping order and condition; accept £13/10.—37, Searle St., Cambridge.

TRIUMPH, free engine, late 1910, perfect order; best offer over £40.—Lloyd, 6, Cromwell St., Ipswich.

HUMBER, 2h.p., 1911 lightweight, perfect condition, lamp, and horn; £25.—Bartram, Dovedale, Sheringham.

NEW Hudsons; delivery from stock.—Sole agents for Suffolk, T. H. Nice and Co., Bury St. Edmund's, and Ipswich.

PREMIERS, all models; delivery from stock.—Suffolk agents, T. H. Nice and Co., Bury St. Edmund's, and Ipswich.

TRIUMPHS, Humber, Bradbury, B.S.A., Rudge, new and second-hand, also sidecars.—T. H. Nice and Co., Bury St. Edmund's, and Ipswich.

BRADBURY, brand new 1912, 3½h.p. free engine, never used; £50; taken for debt.—Garnham's, 96, Crown St., Ipswich.

3½h.p. 1911 Ariel, with Ariel half compression, all tools, spring seat, etc., machine in perfect condition.—Duberly, Drayton, Norwich.

2¾h.p. Brown Motor Cycle, spring forks, B.B. carburetter, in good running order, lamp, horn, new spare tube, etc.; £11, or near offer.—Brooks, Avenue House, Flitwick, Ampthill.

FREE Engine Triumph, delivered December, 1911, lamp, horn, whistle, speedometer, full kit, Clincher front, Kempshall back, 2 belts, 2 pulleys, one T.T. roadster; offers.—Apply, A. de Pass, 23, Fitzwilliam St., Cambridge.

SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

B.S.A., 1911, 3½h.p., lamp, spares, splendid condition; £37/10.—Berg, 12, Dyfrig St., Cardiff.

ARIEL 3½h.p. Decompressor, absolutely new, but 1911 late pattern; what offers?—Marriott, Motor House, Ferryford.

PREMIER and James 2-speed; sidecars from £5, all in stock; also number second-hand motor cycles.—Garage Company, Cowbridge.

ZENITH, 3½h.p., September, 1911, in perfect condition; inspection invited; £44; taken delivery of h.p.—Roderick, 3, Grange St., Port Talbot.

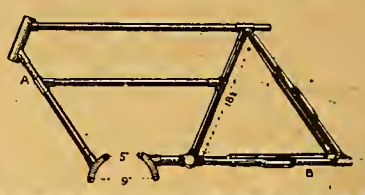
1912 T.T. Model Rhodemon, 3½h.p. Peugeot, used for demonstration, will do 60; will ride 50 miles to prospective purchaser; £36.—Rhodes Bros., Comberton Hill, Kidderminster.

SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants, and Channel Islands.

1912 Triumph, 3½h.p., free engine, cheap.—Venton, Melksham.

BRADBURY, 1911, brand new standard model; great bargain, £39.—Ginger, Motors, Banbury.



MOTOR CYCLE FRAMES.

We have a quantity of frames by well-known maker.
Price 32/6 each.
Rigid forks, 7/6 extra. Druid forks, 45/- extra.
Enamelled and plated in first-class style.

IN STOCK.

We have the following new machines actually in stock.

1912 Multi **RUDGE**	£60 0
1912 Standard **RUDGE**	£48 0
1912 3½ h.p. **NEW HUDSON,** 3-speed	57 Gns.
1912 2¾ h.p. **NEW HUDSON,** 3-speed	47 Gns.
1912 3½ h.p. **HUMBER,** 2-speed	50 Gns.
1911 3½ h.p. **PREMIER,** 2-speed	£48 0
1911 3½ h.p. **PREMIER,** Armstrong 3-speed	£46 10

NEW 1912 MACHINES IN STOCK.

3½ h.p. **MULTI-RUDGE**	£60 0
3½ h.p. 3-speed **NEW HUDSON**	57 Gns
2¾ h.p. 3-speed **NEW HUDSON**	47 Gns
3½ h.p. **RUDGE,** fixed gear	£48 0
3½ h.p. **HUMBER,** 2-speed model	£52 10
1912 3½ h.p. **BRADBURY,** single-speed	£48 0
1912 3½ h.p. **BRADBURY,** 2 speeds	£56 0

SINGLE-CYLINDER REXES.

1910 3½h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p 1908 Featherweight Rex, Bosch mag.	£17 0

TWIN-CYLINDER REXES.

1906 5-6 h.p. Twin Rex	£18 10
5-6 h.p, Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, 2 speeds, M.O.V.	£48 0
5-6 h.p. de Luxe, 1908, 2-speed model	£28 0
5-6 h.p. de Luxe, 1908, 2 speeds, special	£29 10

OTHER MAKES.

4 h.p. **ANTOINE,** vertical, M.O.V.	£14 0
1910 **P. and M.,** 2 speeds, fine goer	£32 0
1909 **MOTO-REVE,** twin engine, magneto, Druids	£20 0
1910 8 h.p. **BAT,** M.O.V., 2 speeds	£45 0
1911 Lady's **HOBART,** Armstrong 3-speed	£36 0
3¾ h.p Twin **PREMIER,** fine machine	£25 0
1911 2¾ h.p. **MOTOSACOCHE,** magneto	£27 0
3½ h.p. **L.M.C.,** 1910 model	£25 0

SIDECAR COMBINATIONS.

8 h.p. **BAT,** 2 speeds, Millford sidecar	£50 0
5-6 h.p. 2-speed 1908 **REX** and sidecar	£33 0
7-9 h.p. 2-speed **REX** and sidecar	£53 0

All fitted with magneto and spring forks.

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3 h.p. **MINERVA,** vertical, M.O.V.	£12 0
3½ h.p. **EXCELSIOR,** Amac, h.b. control	£10 0
3 h.p. **REX,** vertical engine	£9 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

3 h.p. 1908 **REX,** Bosch magneto	£17 0
5-6 h.p. Twin **REX,** spring forks, h.b. control	£18 10
Twin-cylinder **MOTO-REVE,** magneto, Druids	£20 0

CARS AND TRICARS.

4½ h.p. **HUMBER** Tricar, 2 speeds, wheel steering	£19 0
5 h.p. **HUMBER** Car, 2-seater, good goer	£22 0
5 h.p. **REXETTE,** Oppermann 3 speeds	£18 0
Dunear, Bosch magneto	£45 0

MISCELLANEOUS BARGAINS.

B. & B. Carburetter, h.b. control, good order	14/6
Amac Carburetter, h.b. control, good order	12/6
C.A P Carburetter, h.b. control	16/6
C.A.V. V twin magneto, 45 degrees	£3 3
1912 B. and B. Carburetters, variable jets	28/6
1912 B. and B. Carburetters, single jet	27/-
1912 Sciospray Carburetters	28/6
Camel 1in. Rubber Belting per foot	1/3
Fulford Castor Wheel Sidecar	£5 0
Lycett's Carrier Toolbags (new)	7/6
Sidecar Lamps, show red light behind	7/8
Trailer, 26in. wheels	25/-
New Toolbags, 9 × 6 × 3½in.	4/8
Sidecar Aprons, green or red, with studs	7/8
New Lycett's Tubular Carriers	4/11
Longuemare Carburetters	6/-

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane, HALIFAX (Two minutes from G.P.O.)

Telephone 919.

THE MOTOR CYCLE

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The Development of the Modern Lightweight.

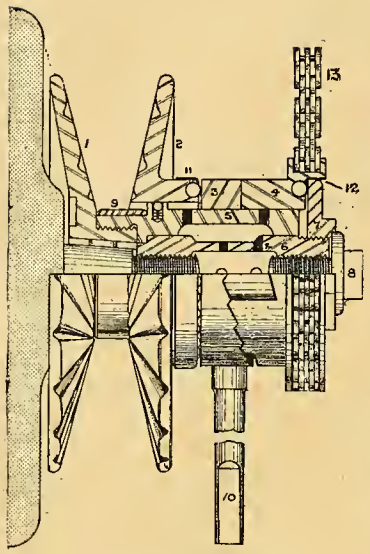
NINE years ago, in the very early days of the motor cycle movement, *The Motor Cycle* took up a very firm attitude with regard to the development of the lightweight motor bicycle. Certain people who took a very prominent part in the movement were urging the development of a very light machine weighing 80 lbs.—little more, in fact, than a motor-assisted pedal cycle. One of the individuals in question even went so far as to have a machine specially built for himself, but it was the only one of its type actually constructed. We heartily condemned machines of this nature, as they were hopelessly inefficient and far too light to be comfortable to ride, and wholly unsatisfactory as self-propelled vehicles. They had no speed, were not only slow up hill, but bad climbers, and possessed the sole advantage of portability. By dint of hard work and the spilling of much ink these facts were driven home, and, furthermore, every effort was put forward to persuade the A.C.U. to make the lightweights compete as nearly as possible on equal terms with the heavyweight now on the market. This year we have put a single and twin-cylinder medium-weight to severe practical tests, and they have emerged therefrom with flying colours. Change-speed gears and much improvement in the engines, together with a reasonable view of the weight question, have evolved a really practical machine. Such a mount is powerful and speedy, it will climb all main road hills, and maintain a good average speed. It has power enough in reserve, and is just that type of machine which should be the tyro's first mount.

The Glut of Open Hill-climbs.

WE refer elsewhere to the proposed restrictions which the A.C.U. intend to issue respecting open hill-climbing competitions. Against well organised hill-climbs, such as that held by the Birmingham M.C.C. at Harley Bank last Saturday, when every precaution is taken to safeguard both performer and spectator, we have nothing to say. Unfortunately, it has been possible hitherto for any club—even if only a few months old and whether experienced in the matter or not—to apply for a permit and hold an open hill-climb. Consequently many climbs have been held on unsuitable hills, and the organisation has often left much to be desired, and the inevitable result has been a number of unfortunate accidents, generally to competitors, but sometimes involving damage to spectators as well.

Racing in pairs certainly adds to the danger, for there are then two riders on the road instead of one—a matter of some importance at bends and corners—and, further, riders are induced by the excitement of competition when endeavouring to pass a rival to take risks which they seem not to do if riding singly. The neck and neck racing has now been banned by the A.C.U., and we think with reason. The ban will, however, still further rob hill-climbs of interest. There is no doubt that hill-climbs have their use, and that much of the high efficiency of present day machines is due to competitions of this nature. It must, however, be borne in mind that the tendency of hill-climbs is to develop a type of machine which is not wanted, for it is neither comfortable nor satisfactory for touring purposes or ordinary riding, for which 99% of motor cycles are used.

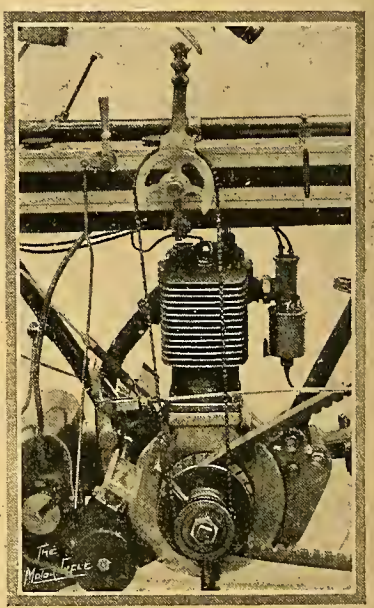
THE BRAMPTON VARIABLE GEAR.



No. 1 and 2 pulley flanges.
No. 3, inside stepped cam.
No. 4, outside stepped cam.
No. 5, sleeve.
No. 6, sleeve engine nut.
No. 7, end thrust race nut.
No. 8, locking pin.
No. 9, free engine ring.
No. 10, stay rods.
No. 11 and 12, ball retainers.
No. 13, operating chain.

The solid black marking on Nos. 5 and 6 are oil holes for permitting the lubricant applied to the outer working surface to pass to the inner working surface.

THIS is an adaptation of the variable pulley method, a great advantage of which is that a large variety of gears can be obtained. In this case the number is seven, varying between the ratios of $4\frac{3}{4}$ and $7\frac{1}{2}$ to 1. The operation is by stepped cams, the seven steps holding the cams securely in the desired position. The inside cam is free to move laterally, but not to revolve; the outer can revolve, but not move laterally. Thus the outer cam is able to force the inner against the pulley flange, and thus raise the gear. There is no provision for taking up the slack of the belt, but instead rounded grooves are cut in the pulley in such a way that they are tangential to the free engine ring, and it is claimed that by means of these grooves the belt is prevented from slipping, even when running slack on the lower gears. The operating lever is conveniently placed on a bracket near the tank, and connected by a chain to the revolving cam. The accompanying illustrations will enable the reader clearly to understand the working of the various parts. The weight of the whole gear and operating mechanism is seven pounds. It has been tried by H. C. Newman, the noted hill-climber, and spoken of in high terms. It was expected that he would use this gear on his Ivy-Precision at the Birmingham M.C.C. hill-climb.



An Ivy-Precision motor cycle fitted with the new Brampton variable pulley gear. The method of operation is clearly shown.

BIRMINGHAM - LAND'S END - BIRMINGHAM OFFICIAL RESULTS.

The Birmingham M.C.C. Committee passed the following results at a meeting last week:

	Error.
WINNER OF LYCETT TROPHY.—T. Pollock (3½ James) ...	20s.
SECOND AND SIDECAR PRIZE.—A. D. Arter (3½ James sc.)	27s.

GOLD MEDAL WINNERS.

	m.	s.
W. E. Baylis (3½ New Hudson)	1	15
F. C. Sangster (3½ Ariel)	1	15
J. H. Percox (3½ Alldays)	1	40
A. J. Stevens (2½ A.J.S.)	2	40
P. J. Evans (6 Enfield sc.)	2	45
R. W. Duke (Zenith-Gradua)	4	10
H. Ball (3½ Triumph)	5	20
R. V. C. Brook (3½ Precision)	6	17
B. Bourke (New Hudson sc.)	6	50
H. D. Jones (3½ Zenith-Gradua)	7	0
F. A. McNab (3½ Trump-Jap)	7	15
F. Read (2½ A.J.S.)	8	15
S. Wright (3½ Humber sc.)	8	20
L. Newey (3½ Ariel)	9	45
H. Walters (2½ A.J.S.)	9	45
H. Rem Fowler (3½ Norton)	11	5
H. Stevens (5 A.J.S.)	12	25
D. Cork (5 A.J.S.)	13	50
A. Young (3½ Kerry)	15	10
H. Blocksidge (3½ B.S.A.)	15	15
T. Peck (3½ Rudge)	35	26

BRONZE MEDAL WINNERS.—B. Yates (3½ Humber sc.), H. J. Cox (3½ Premier sc.), N. C. Blackwell (6 Zenith), and Dr. B. Fawssett (8 Chater-Lea sc.)



The winner of the sidecar prize, A. D. Arter (3½ h.p. James and Canoelet sidecar), who ran most regularly throughout.

SURVIVORS IN THE BIRMINGHAM-LAND'S END-BIRMINGHAM RUN. The A.J.S. team of five riders, all of whom completed the difficult course and gained gold medals.

P. J. Evans (6 h.p. Enfield sidecar), who experienced no more trouble than broken valve springs. He won a gold medal.

OCCASIONAL COMMENTS.

By "IXION."

Mudguard Attachments.

Years ago, when I first rode a motor bicycle, I used to replace a mudguard stay about every fifty miles, until in desperation I went to a birdcage maker and got some pieces of extremely stout wire, which would better have been termed steel rod, and made a good job of them.

For many seasons past I have not broken a single mudguard stay, but I have snapped many a mudguard, and I think the trade have still a good deal to learn in this respect. At the stern of the machine a common fault is to mount the rear mudguard on the carrier without increasing the strength of the guard or its attachments.

Now of all vibratory parts on a motor bicycle the rear carrier is the worst, as any rider can tell by laying his hand on it over a bumpy road. Plain bolts and straps are useless for securing light toolbags attached to it, and it is small wonder that a mudguard soon breaks its weakest point, either the small screw perhaps employed to fasten it to the fork bridge, or else the guard itself—probably at the drilled portion.

With front mudguards the weight of the front wheel stand renders the problem more acute, but in any case vibration centres at the middle of the guard, where it is bolted to a bridge half-way up the forks. The two ends of the guard usually have a certain amount of sway, and this central point gets shaken as a terrier shakes a rat. Add the fact that the securing bolt at this point is seldom cleaned, and the cause of the guard's ultimate decease is not hard to find.

Wanted, Commonsense.

I am extremely sorry to see that an obsolete type of adjustable pulley still lingers on many machines—I refer to the pattern which requires tools for its operation. This pattern is just tolerable when the large thin hexagon nut is made of really staunch stuff, and the spanner provided for loosening it is also a first-rate job; but these essentials are by no means universal. As a journalist I often ride many makes of machine in a season, and in each of the last three summers I have ridden a good 3½ h.p. machine from Coventry to Cornwall and back. On this particular run (if the sporting and scenic routes are selected) there is a lot of high gear work—fast, easy, undulating road, easily negotiated on a 3½ to 1 gear, if the engine be of that thoroughbred race which does not tug or knock under a lofty gear; but towards the westward end the sporting rider will visit several steep and cornersome hills, which demand a gear of 5 to 1 in dry weather and an even lower gear in wet or wind. With each of the three machines referred to I was compelled to make the entire run on a 5 to 1 gear, because the adjustable pulleys were of the tool-operated type, and badly made at that. The threads of the loose flange and the locking nut were so carelessly designed that the two parts locked up dead hard in running; the nut was of soft stuff, and the spanner was soft and light. I dare not leave the job of reducing the gear until I got amongst the hills, for it was an open question whether I should be able to shift the pulley at all. Now there are two or three finger-operated pulleys on the market to which I have found no objection whatever in prolonged use. With them gear reductions are the work of a moment. I cut the belt 12in. from the end, and insert a second hook fastener; I make up a 11in. bit of belt and put a half fastener at each end. When I strike the bad hills I reduce the pulley with my finger, and change the 12in. bit of belt for the 11in. The job is done in two minutes. I do not blame the trade for refusing to standardise other people's patents, for I know how it swells selling prices; but there are dozens of different principles on which a finger-operated pulley can be designed; and every maker ought either to fit a tool-operated pulley of sound design and decent material, or alternatively to bring out a finger-operated type. Only a sledge hammer and a lathe carrier could shift the pulley of a brand new T.T. machine now lying on loan in my garage.

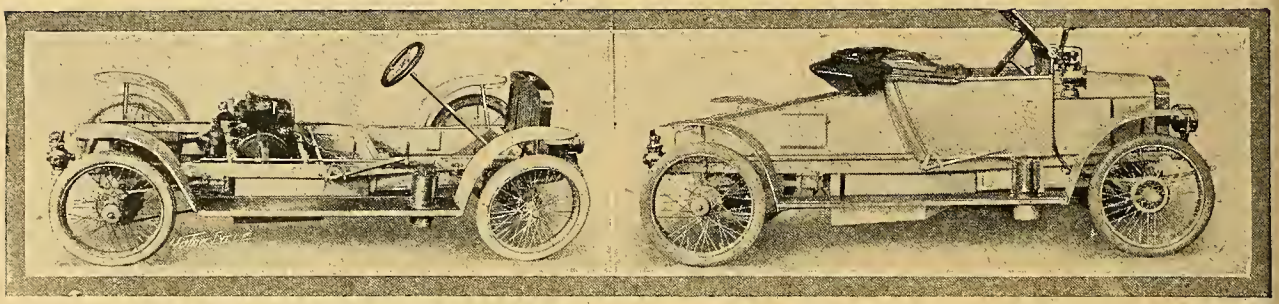
The Counter-shaft Adjustable Pulley.

I am still waiting for my ideal single-geared 3½ h.p.—the machine with chain drive (in aluminium case) to a ball bearing counter-shaft with an 8in. belt pulley, which is to increase the life of the belt to 5,000 miles, perhaps. This machine *must* come, unless I am a lying prophet, and I suppose it will want an adjustable pulley like its predecessors. In case anybody is experimenting, may I point out that when the pulley is so big it need not be made of such hard wearing stuff as a 4in. engine pulley, and I should not be surprised if a cheap wooden pulley did not suffice in this position. In that case adjustability could be procured by inserting washers between the flanges. I do not think the very heavy metal pulleys employed on some counter-shaft transmissions are at all necessary. Three 8in. wooden pulleys would cost less than one metal pulley of the same size, and would wear longer, besides reducing weight considerably.

Standardisation in 2000 A.D.

After weary years we are at last in sight of standardisation in tyre rims, but I doubt if we shall get it in other obvious details until 2000 A.D. Here is my latest wail. I have purchased a huge gasometer acetylene lamp, and after much lurid correspondence with its makers have at last persuaded them to issue a bracket which cannot shake loose, and which permits me to leave the lamp at home on brief daylight spins without unscrewing twenty-four nuts, or alternatively carrying two huge spiked prongs on my handle-bar, which would infallibly impale me if any accident caused me to make one of those graceful periodic flights over the handle-bar, which have become proverbial with so clumsy a rider as myself. But "orl is not yet peas." Last week I was testing a Triumph, a Rudge, and an Ariel. The clips were too small for the Triumph handle-bar, and too large for the Rudge; they would not go on the Ariel at all, as its arms were sharply backswept from the steering head. Surely the diameter of a handle-bar might be standardised. This particular detail affects a host of fittings and fundamental necessities. Yet when I go to the factories with rolls of leather, rubber, or canvas under my handle-bar clips I see the running shed manager turn up his lordly nose at my untidiness.

Through Buckinghamshire Lanes on a G.W.K.



Views of the chassis and complete vehicle.

WHEN first we saw the smart looking little vehicle which bears the initials G.W.K. it impressed us favourably, and we looked forward to a demonstration on the road to confirm our opinion that it was as good as it looked. The initials are the first letters of the names of the three members of the firm, Messrs. Grice, Wood, and Keiller. Mr. J. T. Wood, under whose skilful guidance the little cycle car performed so well on Birdlip and Saintbury hills in the A.C.U. One Day Trial, met us at Slough with a new G.W.K. fitted with a body which was standard but for the absence of the side door.

There was much to be learned from this trial of a new type, not only as regards springing, cooling, steering, control, and general running, but more especially the behaviour of the friction gear, a type of transmission which up to the present has been much criticised.

A Hilly Course.

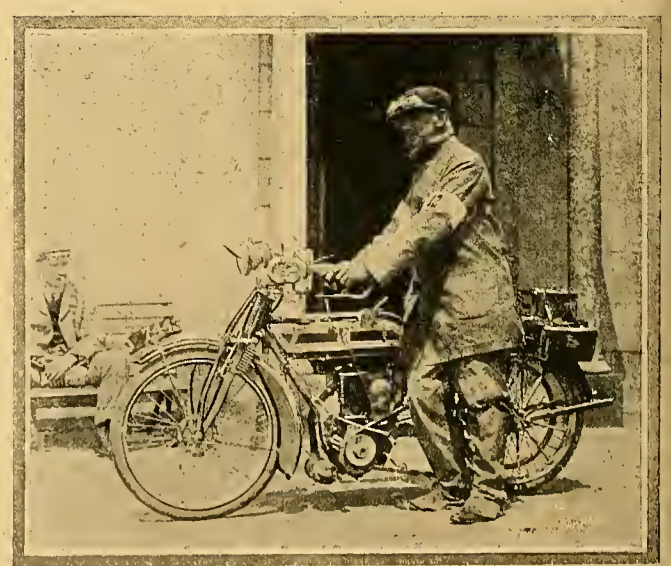
As is natural on the occasion of a trial run, we set out to find a suitably hilly course for the test, and found it in the Buckinghamshire lanes. First came quite a steep pitch near Beaconsfield, which the little vehicle took in splendid style. Then we entered the Amersham Road, taking in the reverse direction part of the old quarterly trials course. Here we found ample occasion for testing the cyclecar. On the longest hill between the two towns we came upon a traction engine with its train of trucks, and on the steepest part of the hill (about 1 in 9). Here it was too narrow to pass, so we had to remain stationary on the rough edge of the road and wait till the obstruction had gone by. The restart was made without a falter, and the vehicle got quickly under way; in fact, its acceleration was quite remarkable.

Dropping gently down the rough surface of Gore Hill we entered Chesham and made for the steep ascent of Rectory Hill (1 in 7), which was climbed in good form on second speed (there are four positions in the gear quadrant). After tea at the picturesque Crown Hotel, Mr. J. T. Wood courteously handed the wheel to the writer, whose novitiate started with the ascent of our old friend Gore Hill (1 in 8). Though in unaccustomed hands the G.W.K. made a capital ascent on second speed, and on other steep pitches encountered during the rest of the run not the slightest difficulty was experienced.

The springing was excellent. Lanchester type of springs are fitted to the rear, and taking it as a whole the vehicle rides most easily. The standard body is comfortable, and with the driver's and passenger's feet extended under the bonnet, a high dashboard, and conveniently placed screen, one is splendidly protected against the elements. The control is well arranged; the right pedal is the accelerator and the left operates the friction disc and the brake. The depression of the left pedal, which may be termed the clutch pedal, withdraws the friction disc from the flywheel, and a further movement presses a drum on its forward end against a fixed brake shoe.

Periodical Engine Vibration.

The gear lever on the vehicle we drove was a little stiff, but this was due to its newness and to the presence of a little excess of paint. The steering was also a trifle stiff, also due to newness and possible want of lubrication, but the G.W.K. steered well and was well in hand at high speeds. The two-cylinder 8 h.p. vertical Coventry Simplex engine ran without vibration up to thirty miles an hour and pulled well. Over thirty that period present in all twin engines with vertical cylinders was apparent, but not objectionably so, while over a certain speed it disappeared altogether. On the whole the G.W.K. impressed us most favourably. It has "arrived," and is a practical, handy and reliable cyclecar. We have nothing but praise for the friction gear.



BIRMINGHAM - LAND'S END - BIRMINGHAM RUN. W. T. L. Spiers (3-speed Macbeth-Precision) at the turning point, the Land's End Hotel.

My Most exciting Ride: No. 3. - O. C. GODFREY.

Interrogated by L.C.

"WHICH is my most exciting ride?" said Godfrey, in response to my query. "I have had so many, you see." I saw that I must jog his memory, for I had an idea of my own as to which was his most exciting ride, and I put it to him in one word. "Frome," I suggested, remembering that some five years ago Godfrey had sped up Frome's Hill, near Hereford, at a terrific speed and collided with a spectator at the top. "No," said Godfrey, "I remember nothing of that incident, for I was knocked senseless at the top, and the ride remains a blank. All I know is that it was my first experience of a fast motor cycle. Last year, in the Tourist Trophy Race, I had some excitement, for although I started out with an idea that I should finish near the top—for I knew I had a fast motor cycle under me—yet I experienced blue funk at the corners and sighed with relief as I passed them. But that was nothing compared with another experience of mine, and I think I can easily call this my most exciting ride.



"It was at the Easter meeting of the Brooklands Club last year. During the week-end I had competed in the London-Edinburgh Trial, and arrived back in London on Sunday morning, without having slept since Thursday night.

Racing when Dead Tired.

"Straightaway to Brooklands I went to get my Indian in trim for Monday's races. I was terribly keen on winning, for Jake de Rosier had recently come to England, and I suppose I wanted to create a good impression. Jake helped me tune the machine, and after a little practice I went home and snatched a few hours' sleep.

"On the morrow I was dead tired, but I managed to get to Brooklands, and, in a semi-stupor, I realised that the first race in which I was engaged was about to start. I don't know exactly how I got started, but have a hazy notion of the limit men going off, leaving me at scratch to catch them. It was quickly apparent that my machine was very fast, and I just let her all out, and lay down along the tank, but half awake. I kept near in, and recollect the occasional purring of the other competing machines as I passed them one by one. Still I lay along the tank while the Indian sped along. I was sufficiently master of my senses to turn into the finishing straight, and I won at the fastest speed which has been credited to any winner in a motor cycle race at Brooklands. Once in the paddock, I felt myself losing all knowledge of everything, and I fainted away. While on the track I was kept awake merely by a determination not to throttle down as I was tempted to, and the very strength of that determination kept my brain active, but at the finish I was thoroughly knocked out, and a big bruise all over my chest denoted the heavy manner in which my body rested along the petrol tank. I can recall many narrow escapes and exciting adventures on road and track, but none of them occasion such dread within me as that terrible ride on the track at Weybridge."

It is known that O. C. Godfrey is contemplating retiring from racing events.

THE GLUT OF OPEN HILL-CLIMBS.

A.C.U. RESTRICTIONS TO BE EXPECTED SHORTLY.

IN view of our recent editorial articles regarding the glut of open hill-climbing competitions and the risks which have to be taken by riders owing to the selection of unsuitable hills, the following, culled from the A.C.U. notes in the *R.A.C. Journal*, is interesting:

"The very high speed now commonly achieved in hill-climbing contests is receiving consideration by the committee. The capabilities of the modern motor cycle have improved so much during the past few years that the conditions under which these events are held have completely altered. Whereas originally it was considered a good performance for a machine to climb—at whatever speed—a particular hill, it is now merely a matter of which machine makes fastest time. Often, where the hill is of an intricate nature, the riders have to take undue risks in their efforts to display the full capabilities of their machines. . . . It really looks as if hill-climbing events, in their present form, have fulfilled their purpose. The committee will, therefore, consider what restrictions it may be feasible to impose without robbing these contests of their sporting character or checking their usefulness in the development of the motor cycle."



A Rare and Refreshing Run.

By FRED GILLETT.

FROM the sidecar attached to Hal Hill's Zenith in the N.W. London passenger trial it was my good fortune to study some phases in speed-emotion, and to witness a remarkable exhibition of self-restraint on the part of the driver.

Put a man on a machine with plenty of power and elasticity; give him an open road with nice straight stretches and other temptations; then tell him he must take six hours in getting from Jack Straw's Castle to Coventry. I appeal to the shade of Jack Straw, and ask, is this reasonable? Is it kind? Is it not asking too much of human nature? Is there no society for the prevention of cruelty to motor cyclists to step in and tell the North-west London Club that these restrictions, these controls and secret checks, are legal cruelty to Hal Hill? Will not some great orator, some public speaker, like W. Cooper, raise his voice and denounce the shackles of schedulism?

Hoping for a Traffic Stop.

In spite of the persistent self-control required to achieve the journey without getting there too soon, it was accomplished, and we reached Coventry neither before nor after our proper time. The first section presented most difficulties. We found ourselves within two miles of Aylesbury with twenty minutes in hand. Could it be done? Or rather, could it be not done? Never have I seen so pathetic a display of crawling. There was a turning off the road in Aylesbury with an island facing it. We played out a little time by circumnavigating that island. Seeing and misunderstanding this manœuvre, a well-intentioned passer-by waved and wildly shouted "Wrong road!" We thanked him politely and pursued the even "fiver" of our way. An even fiver in this case signifies 5 m.p.h. There were some cattle on the road, and we hoped for a traffic stop. No such luck. The horned ruminant is even a greater chuckle-head than its reputation admits it to be. In this same town Pooley had previously negotiated a complete and effective dog-stop, but he didn't want it, and a dog in a front wheel is worse than a dog in a manger.

We saw a good deal of Williams and Stern as far as Banbury. It was most annoying when they retired with a broken rocker, because they carried a certain amount of commissariat on board which I had found useful for reviving the faded glories of an early breakfast.

At Bicester, Os. Hill tried to borrow my watch, on the pretext that his own had stopped. I had to say that my own wasn't going either—anyhow, not with him. The confidence trick is out of place in an event of this kind. We bought a morning paper at Bicester, and I read out the latest cricket as we went along, as there seemed to be nothing in the rules to restrain passengers from reading to their drivers.

A strange thing happened to Phillips hereabouts. The lamp leapt off the near side of his sidecar and alighted on the road on the offside of the bicycle. There is nothing to account for this phenomenon scientifically. It must be the work of motor bandits putting dynamite in the lamp bracket.

A Dust Up near Coventry.

Somewhere beyond Warwick we had a merry dust-up with Pither, during which I noticed that the black hand of the speedometer was nudging the red hand. We passed Victor Hart occupying the presidential seat in the A.C. driven by Fred Hill—on the Shakesperian maxim that it is better to bear the Hills we have than fly to others that we know not of.

There was another dusty thrill near Coventry in which S. Tessier was involved. At the psychological corner the wheel of the sidecar lifted in a way which made the petrol curdle in the tank. This was the best thrill we had the whole day.

During lunch I recited to H. Morgan the little verse beginning "Seated one day," in memory of Farlow last year. I think lunch must have had a demoralising influence on Hal Hill, for after that meal his hitherto wonderfully maintained self-restraint broke down, and he decided to make a go-as-you-please return journey as a mute protest against the paralysing monotony of 20 m.p.h. There are limits to the endurance of every human being—except perhaps Karslake.

Three Up on Corners.

Rowden's machine having succumbed to a sudden seizure, that intrepid driver occupied the Zenith's carrier on the return journey. With three up, when taking corners it was a case of "when father says turn we all turn." Rowden reported a most comfortable ride home, sitting on a folded mackintosh and a coiled rubber belt, though there were moments when the words of the latest Gaiety play were realised, viz., "I shall bounce yer!"

Somehow we missed our homeward way and went up Edge Hill instead of Sunrising. With a fairly hot engine and three up we climbed it easily, in spite of a flock of sheep which caused a change down.

Tea was taken leisurely at Tring, ostentatiously in the non-stop section in order that we might enjoy the pangs of others—especially Mundy and Griffith—who preferred the uncertain tenure of a silver cup to the certainty of a cup of tea.

The route throughout was excellently arrowed by Frank Thomas, whose operatic acquaintance with "William Tell" gives him expert sagittarial knowledge.

So much for the emotions of this rare and refreshing run. The moral is sufficiently indicated in what I have said about self-restraint.

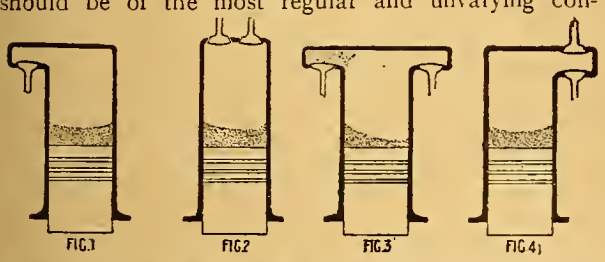
The Incomplete Fourth Stroke.

AT the moment when the inlet valve closes and the piston commences to compress the charge, there is, in the cylinder of the ordinary Otto cycle gas engine, a volume of waste gas equal to between one-fifth and one-fourth of the total cylinder capacity.

The retention of this proportion of the products of the last explosion is due to the incompleteness of the fourth—or scavenging—stroke of the cycle, during which the piston displaces only about four-fifths of the contents of the cylinder and combustion space, leaving the remainder to mix with the next incoming charge or otherwise to dispose itself.

The Position of the Spent Gases.

What amount of mischief is done by this residuum depends principally upon the design of the cylinder head and the disposition of the valves therein. The best that can be hoped for is that the spent gas will mix uniformly with the fresh charge, thus reducing its combustibility as a whole but not introducing irregularities of consistency into it. The worst that can happen is for the inert and no longer ignitable gas to occupy a position near to the sparking plug, where its presence will more or less insulate the fresh charge from the heat of the spark. It is, of course, of the greatest importance that the body of gas which has to transmit the igniting flame to the bulk of the charge should be of the most regular and unvarying consistency, otherwise the speed with which the combustion is propagated after ignition will not be the same in any two cycles, which is fatal to efficiency in the operation of the high speed petrol engine.



The diagrams represent four arrangements of cylinder heads and valves, showing the probable positions taken up by the component of waste gas at the end of the charging stroke.

Fig. 1 shows the valves placed side by side in a pocket. In such a design it is probable that, when the inlet valve opens and the piston begins its downward movement, the spent gas will precede the fresh charge and travel down the cylinder, leaving the combustion space to be filled with pure gas.

Fig. 2 shows a hemispherical combustion head with valves in an inverted position. The tendency here, also, would be for the waste gas to obey the suction of the piston and take up a position near the bottom of the cylinder.

Fig. 3. Here the two valves are each in a pocket on opposite sides of the cylinder. In this case the indrawing of the new charge would tend to sweep a portion of the old charge into the exhaust valve pocket opposite, the balance following the piston.

Fig. 4 shows the arrangement where the two valves are in one pocket, one inverted and above the other. Here, again, the tendency would be to drive the residual gas down the cylinder after the piston.

In considering the above instances, it must be borne in mind that more or less mixing must occur between the cool, moist, fresh charges and the heated remainders of the old ones, but assuming, however, that no mixing takes place, and that combustible and incombustible gases remain entirely separate at the moment of firing, there is still the fact that a substantial proportion of valuable cylinder volume is taken up unproductively.

There are a number of possible ways by which this defective fourth stroke may be made properly to fulfil its object. There are mechanical devices of various kinds, such as differential arrangements for causing the piston to travel, on its exhaust stroke, right to the top of the cylinder; spring pistons, auxiliary pistons, movable cylinder heads, and so on. There are also such methods as the admission of a gust of pure air through a port low down in the cylinder wall, this gust being admitted just after the opening of the exhaust valve and the fresh air being swept out by the piston on its fourth stroke. Or, on similar lines, two entire strokes may be dedicated to cleanliness, the piston drawing in pure air on its fifth stroke and expelling it on the sixth preparatory to beginning the cycle over again by the inspiration of a fresh charge of gas. Finally, there is the use of a forced feed, the required pressure being obtained variously from crank case compression, from a separate pump or fan, or otherwise.

Differential Stroke or Forced Feed.

The differential stroke method is perfectly effective as a scavenging stroke, and has the advantage—in most of its forms—of causing the succeeding suction stroke to be prolonged also. The forced feed system, however, is not necessarily so satisfactory. Unless the new gas is admitted through a port low down in the cylinder wall so as to drive the spent gas upwards through the exhaust valve, or unless the incoming charge is deflected down one side of the cylinder, so as to perform a scouring evolution; there is no certainty whatever that the cylinder will contain nothing but pure gas at the moment when both valves close for the explosion.

In the present position of the petrol engine, where a high degree of efficiency has been reached, it is surely anomalous that the prospect of a twenty-five per cent. increase of piston thrust should not evoke the necessary contrivance to secure it. J.B.

MILITARY MOTOR CYCLING NOTES



BY "CELERITER"

IN the event of a national crisis the members of the Legion of Cyclists and Motor Cyclists will render most invaluable assistance in many ways: Firstly, they could be called out in a moment of stress to protect important railway bridges and telegraph lines against spies prior to the commencement of hostilities. A study of recent history, more especially of September, 1899, will show the layman how, when relations are strained between two possible belligerents, ministers are very shy of aggravating the situation by mobilising the Army, for the order to mobilise might well be taken as a *casus belli* by the other side. In such a case the enemy's secret agents and spies would remain practically unwatched during the most critical period.

A Special Job for the Legion.

To mobilise would probably precipitate war, but to mobilise the Legion of Cyclists would have no political signification, and this could be done by the hon. secretary of the Legion merely calling upon corps commandants to call up all the men they could get together. We are at present an unofficial body, and we therefore have this great advantage that we can protect the country against the action of spies without endangering the negotiations of officialdom. It is a point worthy of the utmost consideration, and one that has not escaped the notice of the powers that be.

In the very first stages of the crisis the motor cyclists of the Legion will be called upon to render very valuable services. It must be remembered that when the order to mobilise goes forth from the Cabinet Council the country will be in a turmoil.

Assisting Mobilisation.

Railway lines and telegraph lines will be congested in all cases, and they may also have been tampered with. This is where the motor cyclists will come in from the very start. The corps of the Legion will be so organised that they will form a complete chain of inter-communication up and down the land. Whilst some will be running on the long trail from the War Office to distant command headquarters such as Salisbury, Lichfield, York, and Edinburgh, others will be working local areas, whilst the pedal cyclists will be used for warning outlying Territorial detachments in their own vicinity. A provisional scheme has been worked out already which provides the spreading of the news throughout England, South Wales, and the Lowlands within twenty-four hours, even if all telegraph and railway lines are cut. To put this scheme into practice, however, it is necessary to have branches of the Legion throughout the country, and riders are invited to send in their names for enrolment.

The Second Mobilisation Test.

There has been a splendid response to the appeal in *The Motor Cycle* of May 16th, but it is not yet too late for other motor cyclists to take part in the second mobilisation test on June 9th. This journal will present a silver cigarette case to the rider who makes the best record as adjudged by the umpire. Write to-day to Capt. Trapmann, 117, Piccadilly, W., sending the prescribed postcard and three penny stamps for particulars of the rendezvous.



Trooper Selby C. Bridger, of the Lancashire Hussars, who has used his 5½ h.p. Triumph in conjunction with the scouting section of his regiment. We are told that the experiment has proved a great success.

L.-Cpl. Thomas (5-6 h.p. F.N.), L.-Cpl. Gates (8 h.p. Matchless), and Trooper Wootton (3½ h.p. Rover), who are motor cycle scouts attached to the Loyal Suffolk Hussars.



Hub & Countershaft Gears.

BY "IXION."

AT last the principle of variable gears, for which a knot of enthusiasts have fought so hard and so long, is accepted; and the arena is changed. We no longer struggle for the adoption of a variable gear as an integral item of every refined tourist specification; but we contend whether a hub gear or a counter-shaft gear is preferable.

The purpose of this article is to suggest that, although there is a distinct opening for good countershaft gears at the present moment, the hub gear should eventually sweep the boards.

For the moment the dominant prejudice is probably in favour of counter-shaft gears. The first countershaft gears enjoyed quite an enviable record. Though they were mostly fitted to very primitive tricars, and utilised *via* a ridiculously fierce and microscopic cone clutch to connect up the power of a crude and slogging single-cylinder engine. they never occasioned serious trouble.

A Seven Year Old Gear Box.

Wear was slow, and often confined to the keys and keyways of the gearshafts. I inspected quite recently a sample of the Humber two-speed gear box, as applied about 1906 to a 5 h.p. single-cylinder Olympia tandem, and the tool marks were still perceptible in places on the gear wheels, while new keys and keyways represented the sole replacements in a life of nearly seven years. Such experiences become public property, and have induced a certain prepossession in favour of counter-shaft gears. Other facts have also to be taken into consideration. The counter-shaft gear usually permits easier accessibility of the rear wheel; and in most cases it doubles the belt life by employing a 6in. or 8in. pulley in lieu of the normal 4½in. type.

On the other hand, more than two speeds are ideally desirable for most purposes. The contrast between ticking along at 30 m.p.h. on a 3 to 1 gear and rattling along at the same speed on a 5 to 1 gear can only be realised by owners of three-speeded machines. These two ratios are most desirable for solo work, while occasional emergencies further demand a still lower gear, say of 7 to 1 in solo work and of 9 or 10 to 1 in sidecar work. Even a four speed hub gear is by no means a distant possibility, and as soon as the riding public is educated up to a four-speed hub, it will refuse to buy any gear providing fewer ratios.

As Reliable as a Magneto.

At present there are only a few detail complaints brought by practical riders against the three-speed hub gear. It has thoroughly proved its reliability in many a searching public test, and so long as it is kept oiled, and its spindle is prevented from revolving by proper attention to the locking devices, it is probably as reliable as a magneto or a carburetter—which in these days is high praise indeed. We should only complain that the oil-retaining devices are inefficient, and that lubricant messes up the neighbourhood of the back wheel and gets on the tyre; that the control devices might possibly be stronger; that in some instances we cannot get sufficiently low bottom ratios without screwing out the engine pulley flange to suicidal dimensions; that it is a most toilsome business to remove the wheel to change a tyre; and that the gear controls need adjusting with rather tiresome frequency, albeit the adjustment is quite easy.

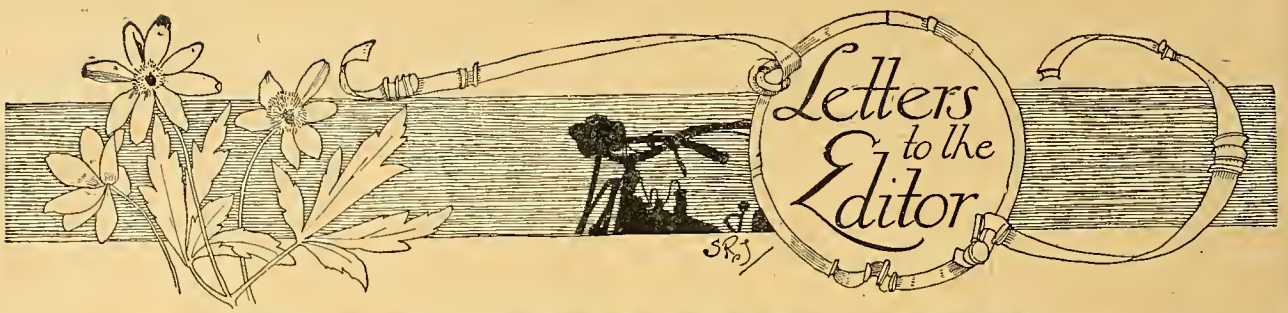
All these trifles can easily be remedied, and, without doubt, improvements will come very speedily indeed. To facilitate removal of the rear wheel some quick detachment joint will probably be incorporated in the control rods, so that the adjustments all remain *in statu quo*, and the wheel will be as readily detachable as that of a single-geared T.T. mount. The oil-retaining properties of the hubs will be perfected, so that the wheel keeps cleaner and requires less attention from an oil gun (at present half the oil injected is wasted); and hubs will be marketed with a greater reduction for sidecar work.

The Hub Gear of the Future.

From the technical aspect, several valuable advances are inevitable. The first is the probable provision of a fourth speed, which will be invaluable in sidecar work with a single-cylinder engine, and in solo work with a low-powered engine.

Most of the hub gears at present on the market dodge certain difficulties of design by carrying the clutch beyond the gears, instead of at the belt drum end. This is equivalent to placing the clutch of a motor car on the propeller-shaft. It means that the gear, and not the clutch, bears the brunt of the shock of engine explosions, and this explains why it is not advisable to fit chain drive to existing hub gears. The strain on the clutch when the low gear is in operation is tremendous. But a hub gear runs more slowly than a counter-shaft gear; it should therefore wear longer.

We may hope, therefore, that we shall eventually be offered a neat, oilproof four-speed hub gear, completely reliable, and of light weight and practically everlasting wear, with the addition that its presence will not hamper removal of the back wheel, except by demanding the loosening of two snick joints in the control rods. Finally, this gear will allow us to use a 6in. pulley, which with a 20in. belt drum (the largest diameter permissible on a 26in. wheel) will give us ratios of, say, 3⅓, 4½, 6½, and 10 to 1, so enabling a lightweight to travel on level roads at over 50 m.p.h. and climb any hill, or a 3½ h.p. to take a sidecar anywhere with speed and certainty, and average well over legal limit with ease.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

The Problem of the Automatic Carburetter.

Sir,—Referring to the letters published in *The Motor Cycle* for May 23rd, I am now a strong believer in the Binks two-jet automatic carburetter. I have failed to get anything like equal results out of two other makes. I do not see what Mr. Pickett has got to object to in Mr. Charles Binks's letter. I can rather sympathise with the latter in having to enter into a controversy with a gentleman like Mr. Pickett, who apparently knows very little about the subject. In your leading article on automatic carburetters I think you hit the nail right on the head.

CHAS. W. REYNOLDS.

Fifteen Miles with a Broken Valve.

Sir,—The other day I was out for a run on an old 3½ Rex when the stem of my exhaust valve broke, leaving about an inch and a quarter between it and the tappet. I had no tools except an adjustable spanner, with which I changed over the valves. The inlet now became automatic, and by taking rubber tube from generator, pushing one end of it up on valve stem, which it fitted tightly, and tying it around the contact breaker cover, I extemporised an inlet spring. The machine, being warm, started easily, and I did fifteen miles in an hour and a quarter. Perhaps the tip may save some of your readers a weary push of many miles.

WILLIAM A. RYAN, JUN.

Tyres for Motor Cycles.

Sir,—We were very pleased to notice the remarks made by "Ixion" on page 528 of your issue of May 16th.

We have felt for a long time that for the present high-powered motor cycles a heavy tyre is required to obtain the necessary wearing powers, comfort, and immunity from punctures. For this reason we have spent a year or two in scientific experimenting to obtain the best possible tyre, practically regardless of cost.

As you know, this is being put on the market this year in the shape of our new or No. 1 pattern, and the demand has proved that a number of riders are prepared to pay a good price for a reliable article. We know that the tyre is certainly higher in the first cost than some other makes, but the first cost is the last.

W. AND A. BATES, LTD.

The Danger of Uncontrolled Dogs.

Sir,—I see a letter under above heading in your issue of May 23rd, and can sympathise with the writer. In this country, where the dog tax is less than in England, only 2s. per dog, and 6d. for stamp, these curs constitute a regular reign of terror for motor cyclists. A short time ago I was driving my nearly new Triumph about 15 m.p.h. up a slight hill, when a large sheep dog suddenly jumped out of a hedge and charged my front wheel. I was smashed down, and lay with my right thigh pinned between the tank and the ground. Front wheel was so badly buckled that a new one was necessary, and four spokes and cyclometer broken. New lamp and horn broken up, spring forks twisted and broken, and ball bearing joint bent. Number plate and spindle also injured, besides other slight injuries. My coat was torn, and a hole sawed through the toe-cap of one boot by running belt. Fortunately I escaped personally with some bad bruises. Could you kindly inform me whether I have not a claim on owner of this dog? He promised to pay at the time, but I hear since that he is now in a different frame of mind. I have a witness, a push cyclist, who was behind me and saw the whole thing. A few successful prosecutions would do a lot to get rid of this nuisance. I believe the repair bill will amount to about £2 10s. or £3. The dog was killed. (DR.) S. A. D'ARCY.

Clones, Co. Monaghan, Ireland.

[Our correspondent certainly can claim damages if the dog is known to be vicious.—ED.]

Sir,—I feel sure that the letter of Mr. F. W. Applebee in *The Motor Cycle* of May 23rd, with reference to the dog nuisance, will appeal strongly to every motor cyclist and indeed every cyclist also.

There is no doubt that the danger is a very tangible one, and when we consider that many valuable lives have been lost through either the aimless wandering or the vicious propensities of such animals over our roads, it is certainly time that the A.C.U. took some definite steps in regard to the matter. Of my own personal knowledge I can speak of weekly, often daily, spills occasioned to riders in this district (Dudley).

In my own case, with a twenty-five years' road experience, the majority of my spills have been due to the (in most cases) unnecessary dog. Some few years ago I was thrown from my Triumph by the deliberate charge of a large dog. I promptly gave the owner notice of my intention to sue him for all damages sustained, and he immediately paid up. All motor cyclists should adopt this course, and do as I should have done, if necessary—fight the matter in the courts at all cost. The governing bodies of the pastime seem too apathetic to take action.

Another phase of the question that has always puzzled me is why the fertile brained imposer of imperial taxes, who has set his seal upon the motor industry and its poor supporters has so utterly neglected so easily exploited a source of revenue. Is there any connection between this attitude and the huge number of mixed-breed curs one encounters in the land of "inteet to goodness, look you"? The tax ought to be at least one guinea per animal. This alone would rid our streets and roads to a large extent of the wholly unnecessary and undesirable cur. Hygienic reasons also ought to dictate a substantial depletion of their numbers.

Some definite action ought to be taken by the A.C.U., as it ostensibly caters for the needs of the motor cyclist in particular. In any event it would be useful if only that type of dog owner who lacks mental balance, and takes a demented delight in seeing his dog chase a motor cycle, could be brought to a clear understanding of what his position is.

SCARLET PIMPERNEL.

Weak Axles on Low-priced Sidecars.

Sir,—In your issue of 23rd May there is a warning against investing in cheap sidecars. This I heartily endorse. Last summer I fitted a cheap sidecar sold by one of the leading motor accessory houses to my 5-6 twin. After about three hundred miles use I fortunately discovered that the axle proper was quite loose, and on further inspection found that it was held in its socket in the tube member solely by a small pin, the brazing having given up the ghost. In another few miles it would undoubtedly have come adrift with possibly serious results. Truly a cheap sidecar is false economy.

A. WALTER.

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LONDON-EDINBURGH RUN

The A. S. L.

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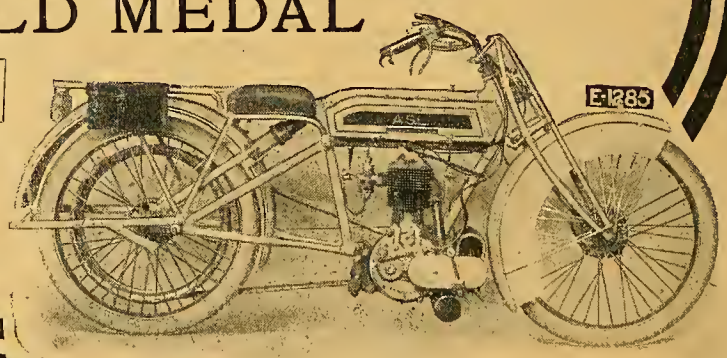
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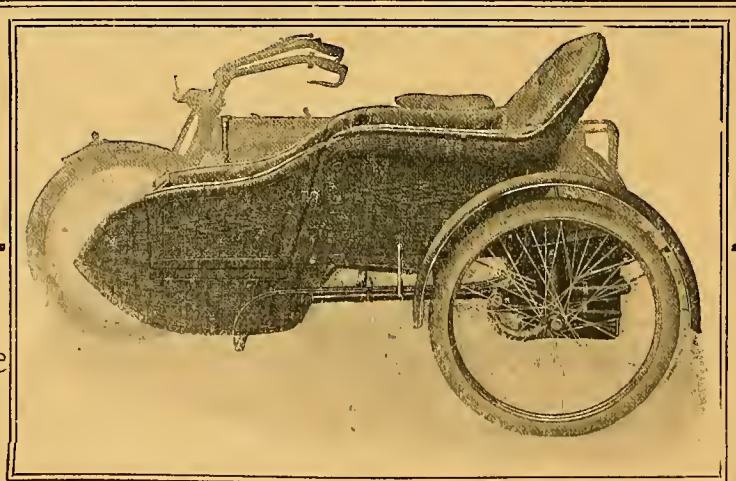
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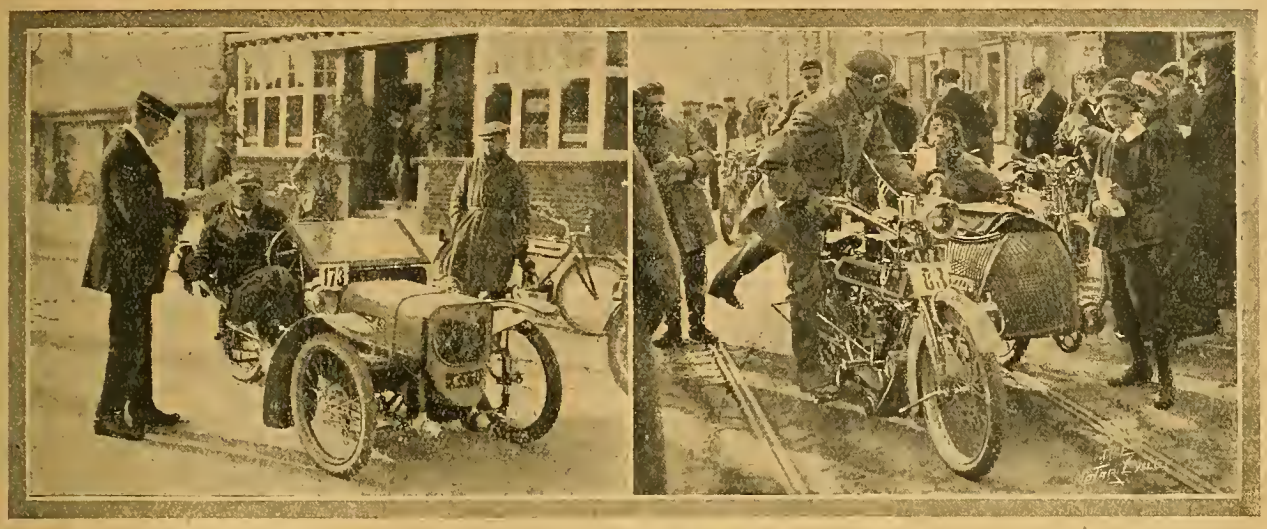
CAMBRIDGE, April 23rd, 1912.

I am writing to tell you how delighted I am with the sidecar. My only two passengers tell me that it is more comfortable than any car, which is more than I have heard said about other sidecars. I myself have only had a short ride in it, but was very much struck by the smooth riding.

The combination steers perfectly with hands off. Your patent attachment appears to set the bicycle in an upright position without any adjustment. And so I remain more than satisfied.

(The original can be seen at our offices.) "_____"

Gloria Cycle Co., Ltd., Coventry.



M.C.C. ANNUAL LONDON-EDINBURGH RUN.

H. F. S. Morgan (8 h.p. Morgan runabout), the first cyclecar driver to arrive in Doncaster.

R. E. Guest (8 h.p. Matchless sidecar) leaving the Doncaster check. This private owner has been most successful in competitions of late.

Pro Bono Publico.

Sir,—Have you ever noticed that M.C.C. (Motor Cycling Club) could also stand for "*Magna Cum Cura*"? (with great care), which might insinuate that every trial and all arrangements made and conducted by the M.C.C. are done *magna cum cura*—which I believe is the case—and other motor cyclists will agree with me.

T. NORMAN BROWETT.

Power Required for Sidecar Work.

Sir,—I notice in a recent issue of *The Motor Cycle* the various opinions expressed as to the power necessary to drive a sidecar combination, and must say I am very much surprised at the poor opinion two of your correspondents hold in respect to the ubiquitous 3½ h.p. model when used for this purpose.

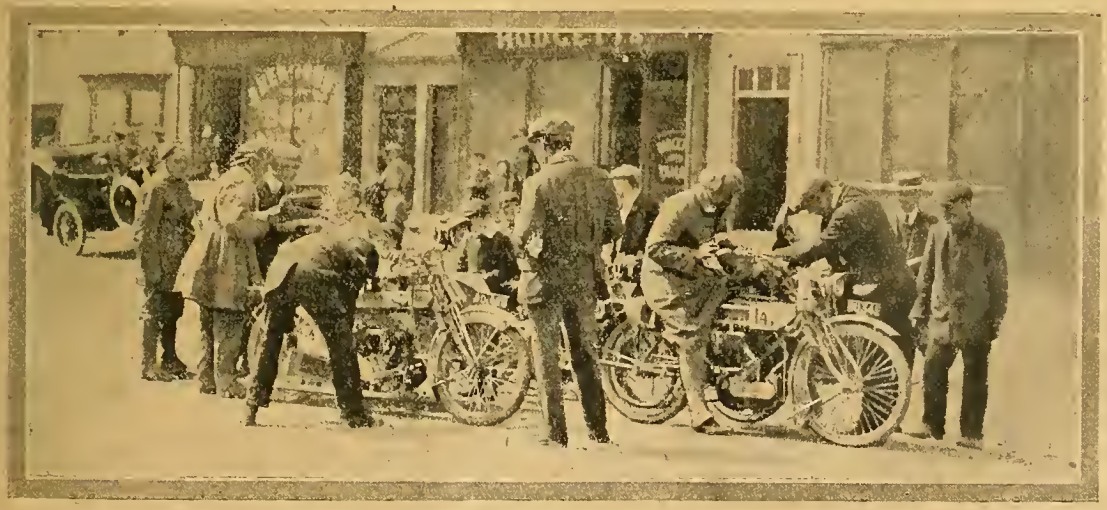
I ride a 3½ h.p. Triumph, with two speed gear, geared at ratios of 5 top and 6⅞ bottom (which you will admit are not very wide ranges, neither is the bottom ratio a low one by any means), and yet I can go anywhere with this combination, of course within reason, and have never had either to pedal or shed the passenger.

I am not writing my experiences after a few miles running extending only one season. I am giving a long and varied experience, covering thousands of miles over all roads, good, bad, and indifferent, chiefly covered in the South of England, where the roads are by no means level, and yet I have never wished that my machine was an 8 h.p., or anything like it.

As an example of the reserve of power in my machine, I would instance such runs as Eastbourne and back on top gear, which I did only the other day, also to Brighton, and in fact any road with a gradient up to 1 in 15 can be taken on the top gear, and with the low gear I have yet to find a main road hill I can't climb, and when I say I frequently travel on the Hastings Road, which incorporates River Hill a 1 in 9.9 gradient at the bend, and a mile long, I think I need not have much fear in this respect. Only the other day (Whit-Monday) I thought I had discovered its "Waterloo" by undertaking the ascent of the road from Folkestone Harbour up the Leas, a gradient which, I think, must be quite 1 in 7, if not less, but I ascended two up quite comfortably. I do not say there are no limits to a 3½ h.p. machine, because there undoubtedly are, but what I will say is that from my own personal experience, which I think can easily be endorsed, this type of machine, with a two or three speed gear, will take a sidecar anywhere in reason, with two up, at an easy average of twenty miles an hour.

J. SUMMERS.

Sir,—I am afraid that the views of some of your lucky correspondents who can afford 8 h.p., two or three speed outfits costing £80 or £90, are needlessly discouraging to others who can only afford, say, a third of that sum. I only paid £22 for my machine at Robertson's. It is a 1910 3½h.p. twin



LONDON-EDINBURGH RUN.

Signing the control sheet at Northallerton, Yorks. The competitors are F. Smith (Clyno) and J. J. Day (3½ h.p. Bradbury.)

Peugeot with single gear, and it does not look so pretty as when its career began, but it pulls my sidecar and passenger nearly anywhere. It has climbed the north side of Brockley Hill with self (eleven stone seven pounds) and passenger (twelve stone) on a 5½ to 1 gear without assistance. It will touch 35 m.p.h. on the sprint, so we need not take the dust of many cars. I am thoroughly satisfied, and am seriously thinking of lightening my machine by discarding the pedal gear, for which I have very little use.

LE 2684.

Sir,—I purchased a 1911 model two-speed Humber motor cycle at Whitsun last year and have had no mechanical troubles since, although I have done over 3,000 miles in this neighbourhood, mostly with a sidecar (not by any means a flat country, as you know), including one or two long tours, namely, *viâ* Lyme Regis and the coast road to Bournemouth, Southsea, Brighton and back. On this occasion my brother accompanied me, and we took enough luggage for a fortnight's holiday.

Some months ago I had the engine down and what little carbon there was was removed, and, as an example of Humber reliability and the power developed by their 3½ h.p. engine, I am pleased to say that recently I climbed Haldon Hill with a passenger eleven stones and myself twelve and a half stones, total weight all up over 6 cwts.

The hill rises 780 odd feet in a mile and two-fifths, and has gradients of 1 in 7, 1 in 9, and 1 in 11, and a few yards below the summit is 1 in 13. The engine is geared 4½ to 1



C. W. Mayer and his 3½ h.p. Humber sidecar.

on top and 9 to 1 on bottom. The hill has a very nasty hair-pin bend about a hundred yards from the bottom and at the steepest part, and the whole road is one of continuous corners, but the engine simply romped round the bends, and we kept up a speed of seventeen miles an hour all the time, excepting at the hair-pin bend, which we took at fifteen miles an hour (by Smith speedometer), and, in spite of such a grind uphill, the machine got into high gear at the top of the hill and went away without any suspicion of knocking.

I may say that when we started for the climb the weather was hot and muggy, and I did not believe we should be successful, but the way the untuned engine roared up was simply—well, "marvellous"; that sums it up.

My passenger was very sceptical at the commencement, but he admitted that he had had an eye-opener this time. I am so pleased with my 1911 model that I shall leave well alone and not trouble about getting a 1912 machine as I intended doing.

I need scarcely add that I have no commercial interest in the firm whatever, but write as a satisfied customer.

CHARLES W. MAYER.

Sir,—Taking into consideration all that has been written against the 3½ h.p. combination, I think a good deal of injustice has been done to it. I myself, who am only able to motor cycle at week-ends and holidays, wanted an inexpensive running mount. My friends said, "Get a 6 or 8 h.p., or you will always be walking up hills." Others said the same, only with a speed gear and so on, until at last I began to think of giving up the pastime, as I could not afford a £70 or £80 turnout, and did not much care about riding alone (clubs, I consider, are not for the pleasure-seeker). However, before giving it up, I was determined to give my 3½ h.p. (1911) a trial with a sidecar, with the result that I can climb any ordinary hill with as much speed as any reasonable being wishes. I have ridden now with the combination over 2,000 miles, and have never experienced mechanical trouble, but have had punctures galore (I am going in for a steel-studded back tyre when my present one has expired). Taking all in all, I am perfectly convinced that a 3½ h.p. and sidecar is "It" for those who are in the same position as myself, provided they have a two or three-speed gear (and a good one at that), with a light but strong sidecar. One might compare us with a 15 h.p. car, and the powerful Enfield, Matchless, Zenith, and Indian, etc., with the beautiful 50 h.p. Rolls-Royce, Daimler, or Napier. They all go well, and you can get practically the same pleasure from all, except that one is like dropping half-sovereigns as you ride along and the other sixpences—but you only get the same result.

My contention is that if you live, or are continually riding, in such counties as Devonshire and Somerset, or in Wales, you must have a good 6 h.p. with a three-speed gear, but if only a week-ender, do not waste money, as the 3½ h.p. will do all you want of it. Those who are hesitating on account of this unsettled question do not know what they are losing. Finally, treat a motor cycle well, and like a horse—it pays you in the end.

KNIGHT OF THE ROAD.

[A number of other letters on this subject are unavoidably held over until next week.—ED.]

Petrol Consumption.

Sir,—With reference to the report in a recent issue of the Oxford M.C.C. consumption trials, it would be interesting to learn from Mr. Askew and the other competitors the make of carburetter fitted and any adjustments or special fakes used. In these days of dear petrol the poorer brethren amongst us would be glad of a tip. I find an average of 90 m.p.g. for a 3½ h.p. is about the most. With respect to "J.G.B.'s" query *re* Fafnir, governed on the inlet, it is a wonder to me that this engine is not more used. I have had one in use for many years, and it seems as good as new. The mileage must be over 30,000. W.L.B.

A Magneto Experience.

Sir,—May I be permitted to state a little experience which has happened to me this week, and which, if published, may be borne in mind by other motor cyclists when they are perplexed on account of misfiring by their engine from a cause most elusive to trace. In no book of hints, either by the cycle manufacturer or the magneto maker, did I find this referred to.

I was troubled with misfiring and endeavoured to trace it. I changed plug, dismantled contact breaker of magneto, cleaned and adjusted points, took down carburetter, blew out petrol pipe, and cleaned jet. Still the misfiring continued. I took out plug again, connected it to cable from magneto, pedalled machine, and got, what appeared to be, a good spark. I set points of plug a little closer and cleaned it well. Misfiring still continued. Now I unscrewed carbon holder of magneto, and, behold, the carbon was missing! The spring holder was still there, and this was, evidently, in occasional contact with metal segment of slip ring, and so accounted for the mysterious misfiring.

To get up the carbon was the next job—it was lying at the base of magneto. I elicited the help of a mechanic, who, with dexterous manipulation of a piece of rag, pushed round the ring by a bent spoke, was able to get hold of the naughty carbon. This, instead of being its proper length of 1¼in., or thereabouts, was only ½in., so I concluded that by reason of its being so short it was not firmly held against slip ring by the spring, and hence being slackly held had shaken out of the spring holder and dropped down. Moral: Periodically examine carbons to see they have not worn too short, and always carry a spare one. F. L. WHEELER.

Just Glance at this Map!

It tells its own Story.

LONDON—EDINBURGH RELIABILITY TRIAL.



38 Competitors started from London on **HUTCHINSON TYRES.** Everyone completed the course to time and qualified for Gold Medals.

OTHER RESULTS

Birmingham Land's End Trial.
11 out of 12 riders on Hutchinson Tyres made non-stop runs.

N.W. London M.C.C. Reliability Trial.
6 Silver Cups and 1 Silver Medal and Team Prize won on **HUTCHINSON TYRES.**

27 **RETURN JOURNEY.** Competitors started from Edinburgh on Hutchinson Tyres. Everyone completed the course to time and qualified for Gold Medals.

Need we say more about Reliability?

Don't forget there were tyre troubles—but not with **HUTCHINSONS**

HUTCHINSON TYRES

Next time be wise before the Event—Specify Tyres made by
THE HUTCHINSON TYRE CO., 70, BASINGHALL ST., LONDON, E.C

6 GOLD MEDALS

M.C.C. London—Edinburgh Trial.

Five Royal Enfields competed: four 2¾ h.p. two-speed and Free-engine models—one 6 h.p. Sidecar combination.

All Qualified for Gold Medals.

Two of the above machines also competed in the return journey and finished successfully without trouble or mishap. The sidecar machine carried the driver and two passengers for a considerable part of the way.

These consistent successes of Royal Enfields are worthy of the famous "made like a gun" machines. For Speed, Silence, Flexibility, and Absolute Reliability, the Royal Enfield has been justly termed "the most perfect motor cycle ever produced."



In answering this advertisement it is desirable to mention "The Motor Cycle."

Salisbury to Exeter.

Sir,—I believe that the usual route between Salisbury and Exeter is *via* Shaftesbury, Yeovil, Chard, and Honiton. May I suggest an alternative, and, to my mind, an infinitely better, one, viz., Shaftesbury, Wincanton, Sparkford, Langport, Taunton, Wellington, and Cullompton? Although only a few miles further, the difference in gradients is remarkable. The severity of the former route has often been recorded in *The Motor Cycle*. The latter contains nothing on the down journey beyond Shaftesbury that even a push-bicycle cannot mount with comparative ease, and on the return trip a fifty yard pitch out of Langport and Shaftesbury Hill (on both routes) are the only gradients worthy of the name. WESSEX.

Should Ladies Race?

Sir,—Permit me, as one who has done a fair amount of motor cycling, to reply to your editorial on ladies riding in hill-climbs. When a lady enters for this type of competition, she thoroughly understands the risks she runs. Why this outcry when she is prepared to take them for sheer love of the sport; and the few ladies who at present enter for hill-climbs are quite as capable as the average male competitor. (Mrs.) MABEL HARDEE.

Sir,—I was sorry to read your recent leaderette "Should Ladies Race?" My personal opinion is, provided the lady has sufficient nerve and confidence, there need be no fear of her coming to grief. One must realise that in almost every sport there is a certain amount of risk. One hears little or nothing of the accidents that occur to expert motor cyclists at almost every race meeting, but because a lady has been unfortunate enough to have a spill, it seems as if the whole community are against ladies racing. It would be interesting to have other lady motor cyclists' opinions.

(Miss) LOTTIE BEREND.

Sir,—Should ladies race? Certainly not! Anything more exciting than pushing a perambulator should be instantly suppressed. No wonder Mr. Stiggins of *The Motor Cycle* can find many supporters to his views. Who *would* not applaud such laudable sentiments?

As to the appearance of the lady competitors, can they be worse than that of some of the men? We have all seen men at hill-climbs wearing garments that, if not exactly hideous, are certainly most—unladylike. We, poor souls, cannot have a mild spurt or an occasional fall without calling forth reams of protest as to our lack of self-restraint. Surely he must have noticed that the type of lady that competes in speed contests does not indulge in hysteria, but perhaps he has been too busy watching the spread eagle effect to observe anything so trifling. If he dislikes to see ladies riding (I should say women, for, of course, no lady would want to ride), why does he not stay at home? He might while away his time helping with the housework, or, failing that, a periodical that I am certain would afford him interest is "The Sunday School Recorder," but no doubt he is already familiar with that. At any rate, please let him refrain from writing on us—may I say?—sportswomen; his remarks make us so tired.

(Miss) MAY WALKER.

Improving Mackintosh Leggings.

Sir,—In your issue of May 30th, page 585, I notice "Ixion's" comments on improving mackintosh leggings. Personally, I consider these most unhealthy, and have improved them out of existence, having for many years past worn either Burberry garments (which are rain but not airproof), or else a similar material known as Gaberdine, built into overalls by my own tailor. These, far from splitting at the first time of mounting, will last out two years' hard wear, and even then be good enough for occasional use. I get them made so that they can be pulled over a reasonably large shoe (personally I wear No. 9's of generous width) and I do not find it necessary to have any clips or buttons up the side of the calf. This does away with all stooping over to fasten same.

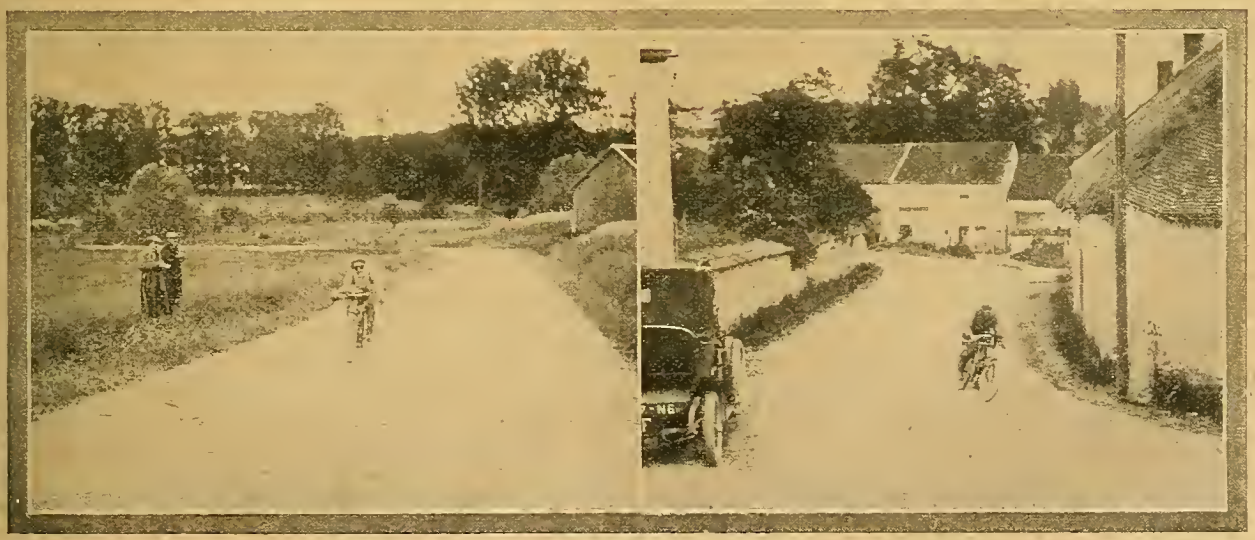
As to the leather straps under the instep, I have long ago abandoned these, and instead have sewn on a double thickness of stout flat elastic band (known as garter elastic. *Honi soit qui mal y pense*) which gives to the boot when pulled over, and then holds the spat down neatly over the shoe in a way no leather could be expected to. In addition to this, the elastic wears almost as long as the overalls, and can be easily replaced, whereas leather, from continual soaking and drying, soon rots. VAGRANT.

Road Conditions between Kew and Richmond.

Sir,—I have read with interest of the feats of the experts in climbing Honister and other "impassable" (?) tracts of road, but in my own humble opinion I have beaten all these records. I am the proud possessor of one of the ancients—to wit, an accumulator ignition Rover, B.C. 1906—and have on this machine ridden over the London Road between Kew and Richmond, only having been thrown off the machine once. I passed in safety half a mile of road (?) outside Kew Gardens with holes four to five inches deep every foot or so, but near the gates I fell into a pit, being hurled clean off the bicycle. Truly Surrey is a great county!

INJURED ANCIENT.

[We should advise our correspondent to communicate with the R.A.C. to bring pressure to bear on the authorities concerned.—Ed.]

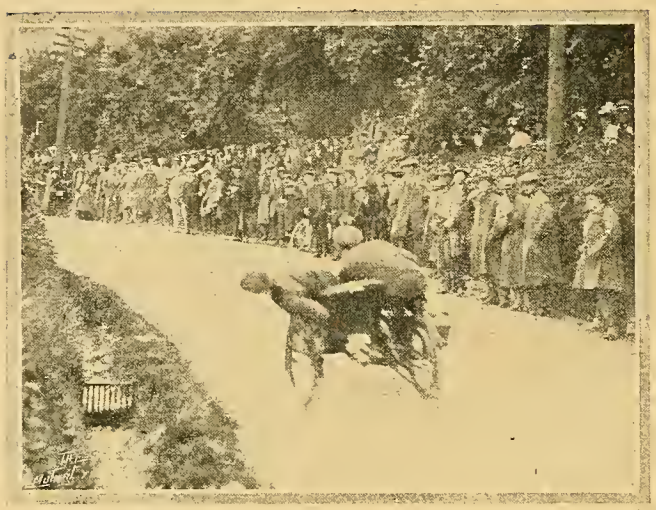


LE GRAND PRIX DE CHAMPAGNE FOR MOTOR CYCLES.

(1) Stoffel (Alcyon) at speed in Le Grand Prix de Champagne for motor cycles. (2) Espanet on a Magnat-Debon.

HILL-CLIMB AT HARLEY BANK.

Well-organised Event held by the Birmingham M.C.C.



Full speed at the bend. F. W. Barnes (Zenith sidecar) with P. Weatherilt as passenger.

WENLOCK Edge presented an animated appearance on the 1st inst., when the Birmingham M.C.C. ran off their open hill-climb at Harley Bank. The finishing tape was wisely brought down the hill some little way to give competitors an opportunity of slowing up before the corner near the top of the hill. This point is worth noting. All the arrangements were excellent and the programme was expeditiously carried out, while there were no untoward incidents to mar the afternoon's sport, though there was plenty of dashing and skilful riding. H. C. Newman, J. Woodhouse, F. W. Barnes, D. C. Bolton, and H. Reed being most conspicuous.

There was thunder about, and it looked very stormy, but the rain held off till the competition was over, with the exception of a few drops between four and five o'clock, but made up for it later, as by seven o'clock it had set in for a wet evening.

The formula recommended by *The Motor Cycle*, $\frac{C \times t^2}{W}$, was used.

CLASS I. Lightweights up to 350 c.c.—F. Ball (2¾ Douglas) made fastest time, with F. W. Barnes (2¾ Zenith) and P. W. Owen on a similar machine second and third. F. G. Edmond and V. Busby came up well on the little 2 h.p. Humbers, but J. St. John failed. H. C. Newman was using the Brampton gear, described on page 610, on his Ivy-Precision, and spoke of it in most complimentary terms. He also used it at Leathley Bank with success.

CLASS II. Touring singles between 350 and 560 c.c.—This class produced some excellent riding, H. C. Newman (3½ Ivy-Precision) made fastest time, J. Woodhouse (Regal-Precision) was second, while T. Pollock (3½ James) and C. T. Newsome (3½ Rover) tied for third place.

CLASS III. For ladies.—There were only two competitors in this class, and, as might have been expected, Miss M. Hind (6 Rex) made fastest time, but Miss C. L. Butterfield went up very well on her 2¼ Levis; in fact, this little machine and the 2½ Levis ridden by H. Newey created a very good impression. The latter especially had a very healthy bark.

CLASS IV. T.T. lightweights (1912 regulations).—As in Class I., F. Ball (2¾ Douglas) was fastest, with P. W. Owen (2½ Zenith) and J. J. Woodgate (2½ Singer) second and third. H. V. Colver (2¾ Enfield) came up well, but changed gear near the top.

CLASS V. Senior T.T. machines (1912 regulations) up to 500 c.c.—H. C. Newman again made fastest time. D. C. Bolton, whose red Rudge arrived on the step of a Rolls-Royce, where special fittings were arranged for it, was second and J. Woodhouse (3½ Regal-Precision) third.



E. Winkle (Rollo cyclecar) approaching the bend.

CLASS VI. Racing machines, unlimited.—F. W. Barnes (8 Zenith), who was very fast on the straight and careful at the bend, made fastest time. H. Reed, whose 8 Dot carried sidecar fittings, was second, and H. C. Newman (3½ Ivy-Precision) third. D. C. Bolton (3½ Rudge) and H. Newey (2½ Levis) came up excellently.

CLASS VII. Single-cylinder sidecar machines.—The speed of the machines in this class was really extraordinary, F. W. Barnes (3½ Zenith sc.), H. C. Newman (3½ Ivy-Precision sc.), and J. Woodhouse (3½ Regal-Precision sc.) making fastest time in the order named. P. Platt had not forgotten to oil his Bradbury, and we were nearly choked by the smoke.

CLASS VIII. Twin-cylinder sidecar machines and cyclecars.—Fastest time was made by H. Reed (8 Dot sc.). F. W. Barnes (6 Zenith sc.) was second, and the Rollo cyclecar, driven by E. Winkle, which came up nicely but did not seem to be nearly so fast as the sidecars, was third.

There were numerous spectators to witness the sport. The hill was efficiently patrolled by the Shropshire Constabulary, assisted by Boy Scouts. There was very little traffic to interfere with the proceedings. We were glad to hear in Much Wenlock that Miss Hough was so far recovered from her fall a fortnight ago that she was able to leave hospital.



T. Silver (Quadrant) hugging the corner. Most of the older hands negotiated the bend in this fashion.

ENGLISH-DUTCH RELIABILITY TRIAL.

THE BRITISH TEAMS.

FROM time to time we have published particulars of the English-Dutch International Reliability Trial, organised by the Dutch Motor Cycle Club, together with a list of those who had entered. Great enthusiasm has been shown throughout, and there must inevitably be many disappointments, as there are to be only three competitors in each class and two reserves. It will be remembered that the English teams were to be chosen by ballot, committees of the leading motor cycle clubs being invited to aid in the selection of a representative team. Twenty-two clubs have voted, and the results given below may be considered as final, as there are only two clubs who applied for lists of entrants who have not voted. These, however, must be relied upon to settle the tie which occurs in one instance.

The selections are given below, and form a very representative team. In each case the number of votes recorded in favour of the rider is given after the name.

PRIVATE OWNERS.

CLASS A.—Up to 350 c.c.

	Votes.
Geoffrey Smith (2¾ Humber)	21
C. Maurice Down (2¾ Enfield)	15
F. A. Hardy (Norton)	9
or F. C. Wasley (2¾ Douglas)	9
Reserve :	
J. C. Bennett-Mitchell (2¾ Douglas)	6

CLASS B.—340 to 500 c.c.

Vernon Taylor (3½ Rudge)	20
Fred Dover (3½ Premier)	16
E. Lester (3½ P. and M.)	10
Reserves :	
Seymour Smith (3½ Norton)	9
A. E. Uffleman (3½ Humber)	9

CLASS C.—500 to 1,000 c.c.

W. Cooper (3½ Bradbury)	19
W. O. Oldman (Bat)	13
C. W. Wilson (Morgan runabout)	12
Reserves :	
H. C. Few (5-6 Clyno)	9
G. B. McKechnie (8 Dot-Jap)	8

Two ladies have signified their intention of accompanying the party : viz. : Mrs. A. Wade (3¾ Scott) and Mrs. C. C. Cooke (3½ Triumph).

TRADE TEAMS.

CLASS A.—Up to 350 c.c.

	Votes.
W. W. Douglas (2¾ Douglas)	17
R. Holloway (2½ Premier)	13
Sam Wright (2¾ Humber)	10
Reserves :	
Rex Mundy (2½ Singer)	8
H. Graham Dixon (2¾ New Hudson)	8

CLASS B.—340 to 500 c.c.

W. F. Newsome (3½ Triumph)	20
W. Pratt (3½ P. and M.)	17
J. H. Slaughter (3½ L.M.C.)	11
Reserves :	
George Brough (3½ Brough)	8
F. C. North (3½ Ariel)	4

CLASS C.—500 to 1,000 c.c.

Frank Smith (5-6 Clyno)	20
F. W. Barnes (6 Zenith)	17
F. A. Applebee (3½ Scott)	10
Reserves :	
Hugh Gibson (3½ Bradbury)	7
W. H. Wells (7 Indian)	6

Maximum votes possible, 22.

The trial commences at 8 a.m. on Monday, August 5th, from Amsterdam, and the distance of the trial is approximately 160 miles. There is only one severe hill on the course, the "Grebbe," but we would advise competitors to take every precaution with their mounts, for the Dutchmen are keen and very careful. The trip, which is to occupy four or five days, will be an inexpensive one, and those who have not been chosen for the teams will do well to accept the Dutch Club's invitation to accompany the international team. Their performances will be checked and subsequently announced. Any trade entrant who has not been chosen and will not journey over to Holland may have his entry fee returned on application. Circular number plates as used in the T.T. will be issued to the team during this month.

We hear from Mr. Citroen, the Dutch Club secretary, who initiated the idea and who is in charge of the organisation, that the Dutch entries are coming in well. The Holland agents of the N.S.U. Co. have entered Gassert, the T.T. rider, for the Dutch team.

AUTO CYCLE UNION NEWS.

THE CHAIRMAN OF THE COMPETITIONS SUB-COMMITTEE.—The Rev. E. P. Greenhill has been elected chairman of the Competitions Sub-committee of the A.C.U. for 1912.

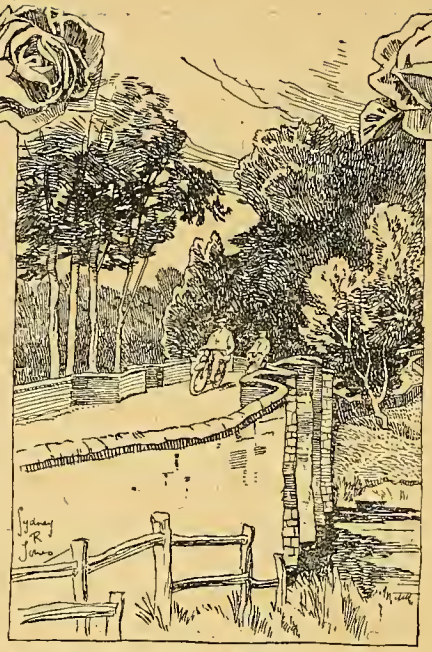
T.T. RACES OFFICIALS.—Subject to confirmation by the General Committee of the Union, Captain D. F. Nicholl, R.A., has been appointed judge for the Tourist Trophy Races, and Major F. Lindsay Lloyd, R.E., and the Rev. E. P. Greenhill assistant judges. These gentlemen will be aided in their duties by an examination committee of which Captain H. E. Davidson, R.E., has been invited to act as chairman, who will report to them the results of their examination. Messrs A. V. Ebblewhite and F. T. Bidlake will be the timekeepers, while Mr. Ebblewhite will also act as starter. The clerk of the course will be Mr. J. R. Nisbet, who so efficiently filled that office last year.

REGULATIONS AFFECTING PERMITS FOR OPEN HILL-CLIMBS.—Further to ensure the safety of both competitors and spectators at open hill-climbs, it has been decided that no permit will be granted when the hill chosen is not safe in the opinion of the Competitions Committee, and no permit will be granted if more than one competitor at a time is started up the hill. A special form to be filled in by clubs applying for permits will shortly be got out, and permits will only be granted if the rules are sent with the application and the hill chosen is stated.

FLEXIBILITY HILL-CLIMBS.—The A.C.U. will in all probability organise one or more flexibility hill-climbs, of which details will be published at a later date. The outline of the scheme is that the machines will be divided up into classes, only the top speed will be used, and the gear ratios to be employed in each class will be decided on. The slowest machine in each class will be adjudged the winner.

THE M.C.C. TEAM TRIAL FOR "THE MOTOR CYCLE" CUP.—Mr. I. B. Hart-Davies has been invited to act as judge nominated by the A.C.U. for this competition to take place in Northants on June 15th.

CURRENT CHAT



TIME TO LIGHT LAMPS.

June 6th	... ...	9.9 p.m.
,, 8th	... ...	9.11 ,,
,, 10th	... ...	9.13 ,,
,, 12th	... ...	9.14 ,,

Annual T.T. and Summer Number.

On Thursday, June 27th, one day before the Junior T.T. Race, a special T.T. and summer number of *The Motor Cycle* will be published.

London-Coventry Trial Results.

A. C. Robbins (3½ h.p. Humber and sidecar) was the actual winner of the special prize for best performance by a member of the N.W. London M.C.C. in the open class, not J. R. Haswell as stated last week.

The Arthur Moorhouse Memorial Fund.

W. Pratt advises us that the following donations have been received by him since the publication of the last list :

R. M. Marians ...	... £1	1	0
F. W. Barnes ...	... 1	1	0
J. J. Wheeldon	... 1	1	0

M.C.C. Team Trial.

The Streatham and District M.C.C. and the Leicester M.C.C. have decided to send teams for the above club championship event for *The Motor Cycle* cup on June 15th, bringing the total to twenty-six. Competitors must report themselves to the chief marshal by or before twelve o'clock at the Wheatsheaf Hotel, Daventry. The competition will start at 1 p.m. sharp, so there will be no time to waste with such a host of competitors. The list of entries as it at present stands is given below :

Bedfordshire and District M.C.C.
Birmingham M.C.C.
Bristol M.C.C.
Bristol C. and M.C.C.
Derby and District M.C.C.
Coventry and Warwickshire M.C.
Essex M.C.
Herts County M.C.C.
Liverpool M.C.C.
Luton and South Bedfordshire M.C.C.
Mersey M.C.
Motor Cycling Club.
Northants M.C.C.
Norwich and District M.C.C.
Norfolk M.C.C.
North-west London M.C.C.
Nottingham and District M.C.C.
North Middlesex M.C.C.
Oxford M.C.C.
South Birmingham M.C.C.
Sheffield and Hallamshire M.C.C.
Sutton Coldfield and Mid-Warwickshire A.C.
Walthamstow M.C.
Wolverhampton M.C.C.
Streatham and District M.C.C.
Leicester M.C.C.

The above entries total twenty-six. Late entries will be accepted at £3 3s. up to Saturday next.

Notable Hill-climbing Feats.

"Spion Kop," Paignton, was recently climbed by Reg. Holloway on a standard 3½ h.p. clutch model Premier, with a sidecar attached, and taking as a passenger Mr. H. F. Benny (captain Torbay and District M.C.C.) The combined weight of rider and passenger was 21 stones 9 lbs., and the gear used 5 to 1. The hill is about two hundred yards long, and averages 1 in 4. This is believed to be the first clean ascent of the hill by a passenger combination.

Last week, W. F. Newsome, driving a 3½ h.p. 1912 single-geared Triumph and sidecar, took three passengers up Stoneleigh, the Coventry test hill, the combined weight being almost 40 stones.

SPECIAL FEATURES.

INCOMPLETE FOURTH STROKE.
FRENCH ROAD RACE.
HUB AND COUNTER-SHAFT GEARS.
SATURDAY'S COMPETITIONS
(Illustrated).

T.T. Fund.

Recent donations to the Tourist Trophy Fund are as under : Mrs. Schulte £3 3s., Miss Muriel Hind £1 1s., and the Coventry and Warwickshire Motor Club £2 2s.

Another Stolen Machine.

A 1911 free engine Triumph, engine No. 12,699, machine No. 173,321, fitted with a Cowey speedometer, and having a broken back stand, also a set of fawn overalls, were stolen from Stanley House, St. Andrews, Pollokshields, Glasgow, between six o'clock on Saturday, May 25th, and eleven o'clock on Sunday, May 26th. The owner, Mr. J. B. Wharrie, is offering £5 for information leading to the recovery of the machine.

T.T. News.

Messrs. Ebblewhite and Bidlake will, in all probability, take the times for the Junior and Senior T.T. races in the Isle of Man. The official hotel will be "The Sefton." As regards transport arrangements, both the Midland and I.O.M. Steam Packet Companies will endeavour, if possible, to accommodate the machines on the upper decks of the steamers, and everything possible will be done to render the transport of the machines as safe and as easy as possible.



HILL-CLIMBING EXTRAORDINARY.
After the London-Edinburgh Run, P. Platt, one of the successful competitors, drove his 3½ h.p. Bradbury up Nottingham Place, Edinburgh, a steep acclivity, with six passengers on board.

London-Edinburgh Run.

Two Hazlewood machines were ridden in the London-Edinburgh Return Journey Competition and both riders, A. Walsgrove and F. Begley, were successful in obtaining gold medals.

The Indefatigable Motor Cyclist.

Motor cyclists appear to be indefatigable. Several return journey men rode twenty or thirty miles home after finishing the London to Edinburgh run on Monday, the 27th ult.

Doncaster and District M.C.C. Reliability Trial.

The results of the trial on Whit-Monday are as follows: 1. F. H. Dunstan, lost no marks; 2, A. Stacey, lost three; 3, T. H. Dew, lost four; 4, J. A. Bassett, lost eight.

Inter-club Hill-climb at Oakamoor.

On Saturday next, the annual inter-club hill-climbing competition for the Bolton cup takes place at Oakamoor, Staffs. The contest is open to the following clubs: Derby and North Staffs. A.C., Mid. Staffs. A.C., North Staffs. M.C.C. and the Derby and District M.C.C. The climb commences at 12 o'clock.

T.T. Entries.

The N.S.U. Co. wish us to correct the statement that they have entered two machines for the Tourist Trophy races. Two N.S.U. machines have been entered by Gassert—one in the Senior race and one in the Junior—but this has been done entirely on his own account, the machines being in no way entered by the firm.

Flexibility Trial near Aberdeen.

The Aberdeen and District M.C.C. held a flexibility trial on the Slug Road on Saturday last. The winners were: 1, H. Millar (3 h.p. T. T. Matchless), 5.36; 2, G. F. Davie (3½ h.p. Rudge), 5.12; 3, J. Corby (3½ h.p. Triumph), 4.61; 4, W. Simpson (3½ h.p. Rudge), 4.45. There were fourteen competitors. The roads were in excellent condition, but the weather, though dry, was far from warm, and heavy banks of mist drifting up the sides of the hill did not help to improve matters.



G. Duller, a well known jockey, who is as much at home on his 8 h.p. Chater Lea-Jap as he is astride a racehorse.

FUTURE EVENTS

June 14 and 15.—Dublin M.C.C. Open 24 Hours' Reliability Trial.
„ 15.—M.C.C. TEAM TRIAL FOR "THE MOTOR CYCLE" CHALLENGE CUP.
„ 28.—JUNIOR TOURIST TROPHY RACE.
„ 29.—North Middlesex M.C.C. Open 12 Hours' Reliability Run.
„ 29.—Mersey M.C. Open Hill-climb.
July 1.—SENIOR TOURIST TROPHY RACE.
„ 6.—Dublin M.C.C. Open Hill-climb.

A.C.U. Membership.

Nearly 800 names are down for election at the next committee meeting of the Auto Cycle Union.

The Second Mobilisation Test.

There is still a chance for any reader who desires to take part in the next mobilisation test on Sunday, June 9th. The scheme was explained by our military correspondent, "Celeriter," in the issue of May 16th last.

A Police Trap.

A correspondent informs us that there is a police trap working between Bristol and Weston-super-Mare. On entering Weston he was stopped by two policemen and asked for his licence, and informed that his time had been taken.

A Curious Offer.

We have before noted the unusual articles which are offered to our advertisers in exchange for motor cycles. A correspondent writes to say that he has been offered a complete set of fittings for a fish and chip shop, but as he is a metal merchant he does not think that the fish and chip business would combine well.

Some Contents of this Issue.

The results of the London-Edinburgh Run and also the time and formula winners in the Birmingham M.C.C. Harley Bank hill-climb appear in this issue, besides a description and illustrations of the Grand Prix de Champagne, and the British teams in the English-Dutch trial. Brief results of club competitions in all parts are also included.

Care and Despatch at a Hill-climb.

At the Birmingham M.C.C. hill-climb on Harley Bank 120 entries were run off in two hours and a quarter. The competitors and machines were weighed at the top of the hill immediately after each climb.

Nearly 100 m.p.h.

Under F.A.M. sanction, Ray Seymour, on a 7 h.p. Indian, at Los Angeles track, attacked records, and is credited with covering the first mile in 36⅘s. = 97.82 m.p.h., if confirmed the fastest speed ever accomplished on a motor cycle. He broke all records up to twenty miles, his average speed being 93¼ m.p.h.

Another Indian rider, Lon Claflin, succeeded in annexing all amateur track records from 1 to 17 m.



LE GRAND PRIX DE CHAMPAGNE FOR MOTOR CYCLES. (See next page.)
(1) Verifying the cylinder dimensions of Fenton's Triumph. (2) V. Taylor examining the interior of his engine.

Le Grand Prix de Champagne.

THE Motor Cycle Grand Prix was run off on Sunday last under bad weather conditions, and was chiefly noticeable for the troubles experienced by the English riders, only one of whom (Fenton, Triumph) completed the course. The course was in the neighbourhood of Reims. Dixon (New Hudson), after travelling about one kilometre, suffered a bad fall owing to his handle-bars coming loose; this was curious, as he had tightened them overnight; his fall occurred at about 55 m.p.h., and he cut his leg and hand rather badly. Cocker (Singer) was going well, but lost his compression tap. Vernon Taylor (Rudge) blew in the top of his piston. Berwick (New Hudson) blew off his cylinder head overnight, and though he obtained another machine for the race his back cover kept coming off the rim, and he was thus put out of the race, and Mundy (Singer), the remaining Englishman, had a seize after about six kilometres; surely never was there such a chapter of accidents.

The English team, however, were not the only ones to have trouble, for Fay (René Gillet) had his front wheel come out when travelling at close on a mile a minute. It is a marvel that he was not seriously hurt, but he was fortunate enough to escape with damaged knees. So much for the troubles.

The Alcyon and Peugeot machines were particularly noticeable for their fine and consistent running. Péan, who proved the winner, on a 2¾ twin Peugeot, averaged 41 m.p.h. throughout—a really wonderful achievement, seeing that some of the corners were so bad that the competitors were obliged to dismount and run round. He thus repeated his success in the Circuit de l'Eure. Gabriel was present to witness the race, but he is not yet recovered from a fall last week. Fenton rode Gabriel's new Triumph and finished first in the third category. Results:

CLASS I.—Up to 300 c.c.

		h. m. s.
1.	Franquebalme (Terrot)	3 19 24
2.	Cuzeau (Terrot)	3 22 40
3.	Schwab (Terrot)	3 36 43

CLASS II.—Up to 350 c.c.

		h. m. s.
1.	Péan (Peugeot)	3 7 53
2.	Lacroix (Peugeot)	3 14 43
3.	Desvaux (Peugeot)	3 32 29



Cuzeau (Terrot), rounding one of the numerous bends on the course. He finished second in Class I.

CLASS III.—Up to 500 c.c.

1.	Fenton (Triumph)	3 10 3
2.	Naas (Griffon)	3 18 4
3.	Bloch (René Gillet)	3 28 34

GENERAL CLASSIFICATION.

1.	Péan (Peugeot)	3 7 53
2.	Fenton (Triumph)	3 10 3
3.	Lacroix (Peugeot)	3 14 43

Vernon Taylor on the T.T. Rudge, though experiencing trouble, managed to accomplish by far the fastest lap, his time being 34m. 20s. = 52.51 m.p.h. For this performance he annexes the Coupe Hanriot offered for the fastest circuit.

T.T. ENTRIES TO DATE.

THE following is a list of entries for the T.T. Races. In addition to those enumerated, up to the time of going to press, there are twelve provisional entrants in the Senior and six in the Junior races, who had not paid their entry fees. T. Steele cabled his entry from Johannesburg:

THE SENIOR EVENT.

J. R. Haswell (3½ Triumph)
J. R. Alexander, jun. (3½ Indian)
H. H. Bowen (3½ Dot)
N. F. Holder (4 Blumfield)
S. C. Perryman (4 Blumfield)
L. B. Hart-Davies (3½ Triumph)
F. A. Applebee (3½ Scott)
Hugh Mason (4 Matchless)
J. A. Hoffmann (3½ Triumph)
F. Philipp (3½ Scott)
Blumfield, Ltd. (4 Blumfield)
C. B. Franklin (3½ Indian)
D. C. Bolton (3½ Rudge)
Quintin Smith (3½ Triumph)
C. R. Martin (3½ Triumph)
P. W. Owen (3½ Norton)
J. R. Hayes (3½ Cayenne)
Karl Gassert (3½ N.S.U.)
Alister Kirk (3½ Triumph)
G. Griffith (3½ N.S.U.)
Paul Schmidt (3½ N.S.U.)
C. S. Franklin (3½ N.S.U.)
A. H. Alexander (3½ Indian)
H. Petty (3½ Singer)
J. L. E. Emerson (3½ Norton)
T. Steele (4 Rex)
J. Gibson (3½ Trump-Jap)
Cleveland Motor Cycle Co. (Cleveland)
W. H. Huckle (3½ Zenith)
J. W. Adamson (3½ Triumph)
Allen S. Jones (3½ Rudge)
W. Jones (3½ Rudge)
J. Woodhouse (3½ Precision)
H. A. Collier (4 Matchless)
C. R. Collier (4 Matchless)
J. F. Sirette (3½ twin Indian, 70×54.5 mm.)
Cleveland Motor Co. (one Cleveland)

THE JUNIOR RACE.

P. J. Evans (2¾ Humber)
Hugh Mason (2¾ Newcastle)
S. L. Bailey (2¾ Humber)
H. Petty (2½ Singer)
J. H. Watson (2¾ Humber)
D. M. Brown (2¾ Humber)
Karl Gassert (2¼ N.S.U.)
J. Stewart (2¾ Douglas)
J. I. Walker (2½ N.S.U.)
J. Kerr (2½ N.S.U.)
Harold Cox (2¾ Forward)
E. Kickham (2¾ Douglas)
H. J. Beal (2½ N.S.U.)
A. E. Woodman (2¾ Humber)
J. Haslam (2¾ Douglas)
Robert Ellis (2¾ Nut)
H. C. Newman (2½ Precision)
Rex Mundy (2¾ Singer)
Vernon Taylor (2¼ O.K.)
D. R. O'Donovan (2½ Singer)

T.T. FUND.

Donations to the Tourist Trophy Fund have been fairly numerous up to the present, but as the expense to the A.C.U. is a very heavy one, further aid is desired.

	£	s.	d.
H. P. E. Harding...	7	0	0
J. W. F. Tranmer	1	0	0
W. W. Hall ...	0	2	6
L. Newton Vizard...	0	5	0
Hugh Gibson ...	0	5	0
The Motor Cycle ...	5	0	0
Anonymous ...	40	0	0
Cambs. University M.C.C.	1	1	0
Herbert E. Brooks	0	10	6
Price's Candle Co.	5	5	0
Vacuum Oil Co. ...	5	5	0
E. M. P. Boileau ...	0	10	6
A. H. Priestley ...	0	10	6
Miss Muriel Hind...	1	1	0
Mrs. M. Schulte ...	3	3	0
Continental Tyre Co.	2	2	0
Temple Press, Ltd.	5	5	0
A. J. Sproston ...	0	10	6
Coventry and Warwickshire M.C. ...	2	2	0
Dr. Brewerton ...	1	1	0

M.C.C. LONDON TO EDINBURGH AWARDS.

THE following awards were officially given out by the Motor Cycling Club after the committee meeting on Monday night. For the third year in succession, G. Brough has won the Motor Cycling Club Challenge Cup for covering the outward and homeward journeys most closely to schedule time—a marvellous performance. The cup now becomes the property of the holder:

MOTOR CYCLING CLUB CHALLENGE CUP: Error.

1. G. Brough (3½ Brough) 0
2. H. Karslake (3½ Rover) ... ... 1m. 5s.
3. A. C. Robbins (3½ Humber) ... ... 4m. 25s.
4. W. B. Gibbs (2¾ Douglas) ... ... 4m. 51s.

WELLS CUP, presented by W. H. Wells, and competed for by a motor cycle and sidecar entered for the single journey, under the same conditions as the above:

1. F. Smith (5-6 Clyno sc.) 0
2. W. Pratt (3½ P. and M. sc.) ... ... 1m. 49s.
3. H. Huckle (Zenith sc.) ... ... 3m. 14s.
4. W. A. Jacobs (6 Rex Sidette) ... 7m. 20s.

CLARK CUP, presented by R. O. Clark, and competed for by a motor cycle and sidecar entered for the double journey, under the same conditions as the above:

1. F. Smith (5-6 Clyno sc.) 0
2. A. Abbott (3½ Bradbury sc.) ... ... 2m. 29s.
3. T. G. Proctor (7 Indian sc.) ... 7m. 6s.
4. C. F. Halsall (8 Matchless sc.) ... 9m. 20s.

SINGLE JOURNEY GOLD MEDALS:

H. G. Bell (5-6 F.N.)
Commodore Sir R. K. Arbuthnot, Bt., R.N. (3½ Triumph)
D. S. Baddeley (6 Baddeley)
R. M. Marians (3½ P. and M.)
F. E. Wasling (2¾ Enfield)
W. Price (3½ Cleveland)
A. J. Duncan (6 Rex)
D. Barratt (3½ Triumph)
A. T. Stanton (3½ Bradbury)
A. E. Catt (3½ Triumph)
E. Gwynne (7 Indian)
R. Clark (3½ Rudge)
Stanley Webb (3½ Bradbury)
S. Savage (3½ T.T. Triumph)
A. Lister (3½ T.T. Triumph)
J. H. S. Letchworth (8 Bat)
A. Peppercorn (3½ Baddeley)
J. Kerr (3½ N.S.U.)
E. B. Dickson (8 Bat)
L. A. Baddeley (3½ Baddeley)
W. Pratt (3½ P. and M. sc.)
J. Frankenstein (3½ Scott)
G. B. Fry (3½ Quadrant)
J. P. Legrand (6 Rex sc.)
J. Dawson (3½ Triumph)
W. A. Jacobs (6 Rex sc.)
P. D. Walker (3½ T.T. Rudge)
J. Haslam (6 Zenith)
J. Chater-Lea, jun. (8 Chater-Lea sc.)
J. R. Blackburn (6 Zenith).
G. Wray (3½ Bradbury sc.)
G. A. Reed (2¾ Humber)
J. R. G. Rowden (3½ Triumph)
S. Sawer (3½ Premier)
F. Dover (3½ Premier)
S. T. Tessier (7-8 Bat sc.)
G. P. Howe (3½ T.T. Rudge)
A. Mabon (3½ Rudge sc.)
Southcomb May (8 Portland-Jap sc.)
Elijah Wells (4 L.M.C. sc.)
J. C. Haward (5-6 Zenith sc.)
J. Jewell (3½ P. and M.)
H. A. Sudfeldt (6 V.S.-Jap sc.)
W. Barratt (3½ Rudge sc.)
J. W. Hewson (5 A.J.S. sc.)
P. G. E. James (7 Indian)
Hugh Gibson (3½ Bradbury sc.)
W. H. Wells (7 Indian sc.)
P. Platt (3½ Bradbury sc.)
G. Stevens (5 A.J.S. sc.)
L. Austin (5 A.J.S. sc.)
L. E. Cass (4½ Quadrant sc.)
R. Lord (6 Rex sc.)

Cyclecars.

Dr. D. B. Howlett (5-6 A.C.)
W. Chater-Lea (8 Chater-Lea)
C. M. Keiller (8 G.W.K.)

DOUBLE JOURNEY MEDALS:

S. Phillips (2¾ Douglas)
J. Stevens (2½ A.J.S.)
W. Cooper (3½ Bradbury)
T. H. Haddock (2½ A.J.S.)
W. P. Tippett (3½ Humber)
D. Slatter (2 Alcyon)
E. Pond (3½ Rudge)
A. J. Dixon (3½ Singer)
P. Shaw (3½ P. and M.)
A. V. Deacock (6 N.L.G.)
F. W. Applebee (2¾ Centaur)
A. Webster (2½ Hobart)
H. J. Beal (3 N.S.U.)
R. Charlesworth (3½ Zenith)
G. Boswell (3½ T.T. Ariel)
F. J. Watson (3½ Swift)
H. Greaves (2¾ Enfield)
H. Karslake (3½ Rover)
D. Popplewell (3½ Triumph)
F. C. Wasley (2¾ Douglas)
A. C. Robbins (3½ Humber)
D. H. Noble (3½ Rover)
E. A. Collins (3½ Zenith)
W. E. Roots (3½ Singer)
W. B. Gibb (2¾ Douglas)
Eli Clark (2¾ Douglas)
C. T. Newsome (3½ Rover)
R. Croucher (3½ Abingdon)
C. Hemy (3½ Service)
H. E. Davidson (3½ Kerry)
G. Brough (3½ Brough)
G. T. Gray (3½ Rudge)
S. J. Bellchamber (3½ Rover)
C. E. Lovett (3½ Triumph)
J. S. Holroyd (2½ Moto-sacoche)
F. Bigley (2¾ Hazlewood)
J. A. Campbell (3½ Rudge)
G. L. Fletcher (2¾ Douglas)
H. Le Vack (2½ Motosacoche)
H. C. Mills (3½ Premier)
W. F. Guiver (3½ Rudge)
S. F. Garrett (3½ Premier)
G. Griffiths (3½ Alldays)
A. Walsgrove (2½ Hazlewood)
H. R. Whitmore (3½ Rudge)
J. Sydney (3½ Quadrant)
H. Patterson (2½ Moto-Rêve)
H. G. R. Slingo (3½ Rover)
R. E. Guest (8 Matchless sc.)
R. C. Davis (8 Chater-Lea sc.)
A. J. Sproston (3½ Rover sc.)
H. P. Beasley (3½ Rover sc.)
R. O. Clark (2¾ F.N. sc.)
F. E. Pither (6 Enfield sc.)
W. H. Bedford (6 Rex-Jap sc.)
C. W. Meredith (3½ Bradbury sc.)
H. E. Hull (7 Indian)
F. C. North (3½ Ariel sc.)
B. A. Hill (7 Indian sc.)
F. Smith (5-6 Clyno sc.)
H. Huckle (6 Zenith sc.)
A Abbott (3½ Bradbury sc.)
T. C. Proctor (7 Indian sc.)
C. F. Halsall (8 Matchless sc.)
G. Nott (8 Matchless sc.)

Cyclecars.

H. F. S. Morgan (8 Morgan)
J. T. Wood (8 G.W.K.)

SILVER MEDALS:

G. Bunn (3½ A.S.L.), 23h. 55m.
F. White (6 Rex sc.), 23h. 9m.
Roy Walker (3½ New Hudson sc.), 23h. 55m.
A. J. Clayton (3½ Humber sc.), 23h. 6m.

HARLEY BANK HILL-CLIMB RESULTS.

BELOW we give the first three competitors as determined by the formula in Saturday's Birmingham M.C.C. open hill-climb at Harley Bank, Wenlock Edge. The results are subject to confirmation by the committee:

CLASS I.

Rider and machine.	Time.	Fig. of merit.	Position. Time	Formula
F. W. Barnes (2¾ Zenith) ...	58⅘s.	312	2	1
P. W. Owen (2¾ Zenith) ...	59⅕s.	314	3	2
A. J. Dixon (2½ Singer) ...	64⅗s.	396	7	3

CLASS II.

H. C. Newman (3½ Ivy-Precision)	48s.	361	1	1
J. Woodhouse (3½ Regal-Precision)	50⅘s.	372	2	2
H. Reed (3½ Dot)	52⅘s.	391	7	3

CLASS III.

Miss M. Hind (6 Rex)	54⅔s.	830	1	1
Miss Butterfield (2¼ Levis) ...	101⅘s.	882	2	2

CLASS IV.

P. W. Owen (2¾ Zenith) ...	57s.	292	2	1
J. J. Woodgate (2½ Singer) ...	61s.	390	3	2
F. W. Barnes (2¾ Zenith) ...	65⅘s.	386	5	3

Rider and machine.	Time.	Fig. of merit.	Position. Time	Formula
CLASS V.				
H. C. Newman (3½ Ivy-Precision) ...	47s.	345	1	1
J. Woodhouse (3½ Regal-Precision) ...	50⅗s.	371	3	2
D. C. Bolton (3½ Rudge)	48s.	382	2	3
CLASS VI.				
P. Weatherilt (2¾ Zenith)	60⅖s.	354	11	1
H. C. Newman (3½ Ivy-Precision) ...	47⅗s.	360	3	2
J. Woodhouse (3½ Regal-Precision) ...	52s.	394	6	3
CLASS VII.				
J. Woodhouse (3½ Regal sc.)	73⅘s.	384	3	1
F. W. Barnes (3½ Zenith sc.)	68⅗s.	412	1	2
H. C. Newman (3½ Ivy sc.)	69⅗s.	445	2	3
CLASS VIII.				
F. W. Barnes (6 Zenith sc.)	64s.	521	2	1
F. H. Southam (6 Zenith sc.)	64s.	525	2	2
H. Reed (8 Dot sc.)	59s.	544	1	3

The best figure of merit was made by P. W. Owen in Class IV.

DINAS MAWDDWY CLIMBED.

Two Members of the Coventry Club accomplish the Feat.

ON Saturday last the fifth annual Welsh run organised by the Coventry and Warwickshire Motor Club took place, starting from Coventry at 7 a.m. The morning's route was to Lake Vyrnwy, the competitors journeying *via* Coleshill, and joining Watling Street at Weeford Corner, and then *via* St. George's, Shrewsbury, Alberbury, Llansaintffraid, and Llanfyllin to Lake Vyrnwy. *En route* a speed-judging competition was arranged, with the result that the motor cycle class was won by J. R. Haswell (two-speed Triumph sc.) Mr. Geoffrey Smith (2¾ Humber) took times at the secret check and at the finish, whilst Mr. E. J. Hardy, trials hon. sec., was the time-keeper outside Shrewsbury.

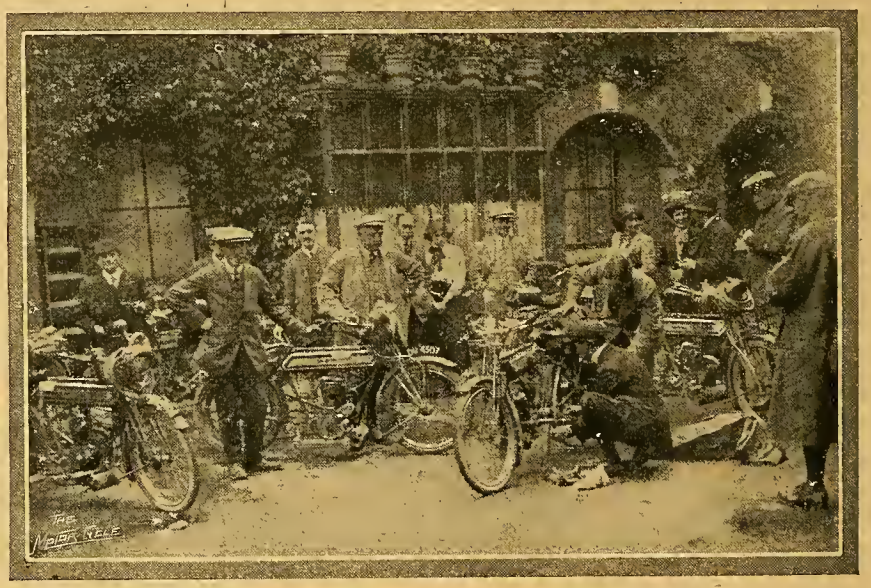
The following gained souvenirs for completing the run within five and a half hours: V. A. Holroyd (Rudge-Multi), C. T. Lloyd (6 Rex Sidette), J. R. Haswell (3½ Triumph sc.), A. Elson (4 Singer sc.), D. Elson (3½ Triumph), E. Martino (3½ Rudge), W. G. Blatch (3½ Rudge), A. Wright (3½ Triumph), A. N. Barrett (3½ Rudge), A. D. Arter (3½ James sc.), and W. F. Newsome (3½ Triumph).

E. A. Gorton (6 Rex Sidette) lost his souvenir by about two minutes, and reported he had stopped to chat with Miss Hind in Shrewsbury. B. S. Gorton (3½ Rex) was half an hour late, owing to a puncture and broken belt. E. A. Isherwood (Arden cyclecar) retired in the neighbourhood of Coleshill, as, unluckily, he lost the fan belt, and was not aware of the fact until the engine commenced to overheat. It took some time to have a new one made, so he resolved not to continue.

In the afternoon the members of the club (who, with the car party, numbered over fifty) attempted to climb the hill leading from Lake Vyrnwy to Bala. This hill has a gradient estimated to be in the neighbourhood of 1 in 4½, and rises 1,600 feet. A number of the machines were successful, including Holroyd's Rudge, Lloyd's Rex, Haswell's Triumph sc., Elson's Triumph, Barrett's Rudge, Arter's James sc., Newsome's Triumph, and Smith's 2¾ Humber. Continuing along the stony ridge on the side of the mountain, which is a route not recommended to be followed in a hurry or in the dark, the members journeyed to the Hand Hotel, Llangollen, the headquarters.

The Steepest Hill in Wales.

Next day the objective of the trip, namely, Dinas Mawddwy, was approached *via* Corwen and Bala. The easy side of Bwlch-y-Groes (known as Dinas Mawddwy) was a foretaste of what was to follow, and a number of the party came to a standstill. The hilltops were wrapped in mist, and at some points it was impossible to see twenty yards. Bwlch-y-Groes rises 1,750 feet in two miles, the gradient for long stretches being as steep as 1 in 4. It was intended to hold an impromptu hill-climb on the southern side, the prizewinner to be the one who got highest up, but when W. F. Newsome had reduced his gear to 6⅓ to 1 and made a clean ascent at the first time of asking, the competition idea was dropped. This was really a marvellous achievement, and is undoubtedly the first authenticated ascent of the mountain pass. Those who would like to study the achievement should refer to the Contour Road Book, Western Division, No. 34, pages 798-9. A number of members of the Merionethshire Motor Cycle Club had read of the Coventry Club's proposed onslaught on this hill, and had gathered to witness the fun, besides which two cars conveyed spectators to the hill. Most of the other members of the Coventry Club had a try, but all were doomed to failure except Sam Wright, whose 3½ two-speed Humber went sailing merrily up the hill in the same way that it annihilates every hill that comes within its path. He and Newsome, two veteran reliability trial riders and racing motor cyclists, deserve every credit for their fine performances. A. N. Barrett, a heavy rider of a 3½ Rudge Multi, was almost successful, but all the others were doomed to failure, which caused no surprise, as this hill, besides being so exceptionally steep, has a hairpin corner at the foot, and the surface is covered with loose stones. It is not an easy matter to steer a straight or comparatively straight course.



At Llangollen. Scene in the Hand Hotel yard.

The scenery on both sides of the pass is magnificent, and the members were amply repaid for their exertions. Newsome made a second ascent of the hill at our suggestion, keeping up a speed of from 15 to 20 m.p.h., and Sam Wright, feeling that he had so much in hand, attempted to carry a passenger seated on the carrier, but in this he was unsuccessful.

A. D. Arter (3½ three-speed James sc.) almost reached the gate, about ¼ mile from the summit; the three-speed 2¾ Humber and a Rudge Multi got to the gate, but there was a lot more 1 in 4 left.

Immediately the members had had their fill of mountain climbing it commenced to rain, and a ride home in the pouring rain, *viâ* Welshpool, Shrewsbury, and Coleshill, will long be remembered. Who will be the first to take a side-car and passenger up Bwlch-y-Groes (The Pass of the Cross)?

ANGLO-SCOTTISH HILL-CLIMB.

The above event takes place next Saturday, at 2.30 p.m., on Lauton Hill, near Jedburgh. A team of twelve riders nominated by the A.C.U., whose names are given below, will compete against twelve riders of the Edinburgh and District M.C. The results will be decided on time and formula.

The Anglo-Scottish event will be followed by an open hill-climb, and in the evening the English team will be entertained at dinner in Edinburgh by the Edinburgh Club.

SINGLE-CYLINDERS (500 c.c.)

W. F. Newsome (Triumph)	F. W. Barnes (Zenith)
J. H. Slaughter (L.M.C.)	T. Silver (Quadrant)
H. Berwick (New Hudson)	

MULTI-CYLINDERS (1,000 c.c.)

F. W. Barnes (Zenith)	C. W. Jameson (Matchless)
W. E. Cook (A.S.L.)	A. N. Other (——)
H. Reed (Dot)	

SIDECARS (1,000 c.c.)

F. W. Barnes (Zenith)	H. Berwick (New Hudson)

The Scottish team will not be definitely chosen until Saturday morning.

The Fourth Monthly Meeting of the B.M.C.R.C.



The 1,000 c.c. invitation car race. Gordon Watney's Mercedes car winning from C. R. Collier (Matchless) at 80 m.p.h.

THE fourth monthly meeting of the British Motor Cycle Racing Club was quite an interesting affair. The weather was close and rather threatening, and though there were several slight showers there was, fortunately, not enough rain to interfere with the racing.

Event No. 1 was the 500 c.c. invitation car race, open to the winners of the first and second prizes in the 500 c.c. car challenge race, held on May 12th. Distance, 3 laps (8 miles 269 yards). First prize, silver cup. In this and the other similar races, the car and cycle or cycles started about a quarter of a mile from the fork, and kept level with the B.A.R.C. car until the starter (Mr. A. V. Ebblewhite) dropped his flag, and then got away. The two competitors were G. E. Stanley (1 cyl. Singer, 85 × 88 mm., 499 c.c.) and G. C. Pullen (24 h.p. 4 cyl. Cameron, 3⅞in. × 4in., 3,047 c.c., air-cooled). At the start, Stanley got well ahead, but at the end of the second lap the car was leading. Pullen finished 5s. ahead of Stanley. Time, 7m. 22s. = 66.38 m.p.h.

Event No. 2 was the third 5 lap cyclecar handicap. Distance, 13 miles 1,035 yards. Ward (Bedelia) was given 4m. 10s. start of the other two. The A.C. had a boat-shaped racing body sharply pointed fore and aft. Before the races it was seen to climb the test hill on top speed, but during the event the gear, curiously enough, seemed too high for a fast speed. The Bedelia held first place for two laps, but the G.W.K. and the A.C. rapidly overhauled it, and in the third lap it retired, owing to a broken inlet valve. In the fourth lap the G.W.K., which was running in splendid form, had greatly increased its lead, and in the fifth finished first by about a quarter of a mile. Hill on the A.C. lost count of his laps, and covered one too many. Result:

1. J. T. Wood (2 cyl. G.W.K., 86 × 92 mm., 1,070 c.c.)
2. F. Hill (1 cyl. A.C., 95 × 105 mm., 723 c.c.)

Time, 17m. 23s. = 47.89 m.p.h.

The Car Again Wins.

Event 3. The 750 c.c. invitation car race, open to the winners of first and second prizes in the 750 c.c. car challenge race, held on May 12th. Distance, 3 laps (8 miles 269 yards). First prize, silver cup. Printz and Collier easily left the car at the start. At the end of the first lap Collier maintained his lead, the car came second, and Printz stopped through plug trouble. In the last lap the car forged ahead hard by Aeropolis, and won by 250 yards. Result:

1. H. Petit (driving A. Lambie's 22.4 h.p. 4 cyl. Bedford, 95 × 95 mm., 2,694 c.c.)
2. H. A. Collier (2 cyl. Matchless-Jap, 85.5 × 64 mm., 741 c.c.)

Time, 7m. 32⅘s. = 64.9 m.p.h.

Event 4. The 1,000 c.c. invitation car race, open to the winners of the first and second prizes in the car challenge race, held on May 12th. Distance, 3 laps. First prize, silver cup. As in the previous car *versus* cycle races, the motor bicycle got away first, but this time the latter had no chance. The big Mercédès soon got ahead, and increased its lead each lap, winning by about threequarters of a mile. C. R. Collier recently had an accident, the result of which is still, unfortunately, affecting him. Result:

1. F. R. Samson (driving Gordon Watney's 48.6 h.p. 4 cyl. Mercédès, 140 × 150 mm., 9,237 c.c.)
2. C. R. Collier (2 cyl. Matchless-Jap, 90 × 78 mm., 998 c.c.)

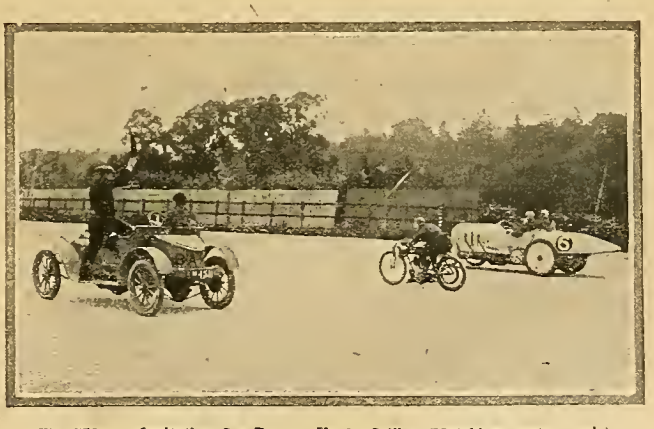
Time, 6m. 33s. = 74.7 m.p.h.

The last event on the programme was the all-comers' hour race, for motor cycles with or without sidecars, the cylinder capacity of which does not exceed 1,000 c.c. Awards: The club's gold medal to the first to finish in Class B; the Alec Ross Cup, kindly presented by Mr. W. H. Elce, winner of the cup in the fifty mile T.T. race held on May 12th, to the first to finish in Class C; silver and bronze medals to the second and third; a silver medal to the first to finish in Class D. (There were no starters in Class D.)

The order in the first lap was: Stanley, Bailey, Woodman, Carter, Aitken, Hunter, and Wallace.

A Good Performance.

Stanley's Singer and Bailey's Douglas both ran magnificently; Woodman, as he passed on the second lap, threw down a spare belt which had come adrift. In the third lap Stanley, Bailey, and Woodman maintained the order they kept throughout the race; Wallace and Hunter dropped behind. Stanley steadily forged ahead, keeping up a speed of over sixty miles an hour. In the 11th lap he passed Bailey, and in the 18th lapped him again. Hunter, after his set back, made a gallant effort to regain lost ground, but the belt coming off three times and petrol feed trouble prevented him from making a star performance. He had two Wakefield oil tins in the sidecar, the contents of which his brother transferred to the oil reservoir by the vigorous appli-



The 750 c.c. Invitation Car Race. H. A. Collier (Matchless motor cycle). R. L. Printz (Bat-Jap), and A. Lambie's 22.4 h.p. Bedford car starting.



Start of the All-comers' Hour Race.

cation of tyre pumps fixed to each. Woodman, who rode splendidly, slowed rather in his 12th lap, but picked up afterwards. Bailey, who made such a fine showing on the Douglas, is an Australian, who has been only six months in England. He rode W. Douglas's competition machine, whose engine buzzed like that of an aeroplane the whole time and never faltered once. Result :

		c.c.	mls.	yds.
1. G. E. Stanley (1 Singer) ...	85×88	... 499	... 60	1,552
2. S. L. Bailey (2 Douglas) ...	61×60	... 350	... 56	755
3. A. Woodman (2 Humber) ...	61×60	... 350	... 53	1,250
G. E. Hunter (2 Zenith sc.)...	90×77.5	... 988	... 16	laps.
W. L. S. Aitkin (1 Rudge) ...	85×88	... 499	... 12	laps.
P. J. Wallace (1 Rudge) ...	85×88	... 499	... 5	laps.
T. A. Carter (1 Rudge) ...	85×88	... 499	... 3	laps.

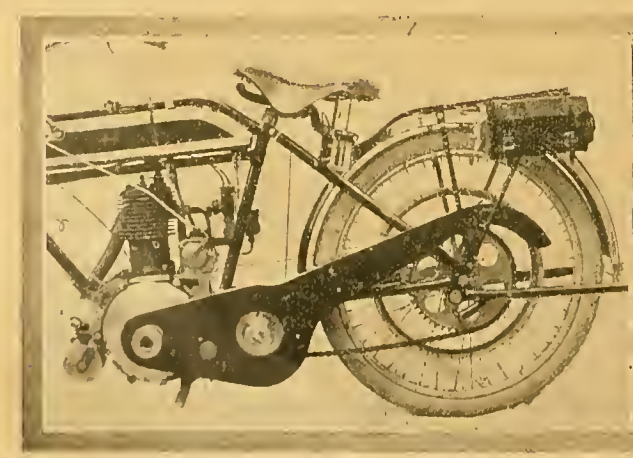
The Rudge team lost two of their best men, Stanhope Spencer having not yet wholly recovered from a bad fall on the track which happened a fortnight or so ago, while Elce was suffering from a chill. The meeting was fairly well attended, but the events were none too well supported. The car v. cycle races would have been interesting had the competing vehicles been more evenly matched, but the only one of these races to afford any real excitement was Event No. 3.

The next B.M.C.R.C. meeting is on Saturday, July 20th.

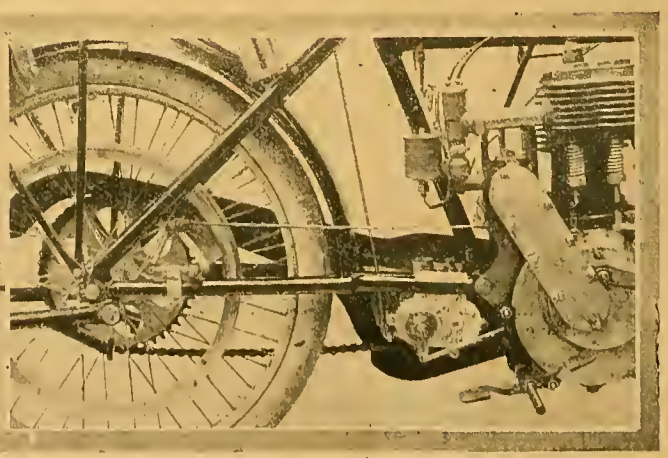
Enquiries are reaching us for pneumatic helmets for racing motor cyclists. Will the maker kindly communicate with the editor?

A New Counter-shaft Two-speed Gear.

WE are able to describe a new two-speed gear to be known as the G.H., and manufactured by Jardine's at Deering Street, Nottingham. The gear is of the counter-shaft type with gear wheels constantly in mesh, the change being effected by means of dog clutches. A special shock absorbing clutch of the multi-plate type with alternate plates of bronze and steel is fitted to the engine-shaft; from this the drive is taken by chain to a friction clutch of the three-plate type fitted with cork inserts on the gearshaft. This clutch is operated by a pedal on the right hand side, the dogs being engaged by a lever mounted on a quadrant on the top tube. All running parts are made of the finest nickel steel mounted on Hoffmann ball bearings, and the boxes of a special aluminium alloy. The fixing of the gear box is so designed as to be easily lined up in almost any modern motor cycle frame. Our illustrations show the gear attached to a 3½ h.p. Wulfruna. This particular gear has, we are told, run 1,400 miles, and there are as yet no signs of wear. Every part is carefully made to jigs, and consequently perfect interchangeability is ensured, and at the present time a special new plant is being laid down for the purpose of turning out the gear in large quantities. A few of the gears are already on the road and giving great satisfaction, and deliveries are being made steadily. On the road the gear has proved itself sturdy and sweet in action, while the two combined clutches enable a standing start to be made with ease and comfort even on a sharp upward incline.



Chain side of the Wulfruna motor cycle to which the G. H. gear is fitted.

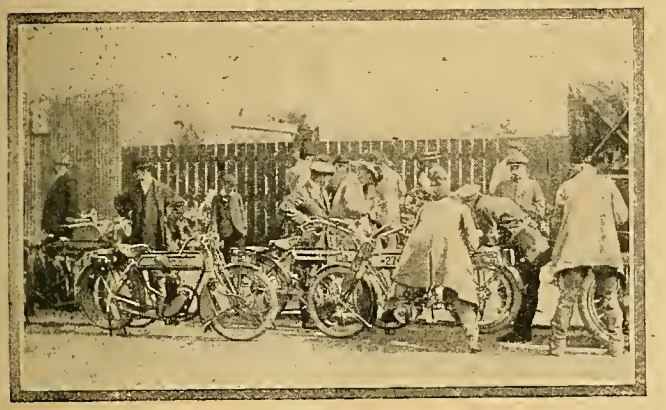


G. H. countershaft two-speed gear showing operating pedal.

DUBLIN v. BELFAST.

M.C.U.I. Dublin Centre secures a Narrow Win.

AFTER being allowed to drop for a couple of years, the inter-city reliability trial between the Belfast and Dublin centres of the Motor Cycle Union was held on Saturday last, under the auspices of the Motor Cycle Union of Ireland. The Dubliners started sixteen riders, of whom three had sidecars, to Belfast's seven. The conditions were of the customary kind, a scheduled pace of twenty miles being fixed, with penalties for variations of more than a minute either way at the open and secret controls. There were four of the latter, mostly in the southern portion of the journey, and the open controls were at Dundalk and the finish. As in former trials between the two centres, non-stop runs were aimed at. The roads were wet for the greater part of the journey to Dundalk, but thereafter the conditions were very agreeable. All of the twenty-three starters duly arrived at the finish at Drumcondra Bridge, but as two of the Dubliners and one Belfast man omitted to return their checking cards the result we give below is provisional on their returns not affecting it.



Start of the Motor Cycle Union of Ireland Inter Centre Run held last Saturday.

The Dublin team won by three points, thanks to the energy of the Dublin and District Motor Cycle Club in whipping up a strong team to represent the capital. The best six riders on each side counted, and the scores were as follow :

DUBLIN TEAM.

	Marks.
J. Browne (3½ New Hudson)	*100
G. Roche (3½ Rover)	99
T. D. Rollins (3½ Rover)	98
P. J. Brady (3½ Rudge)	98
C. P. Kirk (3½ Triumph)	97
M. J. Doyle (3½ Humber)	97
	589

BELFAST TEAM.

W. Burney (2¾ Enfield)	99
J. "Newell" (3½ Ariel)	99
W. J. Chambers (3½ B.S.A.)	98
H. Boyle (3½ Triumph)	97
J. S. Garrett (3½ Ariel)	97
J. Stewart (3½ Triumph)	96
	586

*Maximum.

The other marks were : J. L. Walshe (6 Enfield sc.), 95; J. D. Weir (7 Indian), 94; E. W. Armstrong (3½ Rudge sc.), 92; W. J. Towell (3½ Rudge), 92; P. Hurst (3½ Rudge), 90; F. A. Cowan (3½ Triumph), 89; W. Beattie (3½ Rudge), 76; and T. E. Green, 65. Wallin, Cooms, and Kettle made no return

CLUB NEWS.

Western District M.C. (London).

The reliability trial to Daventry on the 2nd inst. was won by R. F. Addey (Triumph), the only rider to make a non-stop run.

Sarum and District M.C.C.

The first hill-climb was held at Bishopstone on the 29th ult. Francis (2¾ Humber) made fastest time in the lightweight class and N. Edwards (3½ Premier) in the heavyweight.

Carlyle (Chelsea) C. and M.C.C.

The first club reliability trial will take place on June 16th. The course will be a circular one, starting from East Horsley, and will have to be covered four times. No speedometers or watches will be allowed, and marks will be lost for being faster or slower than the schedule time. Entries must be sent to hon. sec. not later than June 10th.

Derby and District M.C.C.

The club intend making every effort to keep possession of *The Motor Cycle* Cup, and is sending a strong team to Daventry. The team will be as follows: E. V. Clarke (3½ Bradbury), A. B. Bennett (6 Brough), H. E. Sewell (8 J.A.P. sc.), H. Baker (3½ Triumph), E. Russell (3½ Russell), and A. Ainsworth (3½ Rudge), captain.

Reserves: E. Lee (3½ Rudge), W. H. Orme (3½ Rudge), and W. E. Murden (3½ Singer).

Cumberland County M.C.C.

The annual reliability trial was held at Whitsuntide. The start was from Carlisle at 1.30 p.m., and the route *via* Crawford, Stirling, Perth, Brecon, Stonehaven, Aberdeen, Arbroath, Dundee, Perth, Edinburgh, Hawick, to Carlisle. The nights were both spent at Perth, and lunch was taken at Aberdeen. There was little mechanical trouble, but some of the competitors suffered from punctures. The distance covered was 487 miles. Non-stop runs were made by Hilton Robinson (B.S.A.) and W. J. Moffat (Singer).

Chesterfield and District M.C.C.

A successful knock-out hill-climb was held at Amber on the 29th ult. H. C. Newman (3½ h.p. Ivy-Precision) won two very close races by inches. J. King (2½ h.p. Premier), a one-armed rider, rode with great skill. H. Eardley (3½ h.p. Premier) was second to Newman in the T.T. class.

Cork and District M.C.C.

The two hundred mile reliability trial for the Gibson Cup, Cork to Abbeyleix and back, was held on Whit-Monday. Result : 1, M. J. Fitzgerald (3½ Bradbury); 2, W. J. O'Callaghan (3½ Zenith); 3, H. P. Dobbin (3½ Triumph).

Purley and District M.C.C.

The 240 miles trial on Whit-Monday resulted in a win for H. B. Willoughby (Rudge) with a total error of 21¼ minutes, E. V. Walters (P. and M.) being second with an error of 26¾ minutes, and V. Tomkins (Rover) third, 28¾ minutes. The winner holds a silver challenge cup (the President's gift) for one year, and receives a silver medal, a second silver medal (presented by Mr. H. S. Brett) being taken by the second man.

Edinburgh and District M.C.

The club held their sixth annual reliability trial on Victoria Day, when the good entry of twenty-nine was received. The entry included motor cycles, sidecars, and cars.

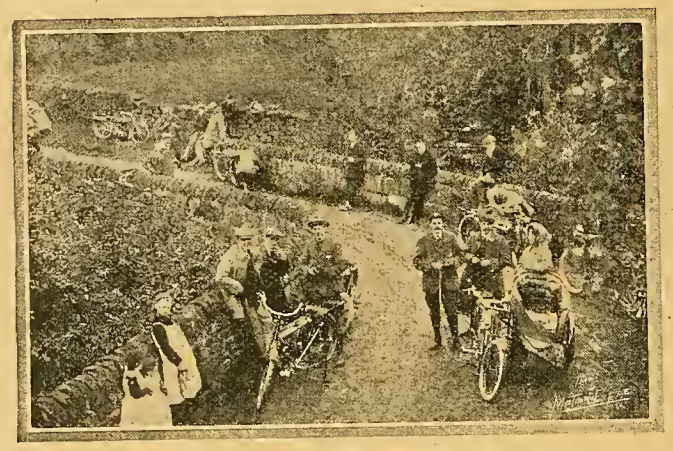
The route was a severe one, going from Edinburgh to Peebles, Innerleithen, Moffat, Dumfries, Wanlockhead, Biggar, and back to Edinburgh.

The official results are as follows: Full marks—A. H. Alexander (2¾ Douglas), R. H. Mouat (3½ Rudge), A. B. Lindsay (3½ Triumph), J. Forrest (6 Matchless), G. Morgan (3½ Bradbury), W. M. Fraser (3½ Triumph), A. U. R. Downie (3½ Ariel), Miss Downie (Forward), A. Kerr (3½ Triumph), T. L. Aitken (Clyno and sc.), J. M. Boyack (Clyno and sc.), J. R. Alexander, jun. (Indian and sc.), E. G. Thomson (16 Standard), and J. Steel (20 Ford).

Club News.—

Harrogate and District M.C.C.

Although the weather was very threatening, the rain held off until the annual members' hill-climb last Saturday for the Pilcher Trophy had been finished. Results:



Scene at the start of the Harrogate and District M.C.C. Annual Members' Hill-climb.

Class I.—Lightweights.

	Time. m. s.	Fig. of merit.
F. Mackay (2¼ Singer)	0 42	... 212

Class II.—Standard single-cylinders.

C. A. Nettleton (3½ New Hudson) ...	0 47⅕	... 258

Fastest time, H. W. Fortune (3½ Brown), 41⅗s.

Class IV.—Sidecars, etc.

C. A. Nettleton (3½ New Hudson) ...	1 10⅘	... 237

Fastest time, H. W. Fortune (3½ Brown), 56⅖s.

Class V.—T.T. singles, on time.

T. C. Atkinson (3½ T.T. Triumph) ... ... 36⅖s.

The class winners having to re-run for the trophy and make an improvement on their previous times, resulted in C. A. Nettleton becoming the holder for the second year in succession. W. B. Atkinson eventually made the fastest time of the day.

Mersey M.C.

A paperchase will be held on the 8th inst., meeting at 3 p.m. at the Shrewsbury Arms. A tortoise race was held on Saturday, June 1st. The machines were divided into two classes, two wheels and three wheels. Lowest gear allowed 5 to 1. Clutches not allowed to be used, and all with speed gears to use top gear. The course was about a quarter of a mile, and quite a good entry was received. First in two-wheeled class, F. C. Jones on 3½ h.p. T.T. Ariel. First in three-wheeled class, A. A. Jaffa on 7 h.p. Indian and sidecar.

Cardiff M.C.

The annual twelve hours' reliability trial was successfully held on Whit-Monday, when sixteen entrants started on the trial over the following route: Cardiff to Newport, Abergavenny, Crickhowell (check), Bwlch Hill (check), Llangorse, Talgarth, Builth, Rhayader (check), Llangurig to Aberystwyth (check), and return by Devil's Bridge (check), Llyffryn Castell to Rhayader, Builth, Erwood, Llyswen Hill (check), and home to Cardiff, a distance of, as near as possible, 230 miles, which had to be completed in twelve hours. The following successfully covered the route in the twelve hours and kept to schedule time at the controls: G. H. Smith (8 J.A.P. sc.), E. Chapman (6 Zenith sc.), J. C. Moore (3½ Rudge), C. R. Pratt (3½ B.S.A.), C. E. M. Peaty (3½ Matchless), W. H. Bowen (3½ Triumph), and H. Wessendorf (3½ Premier). The following completed the course in schedule time, but failed on one of the two test hills: A. H. Morgan (3½ Triumph) and D. Robertson (3½ Triumph). The following completed the course, but were late or early at one or more of the controls: E. Courtney (twin Kerry sc.), J. Wallace (8 Zenith sc.), and G. Sanday (3½ Ivy-Precision), who also failed on one of the test hills.

Torbay and District M.C.C.

Halsanger Hill, on the edge of Dartmoor, and about two-thirds of a mile long, formed an almost ideal hill for last Saturday's climb. It is nearly straight for the whole distance, with only one cross-road. Three classes were run and good times were made, fastest for day being A. C. Arden's 3½ h.p. Premier. Results:

500 c.c. Class.

	M. s.
1. A. C. Arden (3½ Premier)	1 6⅕
2. E. J. Hancock (3½ Premier)	1 8⅖

Lightweights to 345 c.c.

1. A. Powell (2¾ Enfield)	1 18⅕
2. W. Harding (2¾ Douglas)	1 18⅗

Passenger, Unlimited.

1. Birdsall (3¾ twin Premier and sc.) ...	2 31⅖

Scarborough and District M.C.C.

The following are the results of the flying kilometre speed trials, held on the 27th ult.:

Class 1.—Lightweights.

	Time.	m.p.h
H. Moon (2¾ New Hudson)	54s.	... 41.4

Class 6.—Singles and sidecars.

C. Swinney (3½ Triumph)	64⅕s.	... 35.

Class 7.—Twins and sidecars or cyclecars.

G. Armstrong (8 Gordon)	76⅖s.	... 29.3

Class 2.—Standard touring singles.

D. Bradbury (3½ Norton)	38⅘s.	... 57.5

Class 3.—T.T. singles, etc.

R. Flint (3½ Norton)	38s.	... 58.8

All-comers' Class.

H. D. Shaw (8 Zenith)	52⅕s.	... 69.75

A flexibility hill-climb was held on Wednesday, the 29th ult., on Foxholes Hill, on a straight hill about threequarters of a mile. Result:

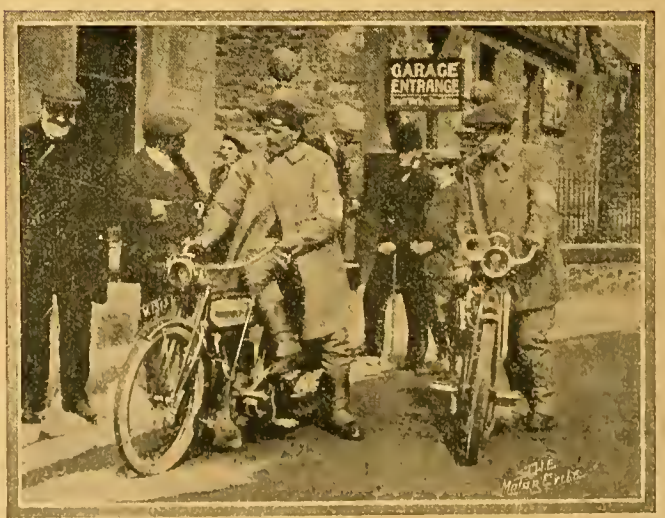
1. G. Armstrong (Gordon cyclecar), fast time 2m., slow 7m. 49⅗s., difference 5m. 49⅗s.

2. D. Bradbury (3½ Norton), fast time 46⅖s., slow time 4m. 3⅗s., difference 3m. 17⅕s.

Afterwards a knock-out handicap was run between H. Lofthouse (2 Humber) and J. W. F. Tranmer (2¾ Humber). The latter won the monthly medal by two yards.

Wishaw and District M. and M.C.C.

A reliability trial of 120 miles was held on Saturday last. Wm. Morton (2¾ twin Humber), George Brown (3½ Triumph), John Adams (3½ Zenith), W. Marshall (3 Clarendon), L. MacLean (3½ Triumph), and D. McCartney (2¾ Royal Enfield), all arrived at controls near schedule time, and it has been left to Mr. W. H. Cox, of the A.A., to make the awards.



Wishaw and District M.C.C. 120 Miles Reliability Trial. G. Brown (Triumph) and W. Marshall (3 h.p. Arne) about to leave the Peebles control for the last stretch of forty miles to Carlew, the finish.

Club News.—



E. Goult, hon. sec., starting on his 3½ h.p. Rudge in the Doncaster and District M.C.C. reliability trial.

Derby and District M.C.C.

The hundred miles reliability trial, which is a fixture with the club for the Whitsuntide holiday, drew a good entry, and was run off in fine weather. The course was one of three circuits, the route being laid over some difficult country in the Ashbourne district. Punctures accounted for most stops; a stop of any description, beyond a breather after each circuit, disqualifying. Results:

1. E. Russell (3½ h.p. Russell). Haskard-Mitcham Challenge Cup.
2. W. H. Orme (Rudge).
3. G. Hardy (3½ h.p. Humber).

Dublin and District M.C.C.

The following are the placings and awards in the Dublin to Lisburn and back reliability trial of the Dublin and District Motor Cycle Club which was held on Whit-Monday:

GOLD MEDALS.

	Marks.
J. Browne (3½ New Hudson)	100
J. P. Quill (2¾ Douglas)	100
G. Roche (3½ Rover)	100

SILVER MEDALS.

E. W. Armstrong (3½ Rudge sc.), T. E. Greene (3½ Rudge), T. D. Rollins (3½ Rover sc.), C. Magennis (3½ Rudge), P. J. Brady (3½ Rudge), H. T. Carroll (3½ Rex), T. Woods (3½ Premier), F. J. Walker (3½ Rudge), J. D. Weir (7 Indian sc.), C. E. Murphy (3½ Triumph), P. Beattie (3½ Rudge), T. A. Ireland (7 Indian sc.), R. Walsh (4 Calthorpe), J. Healy (3½ Rudge sc.), F. Keogh (3½ Triumph), J. H. Taylor (3½ Rudge), T. J. Dunphy (7 Indian), V. Barton (3½ Triumph sc.), O. G. Price (3½ Rudge sc.), W. G. Greene (2½ A.J.S.), and R. Lowry (3½ Rover).

The first three riders were declared joint holders of the cup. Last year the cup was won by T. Woods, of Newbridge, and C. E. Murphy, of Cootehill, but neither of these riders figured so prominently this year.

Motor Cycle Competitions in New Zealand.

THE Otago Motor Cycle Club held a series of competitions at Easter, which included a club run to Naseby (ninety-five miles), a reliability trial for sidecars to Naseby, and hill-climbs and speed tests *en route*.

A start was made from the railway station in Dunedin at 7.30 a.m. The weather was not as good as could be desired for holiday touring, but as the day grew it improved. The roads were in beautiful condition, but some riders experienced difficulties in getting up the steep grades after riding through the various watercourses. The course was an ideal one for a test, being almost one continual series of hills. Only five competitors started in the sidecar trial, as follows: G. Thorn (3½ h.p. New Hudson), E. Howlison (4½ h.p. Norton), W. Gibb (7 h.p. Indian), W. Cameron (Bradbury), and D. Brown (Bradbury).

When twenty miles out, the sidecar became detached from the New Hudson, so Thorn discarded it and rode solo. Cameron and Gibb both had the unique experience of capsizing over a bank in their efforts to climb one of the numerous long winding hills, but Howlison and Brown reported a good run and came through without loss of marks. These two riders took part in a further test, and Howlison won.

On arrival at the Brother's Hill (sixty miles), a fast hill-climb and a slow hill-climb were held.

FAST HILL-CLIMB.—Meek (Triumph), 25s., beat McDougall (Triumph), 3s., by about 4s.

SLOW HILL-CLIMB.—McDougall (Triumph) beat Crolly (Bradbury).

Next morning the speed events were held on a straight piece of road near Naseby, and some excellent performances were made. Results:

TWO MILE HANDICAP. Run singly against time.

	Time. m. s.	Result. m. s.
1. Meek (3½ Triumph), handicap 40s. ...	3 8 ...	2 28
2. Ansell (3½ Triumph), 15s.	2 52 ...	2 37
3. Lawrie (3½ T.T. Rudge), 10s.	2 48 ...	2 38

FOUR MILE HANDICAP.

	m. s.	m. s.
1. Pridham (3½ Humber), handicap 90s. ...	6 48 ...	5 18
2. Fancourt (3½ T.T. Triumph), 30s. ...	6 13 ...	5 43
3. McDougall (3½ Triumph), minus 5s. ...	5 42 ...	5 47
3. Lawrie (3½ T.T. Rudge), 5s. ...	5 52 ...	5 47

FLYING MILE RECORD (for Silver Cup presented by Mr. J. McKenzie).—1, McDougall (3½ Triumph), 56⅖s.; 2, Maddox (3½ T.T. Triumph), 1m. 1⅗s.; 3, Fancourt (3½ T.T. Triumph), 1m. 2⅞s.; 4, Lawrie (3½ T.T. Rudge), 1m. 3⅖s.



Chesterfield and District M.C.C. hill-climb at Amber Hill, Kelstedge. J. D. Mitchell (T.T. Rover) left, and J. J. Kelly (T.T. Bradbury) on right starting in their heat, which was won by Mitchell.

Questions & Replies



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

London to Newquay, Cornwall.

Will you please tell me which is the best route from Westminster to Newquay in Cornwall, with distance?—A.F.

Your best plan would be to go straight through London, down Kensington High Road, and through Hammersmith Broadway, Chiswick, Brentford, Hounslow, Staines, Bagshot, Blackwater, Hook, Basingstoke, Whitchurch, Andover, Salisbury, Wilton, Shaftesbury, Sherborne, Yeovil, Crewkerne, Chard, Honiton, Exeter, Okehampton, Launceston, Camelford, Wadebridge, St. Columb, to Newquay. The distance is approximately 260 miles.

Transmission and Power for Sidecar.

(1.) Do you consider a chain-driven motor cycle less expensive than a belt-driven one? (2.) Is it a disadvantage to have the crank case a fixture to the frame? (3.) Would a 3½ h.p. chain-driven two-speed take sidecar or would you recommend a 5 h.p. A.J.S.? (4.) Is the 5 h.p. much more costly to run—about how much per mile approximately?—G.E.S.A.

(1.) There is little to choose, but probably chain drive is the more economical. (2.) No, we do not think so. (3.) For sidecar work the 5 h.p. would be better. (4.) A 5 h.p. would cost about 1¾d. per mile to run against 1¼d. for a 3½ h.p. with sidecar.

Loss of Pace but not of Power.

My 1912 two-speed machine has now run 2,300 miles. Machine has run 500 miles since last overhaul. It has now become unaccountably slow, and to run at 20-25 m.p.h. requires half throttle or more. Half a spring added to a.o.i.v. has improved it a very little. Compression in both cylinders is good. Jet and petrol pipe clear. Power is as good as ever on hills. (1.) Is it possible for the magneto to have retarded itself, and if so, would that cause slow running without much loss of power? (2.) What throttle would be used when travelling 25 m.p.h.?—G.B.S.

(1.) The magneto timing may be too late as you suggest, and we should advise you to check this. It would account for the trouble and be likely to cause overheating. A weak exhaust valve spring also may cause falling off in power. (2.) The position of the throttle entirely depends upon the condition of the roads. A heavy road requires more opening.

Care of Magneto.

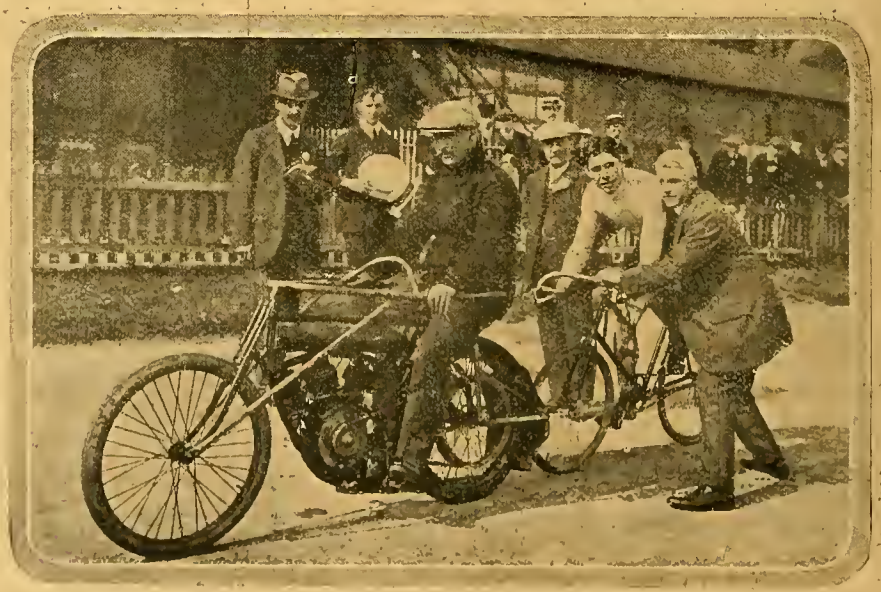
I have just purchased a 4 h.p. single-cylinder machine with Bosch magneto. The machine runs and climbs well for about sixteen miles, sometimes less, when it starts missing until finally it stops, and, on inspection, I find magneto is giving no spark at plug. I then take out the terminal with high tension wire attached, and find a little piece of carbon with spring attached. I pull this out longer and clean carbon pencil, and off it goes again, and I cannot tell why this makes it go. If I could I should like to know what to do another time.—H.S.

Evidently the collector ring is dirty. This should be cleaned by wrapping a piece of clean rag round the end of a penholder, soaking it in petrol, and applying it to the collector ring, turning the magneto round meanwhile. What you did was to increase the tension of the spring and keep the carbon brush more firmly pressed against the brass of the collector ring. What you ought to do is to buy a copy of "Motor Cycles and How to Manage Them" (obtainable from these offices, price 1s. 2d., post free), where you will see the working of a magneto carefully explained. Probably the trouble is that the magneto wants cleaning, and occasionally oil gets on the collector ring and prevents it sparking.

An Auxiliary Air Inlet.

I have a 1911 2¼ h.p. single with automatic carburetter. The machine runs perfectly in every way, but it seems to me that an extra air inlet would economise and be an advantage. (1.) Would an extra air inlet in the inlet pipe interfere with the working of the carburetter? Of course I should only use it on a long run when going fast. (2.) The magneto is fixed. Does this give the spark at the right moment for all speeds? The makers claim that it gives the necessary advance by a hotter spark at speed, which is not quite clear to me.—E.A.C.

(1.) An extra air inlet might make a difference. It would not interfere with the working of the carburetter, because if closed the machine would work exactly as if it were not there, provided, of course, there was no leakage of air. (2.) There is a good deal in what the makers say, but, personally, we think you would do better with a handle-bar controlled magneto. Both these can be controlled by Bowden wires.



Leon Meredith, motor-paced by Cordingley, who broke the five miles record for the New Brighton track on Whit-Monday.

THE . .

ZENITH-GRADUA

had a busy time this Whitsuntide and kept well to the front —as usual

PROOF of RELIABILITY - 100% Success

M.C.C. London — Edinburgh Run. 7 Zeniths entered for single journey and secured

SEVEN GOLD MEDALS

3 Zeniths entered for return journey, all finished and obtained

SPECIAL GOLD MEDALS.

Inter 'Varsity Hill-Climb.

Class III. Zenith **FIRST** on Time, and **SECOND** on Formula, also **FASTEST TIME** of the day.

Class V. Zenith **FIRST** on Time.

Class VI. Zenith **FIRST** on Time. (Every competitor in this event was an amateur.)

Birmingham M.C.C. Trial— Land's End and Back.

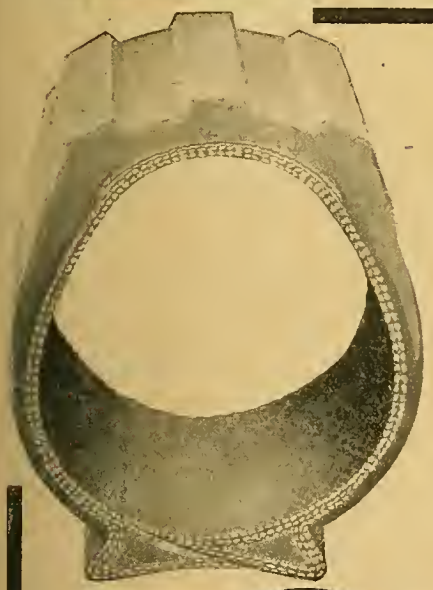
Three Zeniths completed the arduous journey.

Whit-Monday Racing at Brooklands.

Long Handicap. Zenith **WON EASILY.** (Speed—65¼ m.p.h.)

ZENITH MOTORS, LIMITED, WEYBRIDGE.

(Contractors to War Office.)



Hold on!

Hold on to the road by fitting Gaulois Triple Stripe Tyres. They grip the road and do not slip—besides having all the splendid wearing qualities that have made the name of "Gaulois" famous.

Gaulois beaded, "Triple Stripe," 26 x 2½.

Covers: Grey, 39/6. - - White Tread, 42/9.

Inner Tubes (Red), 10/5.

Remember: "Gaulois on, Troubles off."

Gaulois Tyres

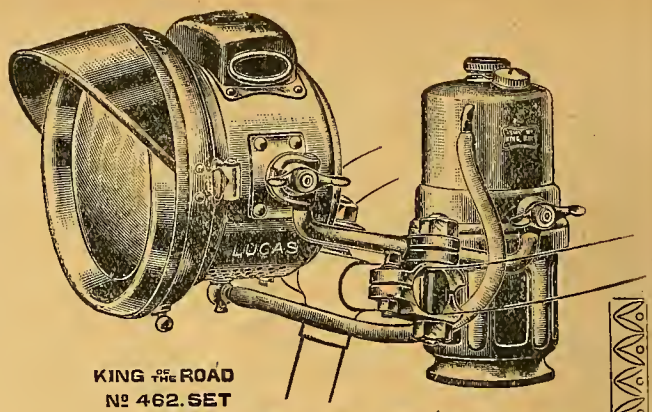
(GOAL-WAH)

GAULOIS TYRES (1909) LTD., 6, Bath Street, City Road, London, E.C.

Telegrams: "Goalwase, London." Telephone: 7275 London Wall.

AS USUAL!

THE OVERWHELMING SUPERIORITY OF LUCAS LAMPS WAS ONCE AGAIN DEMONSTRATED IN THE M.C.C. LONDON-EDINBURGH TRIAL. WHEN MORE



KING OF THE ROAD
No 462. SET

LUCAS "KING OF THE ROAD" LAMPS

WERE FITTED THAN ANY OTHER FOUR MAKES PUT TOGETHER.

OF THE TOTAL OF 180 LAMPS FITTED TO SOLO MOUNTS AND SIDECAR COMBINATIONS, NO FEWER THAN 74 WERE LUCAS, FOUR OTHER MAKES DIVIDED 71 BETWEEN THEM, WHILE SEVEN MAKES CLAIMED THE REMAINING 35.

ASK ANY RIDER OF LONG EXPERIENCE AND GOOD JUDGMENT ABOUT LAMPS—INVARIABLY HIS ADVICE WILL BE "GET A LUCAS."

Send for descriptive Catalog of Lucas Motor-Cyclealities, post free from Dept. F.

JOSEPH LUCAS LTD., BIRMINGHAM.

DEPOTS: London, Manchester, Dublin, Newcastle-on-Tyne.

WE MAKE LIGHT OF OUR LABOUR.

MORE SUCCESSES.

BROOKLANDS, MAY 27th, 1912,

Both Motor Cycle Races were Won on

WAKEFIELD CASTROL (Regd.)

The Eighth Short M tor Cycle Handicap W. Dewar (Triumph)..... **FIRST**

The Seventh Long Motor Cycle Handicap R. Weatherilt (Zenith)..... **FIRST**

FRENCH AUTOMOBILE CLUB MEETING AT LE MANS: **ENGLISH RIDERS USING WAKEFIELD CASTROL (Regd.) swept the board.** Messrs. Rex Mundy, V. Taylor, H. G. Dixon, and J. Cocker, who won all the events between them, exclusively used CASTROL.

C. C. WAKEFIELD & Co.,
27, Cannon Street, London, E.C.

C.D.C.



Sound British workmanship throughout.

No blarney, boys,

the magneto you can trust is the one that's made under the old flag—the

SIMMS

Wherever used it justifies the highest expectations of efficiency and durability. You could not get better if you tried—therefore specify 'Simms' when ordering.

The SIMMS MAGNETO COMPANY, Limited,
Welbeck Works, Kimberley Rd., Willesden Lane, Kilburn, LONDON, N.W.

'Phone 3843 Paddington.
'Grams—" Expansible, London."
COVENTRY—St. Mary St.; PARIS—12, Rue de Courcelles; NEW YORK, U.S.A.—1780 Broadway.



LONDON-EDINBURGH RUN.

H. C. Mills (3½ h.p. Premier) rode into the Doncaster control with a punctured back tyre. Above he is seen repairing it.

Cleaning Magnets.

I shall be very much obliged if you will inform me as to the following: The magnets of the magneto on my 3½ h.p. machine have become rusty. Will this in time affect the working of the magneto? How should I treat the magnets to clean off the rust and prevent it recurring? Would emery paper do and then follow with a coat of Velure?—D. H. Lowes.

The fact that the magnets have become rusty will not affect the machine, but we should advise you to clean off the rust with emery paper, without taking the magneto down if possible, and then black over the magnets with some preparation. Velure would do, but perhaps a dull black would do better.

London to Clacton-on-Sea.

Will you kindly inform me the best route from Cricklewood to Clacton-on-Sea, avoiding as much of London as possible?—J.G.L.

Your best route would be as follows: Cricklewood, *via* Childs Hill Lane on to Hampstead Heath, from there straight on to the Great North Road at East Finchley. As soon as you strike the Great North Road turn left, take the first turning on the right, and go straight on down Muswell Hill, follow the tram-lines with overhead wires till you reach those with central standards; here turn right for about 100 yards and then turn left, where there is a little green on the right, keep straight on till you meet the main road to Ware. Follow this road for about 100 yards to the left, turn right past Tottenham Station by the East London waterworks, keeping straight on till you reach Woodford. Go through Woodford and Epping. At Epping turn to the right and you will find yourself on the Chelmsford Road. Follow this through to Colchester, and you reach Clacton by the way of St. Osyth.

Deposit Paid on Sale of Machine.

I have a machine which I offered for sale, and a friend informed me verbally he would buy it. A few days after this, I asked him when he would take delivery, and he replied immediately after Easter, so as to give him an opportunity to sell his old machine. I was not satisfied with this, and requested a small sum on account so as to make sale a certainty, and he promptly paid me £5 on account, for which I gave him a receipt. Of course, beforehand, he had satisfied himself that the machine was a bargain and suited his purpose. I have now approached him for balance of payment so that I can hand over machine, but he desires to cancel the arrangement and demands return of £5 paid to me, only on the grounds that he cannot sell his old machine. I refuse to do this, as I have naturally lost other opportunities of disposing of machine elsewhere. (1.) Can I legally force him to pay balance and take delivery of machine? (2.) Is he obliged to forfeit the £5 so that I can sell machine at reduced price?—J.S.

Our legal adviser writes as follows: "'J.S.' can proceed against the purchaser for payment of the balance, and he need not deliver up the machine till payment is made. With regard to forfeiting the £5 paid as deposit, the purchaser would certainly lose this if the correspondent has to resell, and if the £5 deposit is not sufficient to cover the difference between the price he ultimately gets and the price he sold the machine for originally, he can recover the difference, provided, of course, that in the resale he gets the market value of the machine. I am, of course, assuming that the purchaser would not be able to prove that the sale was subject to the disposal of the old machine. Apparently there is nothing in writing, and if any such arrangements were made, the purchaser should have seen that it was incorporated in the receipt he obtained for the £5 on account."

Redditch to Uxbridge.

Would you kindly send me the route from Redditch to Uxbridge, near London, with distances between towns, also an alternative way back again?—F.P.

We should advise you to go from Redditch to Uxbridge *via* Alcester, Stratford-on-Avon, Shipston-on-Stour, Chipping Norton, Woodstock, Islip Wheatley, then join the London-Oxford Road at Wheatley and go through Aston Rowant, Stokenchurch, High Wycombe, Beaconsfield and Gerrard's Cross, to Uxbridge. The distance would be approximately ninety-six miles. An alternative way back would be *via* Amesbury, Aylesbury, Bicester, Banbury, Stratford-on-Avon, Alcester, to Redditch. The distance would be approximately eighty-six miles.

EXPERIENCES WANTED.

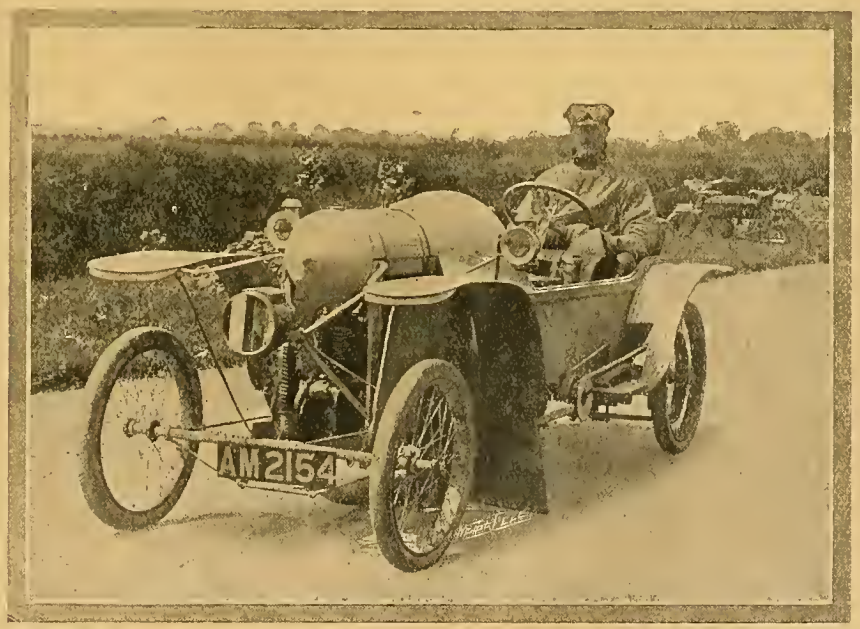
Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"A.O.H." (Brixton). 1912 5-6 h.p. Clyno.

"H.G.G." (Portsmouth). 5-6 h.p. two-speed F.N. and sidecar.

"A.P." (Romford). 3½ h.p. chain-driven 1912 Bradbury, also 5 h.p. chain-driven A.J.S., both with sidecar.

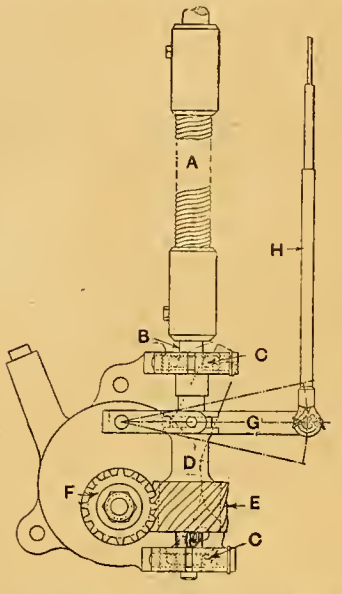
"J.G.S." (Manchester). 2½ h.p. Levis, particularly as regards wearing qualities, hill-climbing, and consumption.



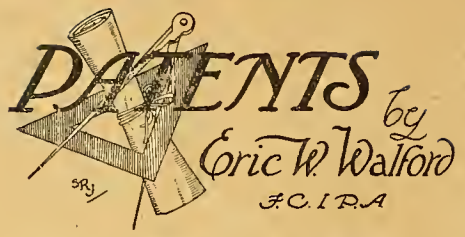
A racy-looking Sabella cyclecar, owned by K. F. Dunsterville, of Tynemouth Castle. This is one of the first of this type of car to be seen in the North of England.

Magneto Driving Mechanism.

This construction is so designed that the spark always takes place at the instant of maximum flow of current, the timing of the spark in the cylinder being variable by moving the transmission-shaft

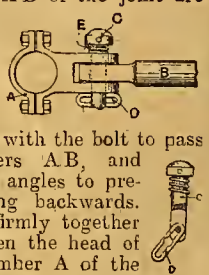


of the magneto in relation to the engine-shaft from which it is driven. In the construction illustrated, a flexible shaft A is employed, which is secured to a spindle B running in ball bearings C. On a squared part of the spindle B is a sliding sleeve D, carrying a worm wheel E driven by the wheel F on the engine half-time shaft. Engaging a groove on the sleeve D is a pivoted lever G provided with an operating rod H. It will be seen that by operation of this rod the sleeve D will be caused to slide on the squared part of the spindle B. At the same time the engagement of the wheels F and E will cause the latter to rotate the spindle D and shaft A, thus advancing or retarding the magneto drive in relation to the engine. —Société Rêne Gillet et Cie., No. 9,948. 1911.



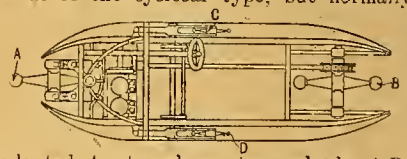
A Sidecar Joint.

The two members A B of the joint are secured together by a bolt C, which passes through them and is provided with a link-shaped member D, which can be turned longitudinally with the bolt to pass through the members A B, and then turned on right angles to prevent the bolt moving backwards. The parts are held firmly together by a spring E between the head of the bolt and the member A of the joint.—A. Pilkington. No. 9,442, 1911.

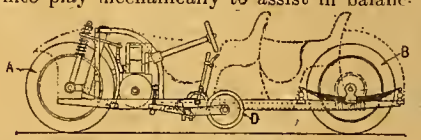


A Two-wheeled Cyclecar.

The accompanying elevation and plan illustrate a construction of vehicle somewhat of the cyclecar type, but normally



adapted to travel on two wheels A B, supplementary wheels C D being brought into play mechanically to assist in balancing the vehicle at low speeds.—E. C. F. Otto and W. K. L. Dickson, No. 6,705. 1911.



THE MOTOR CYCLE
T.T. and Summer Number
THURSDAY,
June 27th, 1912.

Garages.

The Colonnade Motor Cycle Exchange inform us that they have moved into larger and better premises at 56a, Seaside Road, Eastbourne, behind the Riviera Restaurant.

An Australian Record.

We are informed that W. E. Peverill, riding a machine fitted with a 3½-4 h.p. Fafnir engine, has just succeeded in establishing a Melbourne to Brisbane record. He experienced no trouble of any kind.

Our Bookshelf.

"Manxland: What to See and Where to Stay," by W. Keig, proprietor of the Sefton Hotel, Douglas. This little booklet describes many interesting excursions which can be made in the charming Isle of Man, so favourably disposed towards the sporting side of the motor cycle pastime.

Lightweights in Western Canada.

Henry S. Rungay, an Englishman residing in Newdale, Manitoba, says he is more than pleased with his Motosacoche, which will climb any hill. The trail or path in some of the ravines is less than a foot wide in many places, but his lightweight Motosacoche always gets there.

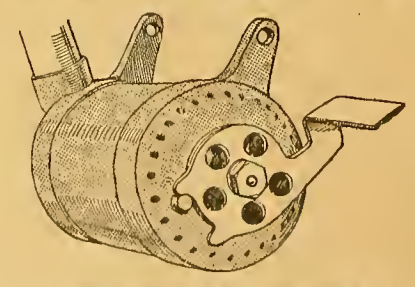
Sealed Oil Tins.

Messrs. the Stern Sonneborn Oil Co., Ltd., Royal London House, Finsbury Square, E.C., have now put on the market a new patent sealed tin containing one pint of Sternol motor oil A for air-cooled engines. The tin is fitted with two loops, so that it can be conveniently strapped on to the machine.



Handle-bar Control of Low Gear.

Mr. S. W. Philpott, manager for Messrs. Henry Whitlock and Co., 40, Hope Street, Liverpool, informs us that he has designed and fitted a handle-bar ratchet attachment for 1912 Humber two-speed geared machines by which the low gear lever can be held permanently in the "on" position. This enables the low gear to be used for a walking mount, if desired, instead of starting the engine by the handle. The fitment is supplied ready for fitting to Humber machines with all instructions.



A silencer cut-out is now being fitted to the 2¾ h.p. twin Humber. Above we illustrate the design adopted.

A New Appointment.

We learn that Mr. A. P. Moeller, late secretary of the Amateur Camping Club, has joined the staff of Messrs. Robertson's Motor Agency, 157, Great Portland Street, W.

Successful Accessories.

The Lycett trophy winner, T. Pollock, who rode a 3½ h.p. single-geared James, used a new pattern Lyso belt and Dunlop tyres on his machine. A. D. Arter, who was second on his three-speed chain driven James sidecar, used Rom tyres.

Rex Reliability.

For the seventh time in London-Edinburgh Runs, W. A. Jacobs won a gold medal, while both Le Grand and White have never failed to qualify for awards—always on Rex machines. The three above named rode 6 h.p. Rex sidettes this year, "covering in all about 900 miles without the slightest trouble," to quote Mr. Jacobs's own words.

Another Metropolitan District Map.

Another map of routes round London has just been published by Messrs. G. W. Bacon and Co., 127, Strand, W.C. This map covers a far larger area than the R.A.C. map which was published about a fortnight ago, and is especially suitable for showing routes in the districts round the Metropolis, but is not so rich in detail, nor does it exist for quite the same object as the former. Ordinary macadam country roads are shown green: 'bus routes, 'tram routes, and roads in which there are both 'buses and trams are shown by distinctive marks. Distances from place to place are also clearly indicated.

Lycett's 'LYSO' -the leading Rubber Belt.

Reliability and Comfort

are the paramount features of the "LYSO" Belt and "LYCO" Seat—features exclusively their own—and users everywhere are endorsing the marked excellence of these two products of the "Good LYCETT Lines."

—Of the "LYSO" Belt, we here have some remarkable records recently achieved at Home and Abroad—note them. On May 11th, 1912, at

BROOKLANDS, 50 Miles (500 cc.) Senior T.T. Race; W. H. Elce 1st and won the "Ross" Cup on a Rudge.

PORTMARNOCK SPEED TRIALS, 4 Miles Scratch Race; T. Green 1st, F. J. Walker 2nd, J. Healy 3rd. 20 Miles Handicap—Price 1st, T. Green 2nd, F. J. Walker 3rd, J. Healy 4th, all on Rudge's.

JOHANNESBURG-PRETORIA-JOHANNESBURG—The Derby of South Africa. Rudge 1st and fastest Time, Record for course, on a Rudge.

CUMBERLAND M.C.C. KNOCK-OUT HILL CLIMB, WARMEL FELL. Vernon Taylor 1st, on a Rudge.

BRADFORD M.C.C. OPEN HILL CLIMB, LEATHLEY BANK, May 18th, 1912, Zenith machines here won 6 firsts, 1 second and won the "Eric Myers" Trophy. They made 1st, 2nd, 3rd, 4th fastest time of the day and also the record time for the hill climb. Also Rudge machines obtained 3 firsts, 1 second, and 1 third. All above were fitted with "Lyso" Belts. How's that for Reliability?

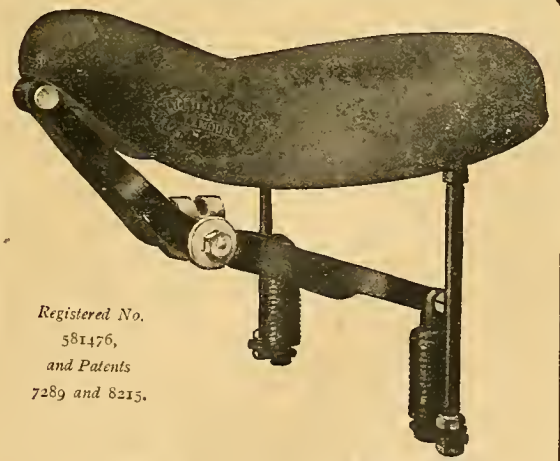
—Of the Seat, Mr. Cyril M. Webster writes: "I have tried most of the best makes but consider yours ranks ahead of any other. The absence of vibration and road jar is really marvellous, one might be riding on air."

—See YOUR mount is fitted with this world-famous Belt and Seat and enjoy the advantages these perfect fitments ensure.

—Obtainable of all Agents or direct—Write for copy of "The Saddle Book."

LYCETT'S

"The Saddlery," Birmingham.



Registered No. 581476, and Patents 7289 and 8215.

LYCETT'S "LYCO" PAN SEAT.

Admittedly the World's really perfect Motor-cycle Seat.

R.H.S.

The All "J.A.P."

MOTORS. British.

The Finest Motor which the World produced for RELIABILITY and SPEED.

LONDON TO EDINBURGH RUN.

25 riders of J.A.P. Engines gained Gold Medals.
11 finishing the double journey.

BIRMINGHAM-LAND'S END-BIRMINGHAM.

4 riders of J.A.P. Engines finished the double journey.

LONDON-COVENTRY TRIAL RESULTS.

Members Class. Silver Cup—H. Beaumont on Matchless J.A.P.
Silver Medal—E. G. Westacott on Zenith J.A.P.

Open Class. Silver Cups—

C. R. Collier, on Matchless J.A.P. R. E. Guest, on Matchless J.A.P.
H. A. Collier, on Matchless J.A.P. J. Tassell, on Matchless J.A.P.
also gaining the Team Cup and Silver Medals.

Silver Cups—
H. F. Morgan, on Morgan J.A.P. F. S. Wheatland, on Matchless J.A.P.

Silver Medals—
S. Tessier on Bat J.A.P. A. S. Phillips on V.S. J.A.P.
W. Oldman, on Bat J.A.P. F. J. Willmott on Morgan J.A.P.

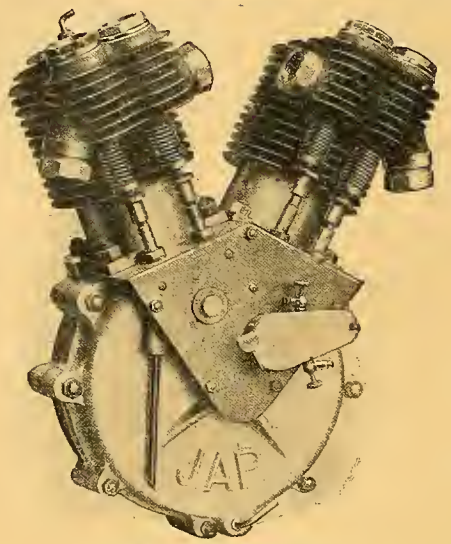
SYDNEY M.C.C., N.S.W.

Reliability Trial from Sydney to Orange.

W. Allen on Zenith J.A.P. tied for 1st Place.

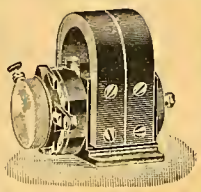
BROOKLANDS.

Seventh Long Motor Cycle Handicap. J.A.P. 1st—P. Weatherilt on Zenith.



J.A.P. 8 h.p. Engine.

J. A. PRESTWICH & Co., Northumberland Park, Tottenham, London, N.
Telephone—1936 (2 lines).



THE PERFECT SPARK
is that given by the

'U.H.' MAGNETO

The ignition apparatus that never fails. Reliable under all conditions. Admittedly the most efficient of all magnetos.

S. WOLF & CO.,
115, Southwark Street, London, S.E.
Telegrams—"Widerstand, London."
Telephone—
5172 Central.

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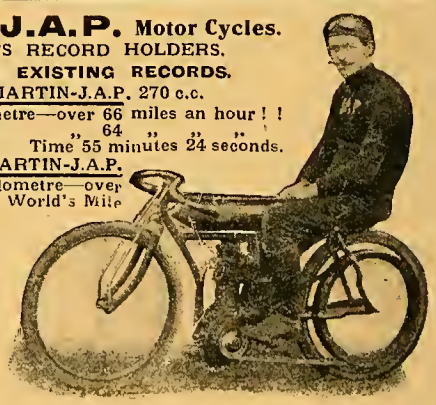
MARTIN-J.A.P. Motor Cycles.
THE WORLD'S RECORD HOLDERS.
BROOKLANDS EXISTING RECORDS.

CLASS A. 1¾ h.p. MARTIN-J.A.P. 270 c.c.
World's Kilometre—over 66 miles an hour ! !
" Mile " 64 " " "
" 50 Miles Time 55 minutes 24 seconds.

CLASS B. 2¾ h.p. MARTIN-J.A.P.
345 c.c. World's Kilometre—over 68 miles an hour ! ! World's Mile over 65 miles an hr.

Latest Successes: Tunbridge Wells Sports, Whit-Monday, May 27, 1912. — Martin Motor Cycles swept the board, winning every event. Still unbeaten.

H. MARTIN & CO.,
Works: Leslie Grove, East Croydon, Surrey



Books for Motor Cyclists

Motor Cycles and How to Manage Them.
The standard Handbook of the Motor Cycle. Fifteenth edition, revised and enlarged, now on sale. Price 1/- net. By Post 1/3.

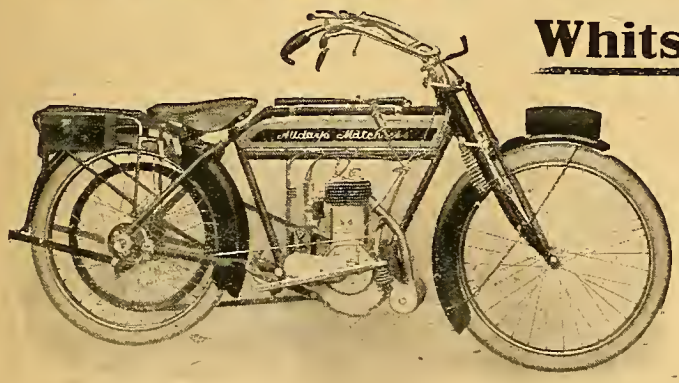
Hints and Tips for Motor Cyclists.
Full of useful "wrinkles" with regard to the care and management of motor cycles. 3rd edition. Price 1/- net. By Post 1/2.

The Motor Cycle Route Book.
Contains best routes for the whole of the British Isles, 45 maps and speed limits. Price 1/6 net. By Post 1/9.

Obtainable (with remittance) from ILIFFE & SONS LTD., 20, Tudor Street, LONDON, E.C., also from all Booksellers.

ALLDAYS

MATCHLESS MOTOR CYCLES.



Whitsuntide Successes.

M.C.C. TRIAL.

LONDON TO EDINBURGH AND BACK.

3 Gold Medals.

TWO ENTERED.

BIRMINGHAM M.C.C. TRIAL.

BIRMINGHAM TO LAND'S END AND BACK.

Gold Medal.

ONE ENTERED.

ALLDAYS & ONIONS PNEUMATIC ENGINEERING Co., Ltd., BIRMINGHAM.

London Offices & Showrooms—58, Holborn Viaduct, E.C.
Liverpool Depot—53, Renshaw Street, Established 1650.

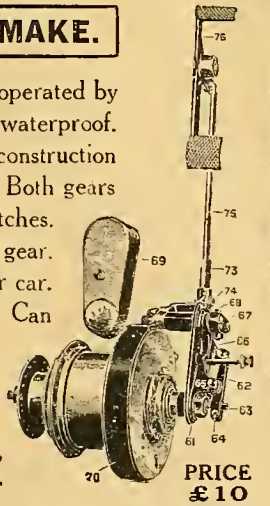
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An exceptionally popular and thoroughly successful

TWO-SPEED HUB

"MILLENNIUM" MAKE.

IT is centrally designed—operated by one foot lever—dust and waterproof. Its simple, straightforward construction renders mistakes impossible. Both gears controlled by friction clutches. Unimpaired efficiency on high gear. Makes control equal to motor car. Essential to sidecar machines. Can be fitted to almost any machine.



WRITE FOR CATALOGUE.

LAKE & ELLIOTT, LTD.,
Albion Works, Braintree, ESSEX.
London Showroom: 14a, Great Marlborough Street, W.

PRICE £10 ready to fit.

THE EASIEST WAY

FROM

LONDON TO EDINBURGH AND BACK

IS THE

N.L.G.

WAY.

ONE entered. ONE finished.

A. V. Deacock on a 6 h.p. 3-speed.

N.L.G. qualifies for a special GOLD MEDAL.

The whole distance of 800 miles was covered without the use of a tool!!

NORTH LONDON GARAGE,
Corsica Street, Highbury, N.
Phone: 1520 North. 'Grams': "Tractarian, London.

In answering these advertisements it is desirable to mention "The Motor Cycle."

HOBART MOTOR CYCLES

LONDON TO EDINBURGH WHITSUN RELIABILITY TRIAL.

MR. A. WEBSTER, riding one of our latest 2½ H.P. "HANDY HOBART" MODELS, illustrated below, was awarded **SPECIAL GOLD MEDAL** for accomplishing the double journey within schedule time.

PRICE £38. Representing the Highest Value in up-to-date Motor Cycles.

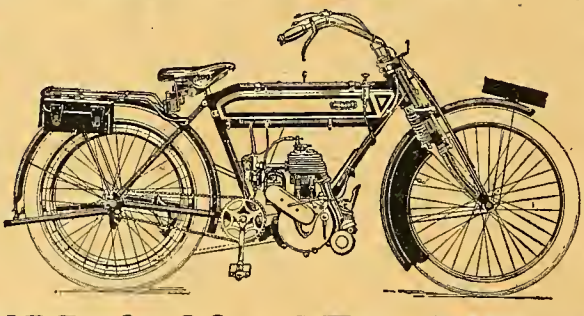
Exceptionally Powerful and Effective.

For Hill Climbing it is unsurpassed.

Most Comfortable on long journeys. Very low riding position.

WRITE FOR LATEST CATALOGUES

London Agents—Morris, Russell & Co., 6, Gt. Eastern Street, E.C.



THREE OTHER DISTINCT MODELS.

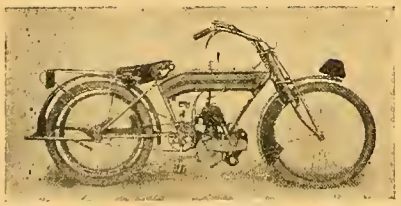
2½ H.P. LADY'S with Free Engine, and 3-speed Gear.

3½ H.P. STANDARD TOURIST, and 4 H.P. TWIN-CYLINDER for Sidecar work.

HOBART, BIRD & CO., LTD. (DEPT. H 22.) COVENTRY.

GOLD MEDAL GRANDEX

(Incorporating the Grandex—N.S.U. 2-Speed Gear and Free Engine.)



3 MODELS:—

2½ h.p. Lightweight, Single Speed	33	gns.
2-Speed	40	„
Sturmey-Archer 3-Speed	43	„
3¾ h.p. Touriste or T.T. Single Speed	39	„
2-Speed	46	„
Sturmey-Archer 3-Speed	50	„
4¼ h.p. Big Sidecar Instrument Single Speed	44	„
2-Speed	52	„
Sturmey-Archer 3-Speed	55	„

Perfect Specifications:

Precision Engines.
Druid Spring Forks.
Hutchinson or Palmer Tyres.
Lyso Belts and Saddles.
B. & B. or A.M.A.C. Carburetter.
Grandex N.S.U. 2-Speed Gears.
Grandex "Last Drop" Tanks.

SPECIAL NOTICE.

£5 discount will be allowed on first retail order received by us from an unrepresented distric. Agents ! ! Secure agency.

Cash, Extended Terms, and Exchanges.

To order only. 5-6 Twins, £52 nett.

"GRANDEX MOTORS" FOR THE MULTITUDE. 86, GRAY'S INN ROAD, W.C.

J. B. JACQUEMIN BROS.'
COLLAPSIBLE "CHLOROPHYLLE" EYE PROTECTORS.
(AITCHISON'S PATENT.) REGD.

WORLD'S RECORD.

Mr. W. J. CLARKE writes—"I used a pair of your Goggles during my recent Six Days' **World's Record Motor Cycle Ride** of 3,000 miles. I must say the Goggles were a great help to me and acted splendidly throughout; you well deserve to sell a large quantity."



PRICE from 4/9 CHLOROPHYLLE LENSES, 3/6 PLAIN (Postage 2d.)
WRITE—CHAPPELL & CO., 11, Hatton Garden, LONDON.

SIDECAR MODELS.

Can give prompt deliveries of

"CLYNO." "BAT." "ENFIELD." "INDIAN."

Upwards of 100 second-hand Bargains.

Note the following and write for complete list.

1911 3½ h.p. F.E.	**TRIUMPH**	£43	0	0
1911 3½ h.p. T.T.	**TRIUMPH**	£42	0	0
1909 3½ h.p. F.E.	**TRIUMPH**	£35	0	0
1909 3½ h.p.	**TRIUMPH**	£31	0	0
1911 3½ h.p.	**PREMIER**	£36	0	0
1911 3½ h.p. Two-Speed	**HUMBER**	£40	0	0
1910 3½ h.p. Two-Speed	**HUMBER**	£35	0	0
1911 3½ h.p.	**KERRY**	£35	0	0
1910 2¾ h.p. Twin	**ENFIELD**	£22	10	0
1910 2¾ h.p. Twin	**MOTO-REVE**	£22	10	0

All machines guaranteed.

ROBERT BEVAN, Castle Street, CARDIFF.

MUST BE SOLD.

We are still worrying you to send for that list, which has now been revised, and let us have your orders for anything that there is to suit you. We have told you for the last two months that the garage is too small for the enormous stocks that we bought at the Show. What with A.C.'s, Morgan Runabouts, and other three and four-wheelers, not to mention Clyno and sidecars, Matchless, Jap-Bat, P. & M., Scott, Rudge, Triumph, Zenith, Humber, Premier, and other things that we are Agents for, and are having in every week, therefore we are compelled to make a move on the Second-hand Motor Cycles. We are out to lose money to clear them out; but naturally as little as possible. What we want you to do is to get on the move and study the prices in latest list, when we are sure you will be a buyer. We are compelled to sell, as we cannot get a bigger garage in Morecambe or district. We have the stuff coming in, and must have somewhere to put it. All we can do is to ask you to buy it from us. If we cannot sell it at our price, we will try and do so at yours. In the last week or two we have sold some Magneto Machines at from £10 to £12, which should have really been £17 to £20; but what's the use of keeping them here, filling up the place, and hindering good new business. We have also sold some good lightweight machines for a few pounds that should have been at least a dozen. Many other machines we have sold at £5 or £6 a time.

With us, bhoys, you can buy on cash or deferred terms, and a deposit of from £3 to £13 will purchase a machine. The balance can be paid in weekly or monthly instalments. Terms may be arranged to suit all pockets.

The Sunny Jims, of course, have twigged it and we have been swarmed with the bhoys on Saturday afternoons and local half-holidays; but still there is plenty left for you. Of course, with the enormous stocks that we have, it takes a lot of shifting. If you intend having a motor cycle, don't waste any more time. Speculate in a postcard, and ask for our Special Sale List. If we send you a list, and it does not do you any good, it won't do you any harm. The sight of it will startle you, and you will be wondering why you did not get one before. If you have had an older list get the **latest** with last reduction.

There is a splendid mixed stock left, and you need not hesitate to buy now. Everything that we send out is sent on our usual terms: Cash with order. If the machine is not as per specification, you are at liberty to return **within three days** and have your money back **in full.** At all times we are pleased to entertain exchanging Motor Cycles for other second-hand machines. Whatever you do, you cannot get wrong with us. We are out to seek your trade and make room.

We have been advertising for a long time now, giving you advice, and the fact that we were last week enabled to tell you that our turnover for the last six months (winter months) had increased by £5,000 over the six months in the summer half-year preceding, shows that we treat our clients in a straightforward manner, otherwise they would not be interested in dealing with us. Remember that there are many firms in the trade, but only one that will **return you your money as above.**

If you want anything in the way of Accessories we are sure you might go further and fare worse than drop us a postcard for our Accessories List. The prices are low and the quality good, and as we are gradually declining this branch of the business, we are interested in disposing of the stuff. Some things are cleared out, but there still seems to be plenty left. If you want anything, write. Don't leave it until to-morrow. Get your postcard sent at once, only, when you send the postcard, don't forget your name and address, and ask for the lists you want.

There is little use in calling yourself, say, John Smith, and not put the name of the street on, as there are scores of John Smiths in every town in Great Britain. Give us your full address, and there will be no difficulty.

We might also mention that we are on the telephone, and there is nothing like being sharp about it. Get on the 'phone and ask us what we have to sell, and you will probably buy it straight away. If you happen to be in the trade, whether in a large or small way, it will do you good, as we have plenty to sell, and will give you a trade discount off everything that we have to move. We don't work for nothing, neither do we expect anyone else to do so therefore, please let us have your enquiries.

From **£10** down will purchase a new Motor Cycle. We are in a position to deliver any machine on the market on these terms. The balance of the money we are prepared to allow you to pay in instalments spread over twelve months, so that you do not feel the paying for the machine, whilst you are at liberty to ride it and have the full enjoyment from same. Our system is the fairest on the market, whilst our selection of high-class models excels all others. Our deliveries are the quickest, and there is no reason why you should be without a machine. Please get on the jump and let us hear from you. If you do not want a new machine, the same terms will apply to a Second-hand one. The deposit will vary according to the class of machine. Remember the address, and write for our lists at once.

Until next week, bhoys, good-bye. If you have not seen the Canaries, it is time you came down to the sea.

Hitchen's, Ltd., Morecambe.

Wires: "Motor, Morecambe." Telephone: 112, Morecambe.

MOTOR CYCLES BY EASY PAYMENTS

Whiteleys are prepared to supply ANY MAKE OF MOTOR CYCLE or CYCLE-CAR on the EASIEST OF EASY TERMS

Interest Charge from 2 per cent.

A TEN POUND NOTE

secures delivery, and you can pay the balance afterwards by twelve monthly instalments.

WHY WAIT 6 WEEKS WHEN WE HAVE IN STOCK

Premiers	Alcyons	Bats
Bradburys	New Hudsons	Zeniths
Triumphs	Calthorpes	Swifts
Indians	James	Clynos
Douglas	Singers	P. & M.s.
Rex-Japs	Rudges	Duo-Cars

Carriage Paid to any Station in the United Kingdom.

WHITELEYS

——QUEEN'S ROAD, LONDON, W.——

Never throw a LODGE PLUG away, however old.



The materials of which they are made are so good that they are always worth repairing.

Guaranteed for one year.

They last for many years.

PRICE **4/-** EACH.

They fit all Motor Cycles. (including Triumphs).

When ordering, specify "Motor Cycle type."

Packed in red boxes. (The green boxes contain the car type.)

Sole Manufacturers—

LODGE BROS. & Co., Dept. E, New St. **BIRMINGHAM.**

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII.
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION IX
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

MATCHLESS ADVANTAGES



are by us offered to every Motor Cycle Buyer: The largest selection in the trade, the lowest prices, immediate prompt delivery from stock of newest 1912 models, and reliable guaranteed second-hand machines overhauled and put in most satisfactory repair. Call and see the great show of over 300 machines.

ASK FOR TO-DAY'S BARGAIN LIST, WHICH INCLUDES—

5504.	3½ h.p. 1910 **PREMIER**, Mabon. free engine	£24	0
5506.	2¾ h.p. 1911 Twin **CAMPION**	£27	10
5507.	2¾ h.p. 1911 2-speed **DOUGLAS** ..	£37	10
5519.	3½ h.p. 1910 Standard **TRIUMPH**	£33	0
5524.	5-6 h.p. 1912 4-cylinder **F.N.** Clutch Model	£48	0
5530.	3½ h.p. 1911 2-speed **HUMBER** and sidecar	£45	0
5532.	6 h.p. 1912 **REX** Sidette	£60	0
5533.	5 h.p. 1911 Free-engine **INDIAN**	£39	10
5536.	6 h.p. 1911 2-speed **BAT** and sidecar	£60	0
5540.	8 h.p. 1911 2 speed **MATCHLESS** and sidecar	£57	10
5542.	3½ h.p. **QUADRANT**	£17	10
5543.	3½ h.p. 1911 3-sp. Lady's **HOBART**	£35	0
5547.	6 h.p. 1911 **ZENITH GRADUA** and sidecar	£63	0
5555.	3½ h.p. 1910 Free-engine **TRIUMPH**	£38	10
5558.	3½ h.p. 1911 2-speed **BRADBURY**	£42	0
5559.	3½ h.p. 1908 **TRIUMPH**	£29	0
5560.	2½ h.p. 1912 Standard **PREMIER**		
5562.	2¾ h.p. 1909 **DOUGLAS**, Roc 2-sp.	£29	0
5544.	3½ h.p. 1910 **ZENITH GRADUA** ..	£35	0
5565.	3½ h.p. 1911 F.E. **TRIUMPH**	£45	0
5036.	2½ h.p. 1911 **MOTOSACOCHE**	£27	0
5009.	3½ h.p. 1911 T.T. **BRADBURY** ..	£32	0
5055.	3½ h.p. 1911 **L.M.C.**, variable gear	£35	0
5287.	2¾ h.p. 1911 **DOUGLAS**.....	£28	0
5006.	3½ h.p. 1910 T.T. **TRIUMPH**	£34	0
5066.	3½ h.p. 1911 **BRADBURY**, Mabon cl.	£37	10
5332.	5-6 h.p. 1911 4-cyl. **F.N.**	£33	10
5358.	2¾ h.p. 1912 2-speed **ENFIELD** ..	£47	0
4420.	3½ h.p. 1911 Free Engine **PREMIER**	£38	10
5441.	3½ h.p. 1911 **BRADBURY**	£35	0
5468.	3½ h.p. 1911 **BRADBURY**	£35	0
5327.	7 h.p. 1911 2-speed **REX DE LUXE**	£45	0
5384.	3½ h.p. 1910 Standard **TRIUMPH**	£33	10
5285.	2 h.p. 1910 **MOTO-REVE**	£20	0
4863.	3½ h.p. 1911 **CHATER-J.A.P.**	£32	0
4871.	3½ h.p. 1911 **BAT-J.A.P.**	£32	10
5420.	2¾ h.p. 1911 2-speed **ENFIELD** ..	£40	0
5424.	3½ h.p. 1912 F.E. **BRADBURY** ..	£48	10
5306.	3½ h.p. 1910 2-speed **P. & M.**	£42	0
5460.	2½ h.p. 1910 2-speed **F.N.**	£27	10
5493.	3½ h.p. 1911 2-speed **BRADBURY**	£42	0
5471.	3½ h.p. 1911 F.E. **BRADBURY** ..	£38	0
5293.	2¾ h.p. 1911 **ENFIELD**	£40	0
4865.	2½ h.p. 1911 **HANDY HOBART** ..	£25	0
5500.	3½ h.p. 1911 **P. & M.**	£50	0
4957.	8 h.p. 1910 **BAT-J.A.P.**	£35	0
4701.	2¾ h.p. 1910 **N.S.U.**	£18	0
4607.	3½ h.p. 1911 **KERRY-ABINGDON**	30 Gns.	
5290.	5-6 h.p. 4-cyl. **F.N.**	£33	10
4393.	3½ h.p. 1911 T.T. **PEUGEOT**	£27	10
4425.	3½ h.p. 1911 F.E. **PREMIER**	£37	10
4146.	3 h.p. **N.S.U.**	£15	0
4226.	3½ h.p. **MIDGET BICAR**	£20	0
4331.	1½ h.p. 1909 **MOTOSACOCHE**	£16	10
4631.	3½ h.p. 1909 **CHATER-J.A.P.**	£22	0
4784.	3½ h.p. 1911 T.T. **ARIEL**	£28	10
5333.	2 h.p. 1909 **MOTO-REVE**	£21	0
5253.	3½ h.p. 1908 Twin **PEUGEOT**	£18	0
5448.	3½ h.p. 1911 Cone Clutch **REX** ..	£35	0

WAUCHOPE'S

9, SHOE LANE, FLEET STREET, LONDON, E.C.

'Phone: Holborn, 5777.
Wires: "Opilicer, London."



NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. ooo, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

NEW 1912 Motor Cycles in stock, for immediate delivery:

TWO 3½h.p. Humbers, standard and 2-speed gears; £47/10 and £52/10.

THREE 3½h.p. B.S.A.'s, standard, free engine, and 2-speed gears; £50, £56/10, and £60 respectively.

ONE Triumph, standard; £48/15.

ONE Royal Enfield, 2¾h.p., 2-speed; 50 guineas.

ONE 6h.p. Royal Enfield Sidecar Combination; £84.

THESE we can offer for immediate delivery, being absolutely in stock, but of course being subject to being sold on reply.—Write, wire, or telephone for further particulars, catalogues, or booklets, to Turvey and Co., The Motor House of the North, Sunderland. Tel.: No. 626. [X955

1912 Scott, perfect order, small mileage; nearest £60 gets it.—Walton, 67, Grave Rd., W. Hartlepool. [X654

3½h.p. Minerva, spring forks, h.b.c., adjustable pulley; £9/10.—Particulars, Dawson, Cleatlam, Winston, Darlington. [X99

HUMBER Lightweight, late 1911, spare cover, tube, belt, 300 miles, as new; £29/10.—Hall, Woodhorn Rd., Ashington, Northumberland. [0441

TRIUMPH, 1910 model, Millennium 2-speed hub, has taken sidecar about Lakes, done 6,000 miles; 38 guineas.—Woodhouse, Hostel, Sedberg. [X904

1912 T.T. Roadster Triumph, handle-bar magneto control, in stock, £50; 1912 2¾h.p. Calcott, £30; exchanges arranged.—Nixon, Brampton, Cumberland. [X784

1910 Enfield, engine just overhauled by makers, new mudguard, carrier, pulley, splendid condition, running perfectly; bargain. £21.—Park, Abbey Town. [X877

1909 P. and M., £32; 1911 4h.p. 2-speed Quadrant, like new, £38; 1911 3½h.p. Premier, £35; 1911 7h.p. free engine Rex, £33.—Walker's, Fishburn, Ferryhill. [0134

TRIUMPH, 1910, F.E., Cowey, Autoclipse hump, horn, spare valves, new heavy Kempshall back, Clincher front, excellent condition; £38.—Dr. Muirhead, North Shields. [0608

6h.p. Twin Antoine, almost new, many refinements, good sidecar machine; photo sent; £25, or exchange 3½h.p. solo machine, cash adjustment for 1912 model.—Porthouse, John St., Maryport. [X795

TRIUMPHS, Humbers, B.S.A., Royal Enfield motor cycles, lightweights, 2 speeds, free engines; write, wire, or 'phone for immediate deliveries.—Turvey and Co., The Motor House, Sunderland. Tel.: No. 626. [0061

LADY'S 2h.p. Minerva, Chater-Lea frame, in splendid running order; £12/10, or exchange gent's higher powered machine, cash adjustment.—Linfoot, Ramsgate Forge, Stockton-on-Tees. [0550

The Halifax Motor Exchange

Largest Rex Dealers,
16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams, "Perfection."

£3 to £5 DOWN and 5/- weekly secures prompt despatch of

2¾ h.p. **BAT,** spring frame	£12 10
Twin **REX,** spring forks	£16 10
3 h.p. **QUADRANT**	£10 10
2¾ h.p. **KERRY**	£10 10
3 h.p. **HUMBER,** chain drive	£8 10
3½ h.p. light, low **REX,** h.b. control	£12 10
2¾ h.p. **DE DION**	£10 10
2½ h.p. **J.A.P.,** spring fork	£8 10
3½ h.p. **M.M.C.,** torpedo tank	£10 10

£7 deposit and 10/- weekly secures—

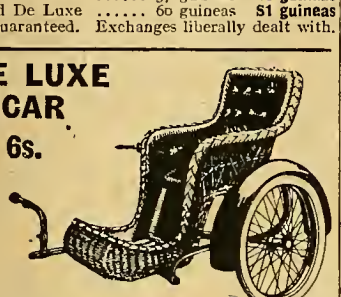
2¾ h.p. Mag. **MINERVA,** chain drive	£16 10
3 h.p. Magneto **TRIUMPH**	£23 10
3½ h.p. Magneto **REX**	£19 19
Twin **MOTO-REVE**	£19 19
2½ h.p. **REX** Magneto Lightweight	£16 10

BRAND NEW 1911 REXES.

	Makers' price.	Ours.
3½ h.p. Rex Tourist	43 guineas	**34 guineas**
3½ h.p. Free-engine	48 guineas	**39 guineas**
3½ h.p. 2-speed De Luxe	57 guineas	**46 guineas**
5 h.p. 2-speed De Luxe	60 guineas	**51 guineas**

All new and guaranteed. Exchanges liberally dealt with.

1912 DE LUXE SIDECAR £6 6s.



"Exchange," with Continental motor cycle tyre	£5 5 0
"De Luxe," with best tyre, apron, footmat	£6 6 0
Ditto, with reversible child's seat	£7 0 0
Ditto, with best coach-built body	£7 12 6

Improved Quick Detachable Joints, cranked extra strong back axle and spindle, tip-up body, and caged ball races to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.
Discount to trade. Exchanges entertained.

GUARANTEED IN RUNNING ORDER.

1912 3½ h.p. standard **BRADBURY,** NEW	£48 0
1912 Twin **REX** Sidette, NEW	£75 0
1912 Two speed **REX JUNIOR DE LUXE**	£45 0
1911 3½ h.p. 2-speed **HUMBER**	£37 10
SCOTT 2-speed, Aug., 1910	£37 10
1910 3½ h.p. 2-speed **CENTAUR**	£32 10
1911 3½ h.p. **REX,** clutch model, as new	£34 10
1911 3½ h.p. 2-speed **REX,** only done 200 miles..	42 Gns
1910 7 h.p. Twin **REX.** HOT STUFF	£37 10
1910 5 h.p. **REX,** very fast. Special machine ..	£29 10
2¾ h.p. Magneto **MOTO-REVE,** Druids	£19 19
1910 3½ h.p. Tourist Trophy **REX**	£27 10
1911 3½ h.p. 2-speed **N.S.U.,** smart and good	£35 0
1908 3½ h.p. Magneto **REX,** spring forks	£19 19
3½ h.p. light, low **REX**	£12 10
3 h.p. **QUADRANT,** low frame	£10 10
2¾ h.p. **KERRY,** 26in. wheels	£10 10
6 h.p. Twin **KERRY** Tricar	£14 10
1909 5½ h.p. 2-speed Twin **REX DE LUXE**	£36 10

Easy Payments at Special Rates.

SUNDRIES.

Stewart Speedometers, front or rear drive	£2 15
Mabon Free-engine Clutch, fits Triumph	35/-
Monocar Frame, 4-wheeler, with axle and tyres ..	£6 10
Backrest, to fit XL All saddle	7/6
Triumph Pattern Horns, new	4/6
New Cane Sidecar Body	17/6
Brooks' Broo Saddle	9/6
New Large Lycett's MOTOR SADDLE	9/6
Wicker Sidecar Body	10/6
Cane Sidecar Body, new	17/6
New Sidecar Aprons, with studs	7/6
Plated Rex Pattern Handle-bars	6/6
New 20 amp. Fuller Accumulator	11/-
New Harrison's Backrest .. usual price 12/6, ours	9/6
Myers' Motor Cycle Stand	3/-

MOTOR BICYCLES FOR SALE.

1911¼. 2-speed Enfield, excellent condition, P. and H. lamp, Dunlop studded tyres; £34; letters only.—Birch, 25, Park Rd., Wigan. [0585

WE have in stock 1912 6h.p. Rex de Luxe models, also 1912 3½h.p. 2-speed B.S.A.—Cairns and Co., Grimshaw St. Motor Exchange, Preston. [X971

LIGHTWEIGHT Wolf, spring forks and seat, new condition, accessories; £14, or useful part exchange.—180, Smithdown Rd., Liverpool. [X776

£22.—1910 3½h.p. Rex, good, reliable machine, very low, Bosch magneto, B. and B., h.b.c.; a bargain.—A. B. Nutter, 227, Keighley Rd., Colne. [0439

ROYAL Enfield, 2¾h.p., 1911, splendid condition, for sale, or exchange for 5-6h.p. twin sidecar machine.—Fox, 2, Lawton Rd., Heaton Chapel, Stockport. [X805

2¾h.p. Kerry Motor Cycle, Simms magneto, B. and B. carburetter, good condition; £12, or cash adjustment for higher power.—203, Woodhouse St., Leeds. [X892

1911½ Ariel, decompressor, condition as new, lamp, horn, etc., complete with sidecar; £40, or offer; would separate; good reasons.—21, Russell St., Rochdale. [X839

1910½ Humber, 3½h.p., 2-speed, free engine, Lucas lamp, Whittle and Watawata, new tyres, perfect condition; £31.—37, Park Rd., Stretford, Manchester. [0375

A.J.S., 1911½, new November, never been ridden, 2-speed, chain drive; list £46/4, sacrifice £38.—Muir's, Cycle Factors, Linthorpe Rd., Middlesbrough. [0494

REX de Luxe, 1911, 5h.p., 2 speeds, free, Continental tyres, Whittle, Autoclipse, back rest, spare tyre, valve, etc., as new; £40.—Peters, Wilfred Rd., Bolton. [0630

BRADBURY, 1911½, new June, perfect, £33; Bradbury, 1912, free engine, done 50 miles, unmarked, £50.—Muir's, Cycle Factors, Yarm Lane, Stockton. [0495

ZENITH-GRADUA, August, 1911, 3½h.p., Lucas lamp, spare cover, tube, etc., equal to new; £39, lowest; owner bought car.—Rawson, 46, Portland St., Southport. [0117

B.S.A., 1912, 3½h.p., free engine, 2½ tyres, purchased April, ridden 200 miles, perfect condition; £52.—Apply, A. Donaldson, Coldstream House, H. Broughton, Manchester. [X441

LOOK.—3½h.p. 2-speed model N.S.U., new end 1910, overhauled, etc., perfect; £26/10; exchange combination, or single speed and little cash.—40, Andover St., Sheffield. [X925

1910 3½h.p. Scott, 2-speed gear, free engine, spare chains, new cover on back wheel, in perfect condition throughout; £38.—Duckworth, 197, Manchester Rd., Sudden, Rochdale. [X893

KYNOCH Motors, fitted with the famous J.A.P. engines, speaks for itself. — Order now from H. Thompson, 166, Stockport Rd., Levenshulme, if you want immediate delivery. [X129

MANCHESTER Agent for the Kynoch fitted with the famous J.A.P. engine, H. Thompson, 166, Stockport Rd., Levenshulme. Order now for early deliveries. [X130

1911 Royal Enfield, 2¾h.p., chain drive, footboards, lamp, horn, tools, winner 2 hill-climbs, perfect condition, unscratched; £34, or offer.—Hy. Haworth, 141, Duckworth St., Darwen. [0325

RUDGE Multi in stock, £60; 1912 Hazlewood, 3-speed, run 700 miles, everything in new condition, and give any trial, £43; 1911½ Rudge, free engine, run 1,500 miles, guaranteed perfect order, £40; 1909 Rex de Luxe, 3½h.p., 2-speed, £28; 1911 Enfield, 2-speed, in nearly new condition, £32.—Everingham, Pocklington. [X750

TO Traders and Others.—We are open to pay spot cash for Triumphs, Scott, P. and M., Zenith, Matchless, Bat-Jap, Clyno, Douglas, Levis, etc., etc.; also Morgan, G.W.K., A.C., or other good runabouts; state lowest price and date of delivery, all particulars first letter.—Cordingley's Motor Cycle Mart, Harrogate. Tel.: 2Y. [0647

GREAT Sale of motor cycles.—3½h.p. Rex, £7/10; 4h.p. Chater-Lea, magneto, spring forks, B. and B., £12; 5h.p. Triumph, £9; 1909 Douglas, £18/10; 1911 Kerry-Abingdon, £28; 5-6h.p. Rex, 1909, twin-cyl., free engine, and sidecar, £25, worth £40; 1908 Triumph, new condition, £25; P. and M., nearly new, 2-speed, free engine, £37/10; we have about 60 second-hand motor bikes in stock, consisting of 1907, 1908, 1909, 1910 Triumphs, prices from £15; several Bradburys, Singers, Moto-Reves; all machines sold are warranted in good order; sidecars from 50/-.—The Motor Cycle Exchange, 160, Young St., Sheffield. [0100

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

1911 4-cyl. F.N., as new, exhaust whistle, Service horn; £55.—Harold Potts, Broseley. [X147

1912 Bradbury, 3½h.p., 2-speed, F.E. model, just delivered; £55.—Hughes, Garage, Ellesmere. [0305

REY

5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.
Tele: "Rey, Hampstead." Tel: 2678, P.O., Hampstead.

EXTENDED PAYMENTS
Taken on any Machine or Runabout.

NO EXTRA CHARGE ON MOST MAKES.

Following 1912 Machines for
IMMEDIATE DELIVERY
AND IN STOCK:

TRIUMPH T.T. Roadster, 1912	£50 0
RUDGE Multi-speed, 1912	£60 0
TRIUMPH Standard Model	£48 15
TRIUMPH 1912 F.E. Model	£55 0
RUDGE Standard Model	£48 15
RUDGE T.T. Model	£48 15
RUDGE F.E. Model	£55 0
CLYNO 5-6 h.p. 1912 2-speed Model	55 Gns
P. and M. 3½ h.p. 1912 2-speed Model	£65 0
B.S.A. 3½ h.p. 1912 2-speed Model	£60 0
B.S.A. 3½ h.p. 1912 Standard Model	£50 0
BRADBURY 3½ h.p. 1912 2-speed Model	£55 0
ZENITH 6 h.p. Model	67 Gns
ZENITH 3½ h.p. Model	53 Gns
DOUGLAS L Lady's Model	£52 0
DOUGLAS J T.T. Model	£47 0
DOUGLAS G Standard Model	£41 0
BRADBURY Standard Model	£48 0
BRADBURY F.E. Model	£54 10
BRADBURY T.T. Model	£48 0
SINGER 3½ h.p. 3-speed Model	£58 10
LINCOLN ELK 3½ h.p. Standard Model	£34 5
HUMBER 3½ h.p. 2-speed Model	£52 10
BAT 6 h.p. Standard Model	£58 0
SINGER 2-speed 4 h.p. Sidecar Model	£65 0
ZENITH 8 h.p. Model	69 Gns
DOUGLAS Model K	£50 0
BRADBURY 2-speed Model	£55 0
B.S.A. F.E. Model	£58 10

G. and N. Runabout in four weeks.
Any other makes on application.

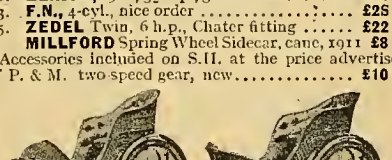
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Machines at Bargain Prices to Clear.

2011.	**F.N.,** 1911 model, 6 h.p., like new	£35 0
2047.	**F.N.,** 2¼ h.p., 1911, 2-speed gear	£26 0
1955.	**F.N.,** 4-cyl., 6 h.p., good order	£35 0
1966.	**F.N.,** 4-cyl., 1911, with sidecar	£35 0
1966.	**F.N.,** 2¾ h.p., magneto, splendid order	£15 0
2064.	**F.N.,** 2¼ h.p., 1910, 2-speed	£24 0
1858.	**F.N.,** 2¼ h.p., 2-speed, 1910½	£25 0
1968.	**REX,** 1910½, 3½ h.p.	£25 0
H.S.	T.T. Roadster **TRIUMPH,** 1911	£38 0
H.S.	1912 **A.C.,** almost new	£80 0
1912	T.T. **RUDGE,** as new	£40 0
1909	**TRIUMPH,** good order	£26 0
2066.	**J.A.P.-CHATER-LEA,** 4 h.p., 1911	£29 0
2146.	**DOUGLAS,** 1910, fine order	£24 0
1640.	**ZENITH,** 1911, 3½ h.p., good order	£41 0
2063.	**F.N.,** 4-cyl., nice order	£25 0
2135.	**ZEDEL** Twin, 6 h.p., Chater fitting	£22 0
	MILLFORD Spring Wheel Sidecar, cane, 1911	£8 0

All Accessories included on S.H. at the price advertised.

BAT P. & M. two-speed gear, new	£10 0



The £4-10 REY Sidecar £3-10

With Hutchinson or Michelin 26 × 2¼ tyre and tube, 30/- extra.

The famous "REY" EXHAUST WHISTLE now reduced to 12/6 each. Triumph standard type.

The "REY" LEATHER BELTING outlasts two of any other makes. Price 2/- per foot.

—— SPECIAL DISCOUNTS TO TRADE. ——

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

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OUR REED CANE BODIES

have undoubtedly hit the mark.

Undoubtedly this class of cane is far superior and more classy than ordinary cane or wicker work, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

Model E



£7 10s.

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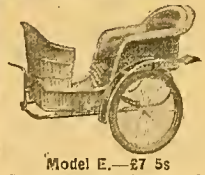
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Model de Luxe.—£6 5s.



Model C.—£7.



Model E.—£7 5s



Model D.—£8.

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID. Send for list.

MISCELLANEOUS BARGAINS.

4½ h.p. Aster Engine, water-cooled	£4 10
4½ h.p. Buchet Engine, water-cooled	£4 10
2 h.p. Stationary Engine water-cooled	£4 10
3 h.p. Simms Engine, M.O.V.	50/-
Leamington Passenger Chair, new	12/6
Cocoanut Fibre Sidecar, foot-mats	3/-
Albion Clutch, fits Triumph	47/-
New Screw-cutting Lathe, 4in. centres	£6 10
Brooks's B105 Saddle	10/6
Brooks's B130 New Saddle, 1912 model	14/6

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19, 21, 23, 25, Hopwood Lane, HALIFAX (Two minutes from G.P.O.)

Telephone 918.

MOTOR BICYCLES FOR SALE.

PREMIER, 3½h.p., free engine, 1912 model, just arrived.

BRADBURY, 3½h.p.. free engine, 1912 model, just arrived.

PREMIER, 3½h.p., 3-speed, free engine, 1912, just arrived.

BRADBURY, 3½h.p., free engine, 1911 model; £35.

PREMIER, 2½h.p., 3-speed, free engine, just arrived.

MOTOSACOCHE, lightweight, 1911 model; £20.

WOLF, lightweight, Stevens engine; £8/10.

F.N., 4-cyl., 1910 model; £30 cash.

WE hold the largest motor cycle stock in North Staffordshire. Write for our cash terms; easy payment terms and exchange terms.

NOTE the address, Hanley Garage, Ltd., Cheapside, Hanley. [0085

N.S.U. Lightweight, 1¾h.p., 1909, magneto, splendid order; approval; 12 guineas.—Bone, Ivanhoe, Llandudno. [X905

£6.—2¾h.p. l.t. magneto Clyde, in running order; must sell, genuine bargain.—Trevethan, The Ferns, Rhyl. [X907

LADY'S Hobart, 2¾h.p, late 1910, magneto, good condition; £30, or best offer.—Wellings, Newcastle, Staffs. [X442

1912 Model K. Douglas; owner unable to take delivery.—No. 668, *The Motor Cycle* Offices, Coventry. [X811

ROYAL Enfield, 1911, perfect condition, Lucas lamp, spare tyre, valve, etc.; £30.—McKeggie, Youlgreave, Bakewell. [X861

TRIUMPH, 1911, 3½h.p. motor bike, standard; £36; in good order.—D. Leighton, Bradley Hall Farm, near Stafford [X135

TRIUMPH, just arrived, first cheque £55, free engine; New Huds n-Jap, 3-speed, 57 guineas.—Miller, Craven Arms. [X901

1912 Clutch Bradbury, new; offers, will take ordinary 3-speed cycle part.—Box No. 626, *The Motor Cycle* Offices, Coventry. [X131

A.J.S., 2¾h.p., 1910, new Palmer, Miller lamp, new cylinder, recently overhauled; £20, or nearest.—Craig, Lupley, Stafford. [X149

1912 3½h.p. New Hudson, 3-speed gear, J.A.P engine, new; best cash offers.—Box No. 627, *The Motor Cycle* Offices, Coventry. [X132

3½h.p. Humber, chain drive, magneto, 26×2½ tyres, in perfect condition; particulars on application; £12.—Aitken, Heanor Rd., Ilkeston. [0345

2½h.p. Premier, 1912, Armstrong 3-speed, free engine, not done 500 miles, condition as new; £37/10, including spares.—E. Goodall, Tunstall. [0329

DOUGLAS, standard, 1911 model, A1 condition, new lamp, tyres, belt, spares; £27/10; expert examination.—Shone, 70, Watergate St., Chester. [0420

1911 2-speed Rudge and Mills-Fulford sidecar, cost £63 last November, sell for £46, or near; any trial.—Fox, Whittington Barracks, Lichfield. [X810

RUDGE, free engine, 1912, done about 500, very fast, new P. and B. lamp, horn, watch, spare valve, plug, etc.; cost £58, accept £48.—Hodson, 153, High St., Bloxwich. [X813

3½h.p. Minerva, spring forks, B. and B. carburetter, magneto, new Dunlop belt, Lycett's saddle, just been thoroughly overhauled and enamelled; £22.—Apply, Hall, Greenaleigh, Matlock. [X973

1912 New Hudson, Armstrong 3-speed gear, J.A.P. 3½ engine, enamelled French grey, inch Dunlop belt; cost with spares £63, accept £48, no offers.—Lawrence, Lichfield Rd., Bloxwich. [X902

BRAND New Motors recently delivered from makers. —Triumph, free engine model, £55; Bradbury, chain drive, 2-speed gear, and model de luxe sidecar, £70/10.—Williams, Motor Depot, Bala. [0506

1912 3½h.p. 2-speed Chain Drive Bradbury, £58/10; 1912 3½h.p. 3-speed Rover, £59/10; 1912 3½h.p. New Hudson, 3-speed, run 500 miles, perfect condition, guaranteed, £48.—Thos. Booth, Frodsham. [X808

TRIUMPH, 1907 frame, 1908 engine, £14 recently spent on machine, Bosch, B. and B., very reliable, lamp, horn, tools, spares; full particulars; £25/10.—S. Ethelston, Hinton, Whitchurch, Salop. [X82

1911 Free Engine Rudge, Rom combination back tyre, new 1in. Lyso, delivered last August, first-class condition; reason selling bought twin; £45, or nearest offer.—Brewin, Barnston, Birkenhead. [X107

N.S.U., late 1910, 3½h.p., 2-speed, free engine, lamp, horn, spares, new back tyre, Whittle belt, practically new, very little ridden, splendid condition; £35.—S. Tucker, Devonshire Rd., Totley Rise, Derbyshire. [X719

PREMIER, 3½h.p., 1911, 2 new Dunlop studded 1912 tyres, with side shields, just been thoroughly overhauled by the Premier Cycle Co., condition as new, with all necessories; £35.—C. H. Bunch, Bridge House, Walsall, Staffs. [X663

DUOCAR!

We have a very racy two-seater Duocar to dispose of. Genuine De Dion engine, water-cooled, Bosch magneto, two speeds and reverse. Requires overhauling. **£25.**

IN STOCK.

We have the following new machines actually in stock.

1912 Multi **RUDGE**	£60 0
1912 Standard **RUDGE**	£48 0
1912 3½ h.p. **NEW HUDSON,** 3-speed	57 Gns.
1912 2¾ h.p. **NEW HUDSON,** 3-speed	47 Gns.
1912 3½ h.p. **HUMBER,** 2-speed	50 Gns.
1911 3½ h.p. **PREMIER,** 2-speed	£48 0
1911 3½ h.p. **PREMIER,** Armstrong 3-speed	£46 10

SECOND-HAND BARGAINS.

1911 8 h.p. **CHATER-LEA,** 3-speed gear box	£65 0
1908 3½ h.p. **P. and M.,** 2 speeds	£28 0
3½ h.p. **N.S.U.,** magneto, spring forks	£17 0
2 h.p. **WOLF,** magneto, spring forks	£15 0
4 h.p. **ANTOINE,** M.O.V., 26in. wheels	£14 0
1910 **P. and M.,** 2 speeds, fine goer	£32 0
1909 **MOTO-REVE,** twin engine, magneto, Druids	£20 0
1910 8 h.p. **BAT,** M.O.V., 2 speeds	£45 0
1911 Lady's **HOBART,** Armstrong 3-speed	£36 0
3½ h.p Twin **PREMIER,** fine machine	£25 0
1911 2½ h.p. **MOTOSACOCHE,** magneto	£27 0

SINGLE-CYLINDER REXES.

1910 3½h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p 1908 Featherweight Rex, Bosch mag.	£17 0

TWIN-CYLINDER REXES.

1906 5-6 h.p. Twin Rex	£16 10
5-6 h.p, Bosch, Lloyd's variable gear	£22 0
7 h.p.-de Luxe, 2 speeds, M.O.V.	£48 0
5-6 h.p. de Luxe, 1908, 2-speed model	£28 0
5-6 h.p. de Luxe, 1908, 2 speeds, special	£29 10

SIDECAR COMBINATIONS.

8 h.p. **BAT,** 2 speeds, Milliford sidecar	£50 0
5-6 h.p. 2-speed 1908 **REX** and sidecar	£33 0
7-9 h.p. 2-speed **REX** and sidecar	£53 0
1911 8 h.p. **CHATER-LEA,** 3-sp. and sidecar	£70 0

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3 h.p. **MINERVA,** vertical, M.O.V.	£12 0
3½ h.p. **EXCELSIOR,** Amac, h.b. control	£10 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

3 h.p. 1908 **REX,** Bosch magneto	£17 0
5-6 h.p. Twin **REX,** spring forks, h.b. control	£16 10
Twin-cylinder **MOTO-REVE,** magneto, Druids	£20 0
4 h.p. **ANTOINE,** M.O.V., vertical engine	£14 0
2 h.p. **WOLF,** A.J.S. engine, magneto	£15 0
3½ h.p. **N.S.U.,** magneto, spring forks	£17 0
4½ h.p. **HUMBER** Tricar, 2 speeds, wheel steering	£19 0
5 h.p. **HUMBER** Car, 2-seater, good goer	£22 0
5 h.p. **REXETTE,** Oppermann 3 speeds	£18 0

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We have a quantity of frames by well-known maker. **Price 32/6 each.**

Rigid forks, **7/6** extra. Druid forks, **45/-** extra. Enamelled and plated in first-class style.

MISCELLANEOUS BARGAINS.

1912 N.S.U. Gear for Bradbury, new	£7 7
26×2¼ Extra Heavy Kempshall Cover, new	£2 8
26×2¼ " " "	£1 19
1912 Senspray Carburetter, nearly new	£1 0
1912 Brooks B104 Saddle, padded, new	16/6
B. & B. Carburetter, h.b. control, good order	14/6
Amac Carburetter, h.b. control, good order	12/6
C.A.P Carburetter, h.b. control	16/6
C.A.V. V twin magneto, 45 degrees	£3 3
1912 B. and B. Carburetters, variable jets	28/6
1912 B. and B. Carburetters, single jet	27/-
1912 Senspray Carburetters	28/6
Camel 1in. Rubber Belting per foot	1/3
Fulford Castor Wheel Sidecar	£5 0
Lycett's Carrier Toolbags (new)	7/6
Sidecar Lamps, show red light behind	7/6
Trailer, 26in. wheels	25/-
New Toolbags, 9×6×3½in.	4/6
Sidecar Aprons, green or red, with studs	7/6
New Lycett's Tubular Carriers	4/11
Longuemare Carburetters	5/-

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but one which we are frequently able to execute by reason of our LARGE and VARIED STOCK.

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Favour us with your inquiry.

Immediate Delivery.
ARIEL.
BRADBURY.
DOT.
ENFIELD.
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HUMBER.
MOTOSACOCHE.
NEW HUDSON.
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REX.
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WANDERER.
SERVICE.
ZENITH, Etc.
MILLFORD, SERVICE, and TURNER SIDECARS.

ARE YOU SELLING?
We require good second-hand machines to replenish our Stock.

A Selection from our second-hand stock:

1911 Scott	£47 10
1912 Clyno	£63 0
1911 F.N. 4-cyl.	£35 0
1911 three-speed Humber	£35 0
1912 4 c/l. two-speed F.N.	£52 0
1911 3½ two-speed Humber	£37 10
3 h.p. Wanderer	£25 0
1911 3½ Bat-Jap	£33 0
1911 F.E. Triumph	£42 10
1911 F.E. Rex	£35 0
1910 3½ two-speed Humber	£32 0
1910 2½ two-speed F.N.	£25 0
1911 two-speed Enfield	£35 0
1909 3½ Rex	£22 10
6 h.p. Chater-Jap Magneto	£22 0
3½ h.p. Chater-Jap Magneto	£20 0
1911 5 h.p. Rex de Luxe	£40 0
1911 7 h.p. Rex Sidette	£47 10

Etc., etc.

All overhauled and in good running order.

THE SERVICE Co., Ltd.,
292-293, High Holborn, London, W.C.

Telegrams—"Admittedly, London."
Telephones—2071 City. 260 Holboro.

"I want a reliable Sidecar machine before Saturday."

MOTOR BICYCLES FOR SALE.

1912 Humber, 3½h.p., 2-speed; immediate delivery; £52/10.—Robinson's, Green St., Cambridge. [0118

TRIUMPH, free engine, late 1910, new Palmer cord tyres, Lucas lamp, complete in every way, also sidecar; this combination in excellent order and ready for the road; £45.—Robinson's, Green St., Cambridge. [0119

TWO 1912 Triumph, free engine models, actually in stock; £55.—Triumph agents, Robinson's, Green St., Cambridge. [0120

CLYNO, 5-6h.p., 2-speed; sole agents in Eastern Counties; £68/5. — Robinson's, Green St., Cambridge. [0121

LADY'S Douglas, 1911 pattern, handle starting, 2-speed gear, excellent condition, complete lamp, horn, Jones speedometer, and quantity spares; £45.—Robinson's, Green St., Cambridge. [0122

TWIN Premier, 1912 pattern, 3½h.p., free engine clutch, soiled only; £51.—Robinson's, Green St., Cambridge. [0123

PREMIER, 2½h.p., 1912 pattern, 3-speed Armstrong, soiled only; £42. — Robinson's, Green St., Cambridge. [0124

ROBINSON'S Motor Bicycle Garage, Green St., Cambridge, Triumph agents. Tel.: 388. T.A.: Bicycles, Cambridge. [0125

NEW Hudsons; delivery from stock.—Sole agents for Suffolk, T. H. Nice and Co., Bury St. Edmund's, and Ipswich. [0101

PREMIERS, all models; delivery from stock.—Suffolk agents, T. H. Nice and Co., Bury St. Edmund's, and Ipswich. [0102

TRIUMPHS, Humber, Bradbury, B.S.A., Rudge, new and second-hand, also sidecars.—T. H. Nice and Co., Bury St. Edmund's, and Ipswich. [0103

BRADBURY, 1911 standard, just through from the works, unscratched, perfect throughout; £35.—Bailey, jeweller, Soham. [0321

2½h.p. Precision-Chater-Lea, Druid forks, light, fast, low and powerful, not 1,000 miles; £29.—Motorist, Bridge House, Boxford, Suffolk. [X962

£3, Kelecom, 2¾h.p., good running order; 2h.p. Minerva, very small and fast, £5; Clarendon, 2¼h.p., just overhauled, £8; exchanges.—14, Sun Lane, Catton, Norwich. [0640

6-7h.p. Antoine, incomplete, new frame, tank, wheels, adjustable pulley, Bates tyres, new bearings in engine; £10, no offers, first cheque secures.—19, Waldeck Rd., Luton, Beds. [0583

2h.p. Humber, 1911, new Dunlop belt, spare tube, all accessories, new appearance; ride 50 miles to prospective purchaser; nearest £26.—T. Daish, Magdalene College, Cambridge. [X123

ARIEL, 2½h.p., bushes, rings, pullers, and compression as new, almost new Palmer cord back, Peter-Union front, Amac, h.b.c., splendid order, go anywhere, lightweight; quick sale £10.—Mayne, 8, Georga St. West, Luton. [X716

SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

ORIENT Buckboard, 4½h.p.; £20.—Sidney Morgan, The Bungalow, Pontypool. [0408

NEW Hudson, 2½h.p., 3-speed, new; accept 42 guineas.—Taylor, outfitter, Abergavenny. [0625

LATE 1910 2h.p. Moto-Reve; bargain; got powerful machine; £16.—Davis, Poplands, Leominster. [X150

LATE 1911 Chain-driven Clyno, 6h.p., good condition, with spares; £45, or nearest. — Gibbins, Burnt Green. [X851

ARIEL 3½h.p. Decompressor, absolutely new, but 1911 late pattern; what offers?—Marriott, Motor House, Hereford. [0097

1911 Calthorpe, 3½h.p. Precision engine, very low, in splendid condition; £32/10, or offers.—Collier, 52, Somerset St., Abertillery. [X772

HUMBER, 2h.p., 1911, overhauled by makers, splendid condition, tyres new, spares; £20.—Boddington, Mealcheapen St., Worcester. [X653

B.S.A., 1912, free engine, not soiled, ridden 20 miles, what offers? or exchange lightweight and cash.—Farrington, fruit grower, Evesham. [X715

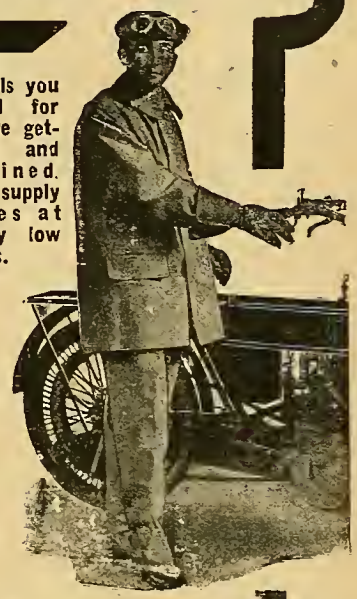
F.N., 2¾h.p., 2 accumulators, voltmeter, lamp, etc., good running order, good Dunlop tyres; £12.—Ridsdale, Vicarage, Salford Priors, Evesham. [X143

TOURIST Rex, 3½h.p., new June, 1911, fast, good hill-climber, lamp, horn, Whittle belt; £30; good condition; any trial.—Lane, 50, City Rd., Cardiff. [X439

1907 Minerva, 3½h.p., magneto, B. and B., tyres and belt good condition, complete, ready for the road, £10; would consider £6 and good push cycle.—40, Rhiw Park, Abertillery. [X774

FRED. MORGAN, Talgarth, can give prompt delivery of 1912 New Hudsons, also some 1911 models, second-hand, and 3½h.p. 2-speed 1911 Humber, with Montgomery sidecar, nearly new, 2¾h.p. twin N.S.U., etc.; enquiries solicited. [X657

Y B SHABBY



The Overalls you have had for months are getting torn and travel-stained. We can supply new ones at ridiculously low prices.

Try our Half Guinea Dust Suit, washable.

Double-breasted Jackets and Overalls which fasten to brace button, Jackets only **6/3**
Overalls only **4/3**
Long Holland Dust Coats **4/11**
Allweather Waterproof Suits. same style, Jackets **16/6** Overalls **8/6**
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A few more **SPECIAL BARGAINS.**

	Usual Price.	Bargain Price.
50 pairs double Texture Overalls	8/6	**5/6**
33 pairs rough Horsehide Gloves	2/11	**1/11**
2 gross Eye Shields as previously illustrated in "Motor Cycling"	2/6	**1/3**
60 pairs Best Quality in neat Chamois Leather Case. Glass or Celluloid Lenses.	4/9	**3/11**
36 Waterproof Caps in fawn	4/6	**3/6**
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1910 Triumph, splendid condition, Mabon free engine clutch, new Kempshall back, Clincher front, h.b.c., magneto, spare valve and inner tube; £34, bargain.—70, Belmont Rd., Worcester. [0485

2¼h.p. Minerva, 1912 B. and B., low frame, new tank, dry ignition, h.b.c., new belt, tyres excellent, will do 40; £12; ride 50 miles to meet buyer.—Haines, Elm Tree House, Holmer, Hereford. [0488

SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants, and Channel Islands.

DOUGLAS, 2¾h.p., 1911 model, only ridden 600 miles; £30.

F.N. Lightweight Model, free engine, 2 speeds, excellent order and condition; £25.

LINCOLN Elk, 3½h.p., splendid order and condition; £18/10.

DOUGLAS, 2¾h.p., 1911 model, 2-speed, free engine, starting handle, footboards, excellent condition throughout; £35.

DOUGLAS 2¾h.p., 1912 model K., free engine, 2-speed, footboards, and kick starter, actually in stock; first best cash offer accepted.—T. Baker and Sons, 35 and 37, Friar St., Reading. [0405

TRIUMPH, 1912, free engine, and standard models from stock.—Laytons', Bicester. [X742

RUDGE Multi-speed, delivery of new machine from stock.—Laytons', Bicester. [X743

JAMES, 1912, standard model; delivery from stock.—Laytons', Bicester. [X744

B.S.A. Motor Bicycles, free engine models from stock.—Laytons', Bicester. [X745

ENFIELD, 2¾h.p., 2-speed model; cost £52/10; been run 20 miles only; £44.—Laytons', Bicester. [X746

PREMIER, 2¾h.p., lightweight, soiled very slightly; cost £36, £29.—Laytons', Bicester. [X747

CALCOTT, 2¾h.p., 1912; delivery from stock; £33/10.—Laytons', Bicester. [X748

EXCHANGES Considered; let us have your offer with regard to above machines; it will receive our careful attention; we are reasonable people.—Laytons', Bicester, Oxon. [X749

NEW 1912 Humber, 2-speed, 3½h.p., just received, still in crate; £50.—Schreiber, Lymington. [0409

BRADBURY, 1911, brand new standard model; great bargain, £39.—Ginger, Motors, Banbury. [0082

RUDGE, free engine, 1912 model, cost £55, condition perfect; £45.—Barnes, Colnbrook, Bucks. [0543

4h.p. 2-speed Roc, Amac, h.b.c., Bosch, in splendid condition; £21.—Saunders, butcher, Petersfield. [X676

2¾h.p. Excelsior, good running order, low, vertical, 26 wheels; £10.—10, Mary Port St., Devizes. [X109

TRIUMPH, clutch, August, 1911, tools, spares, horn, condition excellent; £45.—Wayman, Exeter College, Oxford. [X159

PHELON and Moore, 3½h.p., 2-speed, free engine, in perfect order; first cheque 28gns. — Beachus, Newent. [0419

1912 Free Engine Triumph, run 300 miles; given up riding; £51. — Cawse, 3, Mount Pleasant, Lydney. [X666

TRIUMPH, Bradbury, both free engines, new in crates; first cheque secures. — Gray's Garage, Beaconsfield. [0456

TRIUMPHS, 1912, F.E. models; £55; immediate delivery from stock; two only left.—Paxman, Tewkesbury. [C471

HUMBER, 1912, 2¾h.p. twin, 3-speed Armstrong gear, new, perfect; £46.—Humber, 10, York Rd., Maidenhead. [0487

2¼h.p. F.N., 2-speed, shaft drive, excellent condition; £20. — Baker, 200, Holdenhurst Rd., Bournemouth. [0503

1911 3½h.p. Bradbury, free engine, magnificent machine, practically new; £36.—Stanley Galpin, High Wycombe. [X664

2¾h.p. F.N., new tyres, lamp, and horn, B. and B. carburetter, h.b.c., in good order; £9/10.—Harry Eaton, Witney. [X685

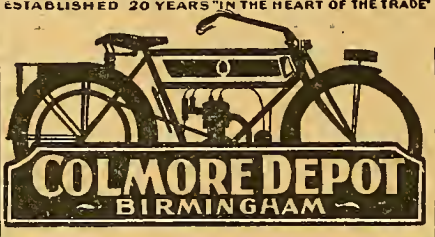
2¼h.p. Triumph, Minerva battery, in thorough good running order, tyres good; bargain, £6.—Yates, Bourne End, Bucks. [C366

IMMEDIATE Delivery of new Rudge motor bicycles, Multi-speed and free engine models.—Willis and Son, Eton, Windsor. [0314

ROYAL Enfield, 2¾h.p., new July 1911, carefully used, all accessories; £34, bargain.—Hewlett, 38, Bloomfield Rd., Gloucester. [X842

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1912 Multi Rudge, in stock; £60.—See below.

1912 Humber, 2-speed, 3½h.p., F.E.—See below.

TWO 1908 Triumphs, thoroughly overhauled; guineas.—See below.

1912 Free Engine Rudge, done 2,000 miles; £43/1 —See below.

ONE 1907 Triumph, magneto; 19 guineas.—S below.

1912 Free Engine Triumph, in stock.—See below.

1912 Multi Rudge, in stock; £60.—See below.

1912 Humber, 2-speed, 3½h.p., F.E.—See below.

TWO 1908 Triumphs, thoroughly overhauled; 3 guineas.—See below.

1912 Free Engine Rudge, done 2,000 miles; £43/10 —See below.

ONE 1907 Triumph, magneto; 19 guineas.—Se below.

1912 Free Engine Triumph, in stock.—See below.

1912 Multi Rudge, in stock; £60.—See below.

1912 Humber, 2-speed, 3½h.p., F.E.—See below.

TWO 1908 Triumphs, thoroughly overhauled; 3(guineas.—See below.

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ONE 1907 Triumph, magneto; 19 guineas.—Se below.

1912 Free Engine Triumph, in stock.—See below.

1912 Multi Rudge, in stock; £60.—See below.

1912 Humber, 2-speed, 3½h.p., F.E.—See below.

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THE MOTOR CYCLE

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Manufacturers' Commendable Decision.

SOME weeks ago we announced that the Motor Cycle Manufacturers' Union was considering the question of restricting the number of open events by selecting a certain number of the most important, which it would agree collectively to support and to ignore the remainder. The selection of the representative events has now been made, and will be found in another part of this issue. This is undoubtedly a move in the right direction, as all will admit that the large number of open motor cycle competitions week by week in various parts of the country is really getting monotonous. There is hardly need for us further to dwell upon this question, as in our recent remarks under the heading of "A Glut of Open Hill-climbs," we stated clearly our views on the subject. We must congratulate the Manufacturers' Union upon coming to this decision, for it is only within the power of the A.C.U., the governing body of motor cycling, and the Motor Cycle Manufacturers' Union to reduce the number of contests, the former by cutting down permits and the latter by abstaining collectively from competing. The A.C.U. might easily have withheld permits from clubs, or restricted the number of open events arranged by any one club to, say, two per year. However, the A.C.U. has not seen its way to exercise its authority in this matter, so we welcome the manufacturers' announcement to the effect that they have selected from the fixture lists issued by the leading motor cycle clubs ten events which they have decided to support collectively, not only with entries from the firms connected with the Union, but also in the matter of prizes which will be given to the organising clubs out of the funds of the Union. This decision refers only to day trials, and the organising clubs selected may be altered another year.

Waning Interest in Hill-climbs.

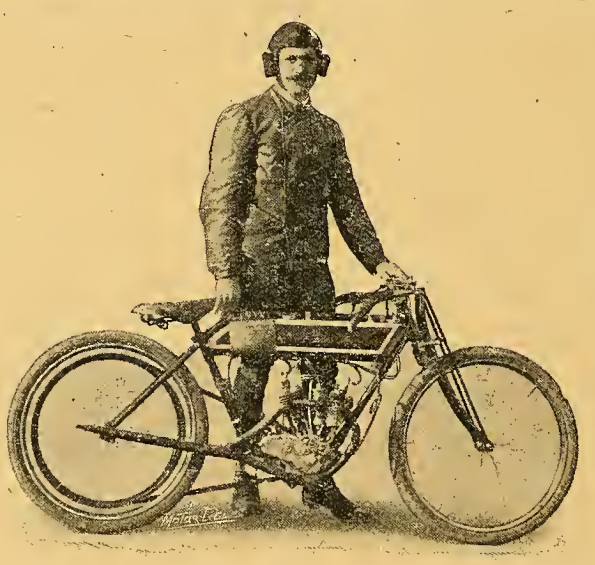
NOTHING, we believe, has yet been definitely decided with regard to hill-climbing competitions, although it is plain to see that these forms of contest are fast losing the interest which was once attached to them on account of their frequency, and it is high time something was done to restrict their number. We suggest that the Auto Cycle Union would be wise to fall in line with the Manufacturers' Union, and now restrict the number of hill-climbing competitions instead of issuing permits to all and sundry whether the club be experienced in the organisation of open contests or not. The result would benefit all eventually, for instead of having a host of unimportant events with unrepresentative entries, we should have a certain number of really important national contests, and a first prize would be worth winning. At present the value to the maker of winning a hill-climb lasts but one week, for it has become the usual practice for a move to be made to the other end of England the following week-end, and the positions of the leading riders to be reversed. So long as this goes on interest will wane, and it has already had its effect by more than one leading manufacturer having decided to withdraw from hill-climbing contests. One open hill-climb per month is ample in our opinion. We exclude club members' hill-climbs, which may be as frequent as the organisers have time to arrange details; our remarks refer to open events which manufacturers feel bound to support.

My Most exciting Ride: No. 4. SAM WRIGHT.

Interrogated by L.C.

SAM WRIGHT has had a considerable amount of experience on the road, but on trying to hunt up an exciting incident in his career he could not think of anything beyond the many little incidents which every motor cyclist encounters.

"At Southport," said he, "in the speed trials of 1903, I had an exciting time at the end of the kilometre race. I was riding a 2¾ h.p. Excelsior, and had just completed the course at a speed of sixty-two miles an hour, when I found myself running into a gradually narrowing avenue between rows of cars. Then one row gave place to a wall, and as I sped through one hand grazed the wall while the other grazed the cars. I don't know how I kept the machine up, but I did.



"But for real excitement, I think my hour record ride in Class B at the Brooklands Track last November was the race. With my watch on my wrist I saw that I was lapping at about 2m. 45s., and I knew this was good enough for record. Gradually the hour began to close, leaving me in a state of great excitement. First I would look at the watch, then turn and see the lap scoring cards at the fork, denoting the distance I had done. All the time my ears were keenly waiting, almost expecting that some mechanical trouble would put an end to my aspirations. As the time drew shorter this terrible apprehension, which I could not get rid of, became more pronounced, but I kept on going, getting everything I could out of the engine, which, despite my morbid feelings, was doing its work well. On I went, the great white track flying beneath me as I covered lap after lap and saw the scoring board faithfully chronicling my distance. At last the end came, and with considerable relief I switched off with the satisfaction of knowing that the record—nearly fifty-nine miles in the hour—was mine." This record was made in Class B (under 350 c.c.) on a twin-cylinder 2¾ h.p. Humber lightweight.



Following in father's footsteps.

Riding Tips.

On interrogating Wright as to riding tips, he was most emphatic in declaring that every motor cyclist has to find his own tips, and that the experiences of one man are of no value to another.

"You must," said he, "adapt your brains to your own particular machine, and by your very knowledge of it, learn tips which nobody else could give you. If there is one thing which is general in its requiring attention, one thing which every motor cyclist must do to ensure good running, it is the care of the carburetter.

"Always look after your carburetter; it is the main thing. You can generally trust the engine if you look after the subsidiary contrivances. Half the trouble on the road is caused by faulty carburation, and still more can be traced back to it."

A Recent Achievement.

Sam Wright's most recent achievement is an ascent of Bwlch-y-Groes, more commonly called Dinas-Mawddwy. This mountain pass rises 1,250 feet and is two miles long. Wright is one of two riders successfully to reach the mountain top. He was mounted on a 3½ h.p. two-speed Humber.

The summit of the pass is nearly 1,800 feet above sea-level, and the road is exceptionally rough, being covered with large flat slate stones.

Up to this year Sam Wright had the distinction, probably unique, of never having stopped involuntarily in a motor cycle reliability trial. He is usually chosen as one of the Coventry and Warwickshire Motor Club team in the Team Trials, and has more than once helped to annex the club championship trophy on his Humber.

THE MOTOR CYCLE A FORTNIGHT HENCE! T.T. AND SUMMER NUMBER.

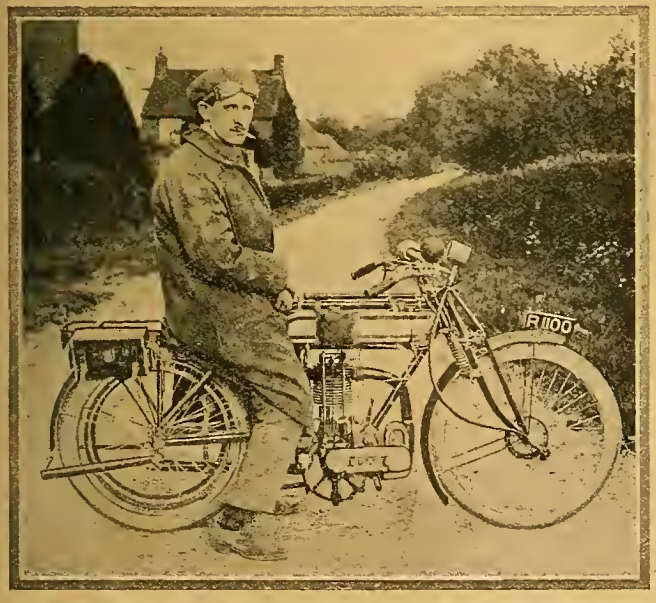


Required, a New Accessory.

Many of us are using three-speeded hubs this year, and we are told to oil these regularly with ordinary cycle bearing oil. On tour we rapidly use a whole can of this oil, but there is no accommodation on the machine for storing one of the sixpenny oval cans in which this lubricant is sold. Will some accessory dealer please market a tiny tank, suitable for storing this oil, to be attached to the top tube, and sold at a reasonable figure? There is no need for an outlet tap to be fitted. Most of us use suction force-pumps for oiling our hubs, and we can recharge these through the filler cap hole. The oil gun should be only partially filled, any attempt to inject a large quantity of oil results in leakage on to spokes, rim, and tyre. Little and often is the motto.

Adjustable Pulleys.

The very day on which I wrote my notes in favour of the tool-less pulley provided an excellent object lesson of the point. As I walked along in the pouring rain I encountered what Mantalini would term a "dem'd moist unpleasant body" in the form of a worthy medico, attired in full waterproofs, solemnly pushing home his motor bicycle. The make he patronises is disfigured by a tool-operated adjustable pulley, of the well-known type to which you affix the largest wrench obtainable, and then clump its far end with the coal-hammer. This clumping process had demoralised the metal of the pulley, so that the outer end of the fixed flange barrel had suddenly cracked off on the road, carrying away the locknut with it, and leaving no thread to which a faked lock could be attached. As a consequence the unlucky owner had to push; for as soon as he started the engine, the unlocked loose flange unscrewed itself, and swirled off in a graceful parabola towards the nearest tuft of nettles. Lightweight machines, which have thin flanges and barrels, stand in specially urgent need of tool-less pulleys.



Edgar Russell on his home-made machine, which is fitted with m.o. overhead valve engine. He won the Haskard-Mitcham cup in the recent Derby and District M.C.C. reliability trial.

Steering Fork Design.

I wonder how many riders have noticed the great variations in the efficiency of fork designs of different makes. A few years ago no machine could be steered at all straight at really slow speeds, nor did the failing really matter, as we seldom bothered to drive at less than ten or twelve miles an hour. The situation is altered to-day. Thanks to variable gears and free engines, we most of us drive on occasions at single figure speeds; we remain in the saddle through traffic where once we used to dismount and wait or push. Now nothing looks worse than to see a rider wobbling violently in the attempt to keep his machine upright, whether he be moving off on the clutch or travelling at four or five miles an hour in a press of carts. Last week I rode two machines of different makes; the fork of one was so designed that it was impossible to keep the machine straight at less than 12 m.p.h., and at 6 m.p.h. real skill was required to hold the machine up at all. The other is a make which has been fitted with a clutch for some years past, and the steering has been so improved that a clever rider on a good surface can drive in a bee line without front wheel wobbles at 6 m.p.h. until he gets tired. Nor is there any compensating disadvantage at high speeds, for the machine which steers best at the low speeds also keeps its track most tenaciously and requires less holding than the other at 60 m.p.h. Certain makers should attend to this point at once.

Clutch Control Fixing.

The clutch control bracket on certain free-engined and variably geared machines needs partial re-designing. The spindle on which the clutch pedal is mounted often screws through the two halves of a split tube clip, and has no locking device of its own. The makers rely for locking upon the other bolt, which grips the two halves of the split clip at the other side of the frame tube. If the clip is bolted up evenly and truly, the strain of starting the machine on the clutch will often cause the clutch spindle to turn in the threads, and so upset the adjustment of the control, either throwing the clutch permanently in or permanently out, according to the details of the design. The simplest way of locking the spindle is to bolt it up out of truth, by overtightening the short clip-bolt, so that the clutch pedal spindle is strained awry, and cannot move. This is grossly unmechanical, and the makers ought to lengthen the clutch-pedal spindle, and equip it with a locknut on either side of the clip. My own clutch invariably causes this spindle to revolve a trifle, so that the clutch is never truly free.

Occasional Comments.—

Tyre Tests at Last!

For some years past I have steadily urged the need of tyre observation and awards in the big trials, and naturally I am gratified to see that the A.C.U. has at last adopted a suggestion which originated in these columns. Sound as the principle is, the path of practice will undoubtedly be thorny, but the A.C.U. is more alive and efficient to-day than it has ever been, and I believe it will emerge triumphantly in a year or two. Apparently a start is to be made with optional tests. The behaviour of every tube and cover entered in the Six Days' of 1912 is not to be compulsorily recorded and published, but it is left to tyre makers to submit their wares for a special set of awards. Possibly certain makers will endeavour to "crab" the innovation, but there is more liberty in the tyre world than there has ever been, owing to the expiry of master patents. and the implication to be made against abstaining firms is obvious. If a firm abstains, the public may be pardoned for inferring that its products are untrustworthy compared to those which face the music and the publicity. Incidentally I believe the innovation will give the motor bicycles a fairer chance. Good machines have suffered in past trials from being shod with light and flimsy tyres, the resulting troubles depriving them of medals well earned by intrinsic mechanical excellence. This year heavier tyres should be more universally fitted, and the percentage of clean scores should be increased.

Camera Carrying.

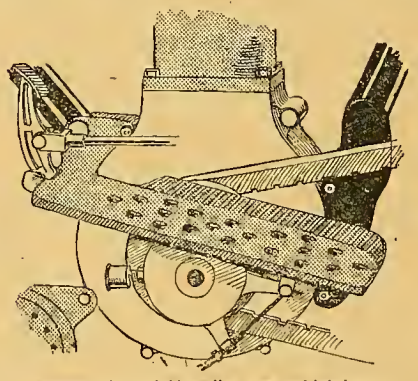
My experience of carrying a camera on a motor cycle is that only a small film camera can be taken on long rides with any pleasure or comfort, because the only safe place to carry it is by a strap slung across the shoulders. The strap must be fairly tight, or the bouncing of the camera is a nuisance, and, consequently, a spring-hook joint in the strap, where it crosses the chest in front, is preferable to the ordinary strap, which necessitates a process analogous to skinning off a sweater. Needless to say, the camera should be wrapped in dustproof material, inside its waterproof case, otherwise dust will certainly enter the delicate mechanism of the shutter and slow its operation; then, on the return from the tour, all the films will be found to be grossly over-exposed.

Improvements to the Ariel Gear.

THERE have been a number of alterations of a minor order made to the 3½ h.p. Ariel model during the early part of the year, and a call at the works of Components, Ltd., proved interesting in many ways. We inspected some of the fine plant used in the construction of Ariel motor cycles, and were impressed by the number of machines going through the shops. The tank of the latest model has rounded edges, and is fixed on the lower of the top tubes, which can be detached entirely by removing two bolts. The cam, gear, and timing, and also the decompressor, have undergone slight alterations with beneficial results, but the most important change lies in the free engine and variable pulley, for though the principle is the same, the actuation has been much improved.

Alterations to the Pulley Gear.

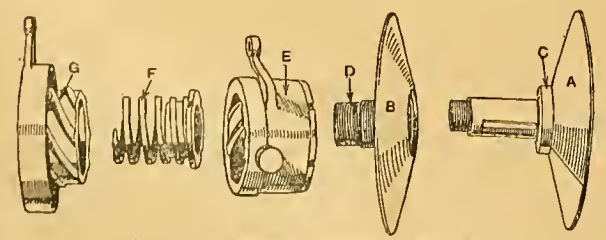
The inner pulley flange A is made with a hollow extension fitted with two long keys, and on which is mounted the ball race C; the belt bottoms on this in the free engine position. On the hollow extension slides a sleeve D, which is kept from revolving by the two keys before mentioned. This sleeve is screwed on the outside, and on it is mounted the outer flange B, held in position by a locknut. Next to this is mounted a ball thrust race carried in the end of what must be called the worm box E, held in its position on D by a locking ring, and then a nut carrying the powerful flat coil spring F, which presses against a ball race carried inside the moderately quick pitch worm



Showing the variable pulley gear and lubricator, also the lower position for the footplates.

G. The whole is locked to the engine-shaft by an extension of the starting handle jaw, which is screwed internally for that purpose.

The worm box E is anchored to the footboard, but the worm G can be rotated by a Bowden wire attached to a lever on the cover cap. When this is rotated against the action of the spring F, the pulley flanges are drawn apart, and the belt rides on the ball race C, but as soon as the self-locking control lever is eased off the action of the spring forces the flanges together, causing the belt to ride to the desired height in the pulley, and thus varying the gear ratios. A key is supplied to facilitate the removal of the pulley.



The Ariel variable pulley gear shown dissected.

Lower Foot Plates.

A somewhat improved form of rubber studded foot plate is now in use, and is fitted considerably lower down than usual, thus giving a more comfortable riding position. A point worthy of notice is that though the Ariel spring seat-pillar is listed as an extra, only a very small percentage of machines are sold without it. On a short trial of a T.T. model we were delighted with the gear (which showed no signs of slip, although no provision is made for varying belt tension), also with the running of the engine, the extraordinary slow running of which is rendered possible by the use of the decompressor.

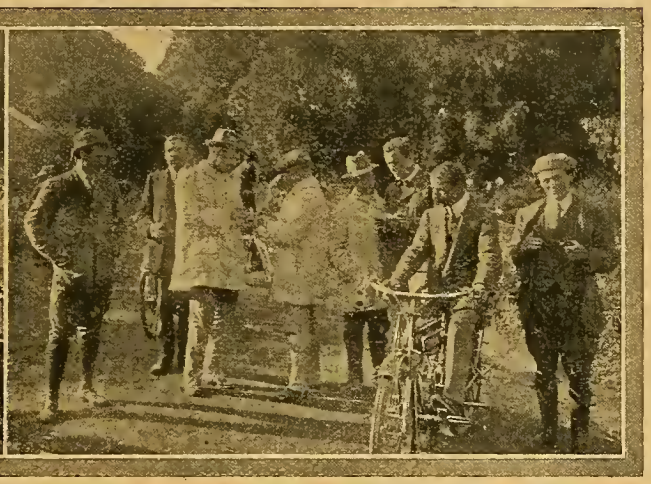


F. C. Sangster on the 3½ h.p. Ariel, with improved variable pulley gear, with which he gained third place in the Birmingham-Land's End-Birmingham trial for the Lycett trophy.

Cape Peninsula M.C.C. Hill-climbing Contest.



The gathering on the main road of Groot Schuur. A Scott and Lowen sidecar in the foreground.



The drawing for places. On the extreme right is C. E. Scott (Rudge), the winner; next to him, V. Lee (2¾ h.p. Humber), first in the lightweight section.

THE ever increasing interest in motor cycle doings accounted for the largest gathering of spectators yet met at any of the C.P.M.C.C.'s contests.

The venue was Groot Schuur (the famous grounds presented by Cecil Rhodes to the people of South Africa), while the climb took place that afternoon on the Memorial Road with its gradient of one in seven over a distance of approximately one thousand yards.

Competitors had to cross the main road of Groot Schuur and dash through the open gates, where a big locking stone in the centre barricaded a free run through, allowing only about one and a half yards at each side for the machine.

When H. S. Olive on his 7 h.p. Indian came flyng past the large crowd near the gates at a speed of between thirty-five to forty miles per hour, there was no doubt left that he would make fastest time of the day. And so he did. He would have done even better if a slipping clutch had not hindered the progress and thus prevented opening the throttle to a fuller extent.

Vincent Lee astride a brand new twin Humber lightweight was watched eagerly, as great things were expected of that smart little engine and the daring rider. While making fastest time for the lightweights, beating the next man by thirty seconds, he however was only able to gain eighth place on time, and sixth place on formula, which was as follows: Speed squared multiplied by capacity, divided by weight of rider and machine. This is the hill-climbing formula recommended by *The Motor Cycle*. The following are the results of the competition:

Rider and machine.	Seconds.	Position on formula.
C. E. Scott (3½ Rudge)	74⅗ ...	1
J. Thornton (3½ Bradbury)	73⅘ ...	2
H. S. Olive (7 Indian)	69 ...	3
D. McMillan (3½ Bradbury)	83⅕ ...	
A. Douglas (3½ Triumph)	86 ...	
V. Lee (2¾ Humber)	103 ...	
W. Boyliss (2¼ F.N.)	143 ...	
S. Jones (3½ Triumph)	86 ...	
H. L. Stein (3½ P. and M.)	101 ...	
H. E. Haddon (3½ Swift)	...	

THE MOTOR CYCLISTS' PROGRESSIVE ASSOCIATION.

A GENERAL meeting of the M.C.P.A. was held at the Holborn Restaurant, last week, to enable the committee to report progress and give an account of its stewardship to date.

The chairman, Mr. Otto Thomas, reminded those present that the primary objects of the founders were: the government of motor cyclists by motor cyclists, the strengthening of the A.C.U., and by co-operation with the provincial clubs, the creation of a truly representative, national body to foster and encourage the sport and pastime on progressive lines.

A scheme was evolved to ensure better representation of the provincial clubs, new sub-committees were suggested, and active motor cyclists were nominated to the new committee. They had further induced Major Lindsay Lloyd and Mr. W. H. Browne to consent to act as vice-chairmen with Mr. J. R. Nisbet and Mr. Otto Thomas, Mr. Mullam to fill the responsible post of hon. treasurer, and finally they had secured the election of Mr. T. W. Loughborough as secretary; which result alone, in the Chairman's opinion, justified the formation of the M.C.P.A.

A general discussion followed, and it was decided that the next general meeting should be held at Olympia during show week, but that if any special need should arise the chairman and hon. secretary might call an extraordinary meeting at any time.

The hon. secretary, Mr. W. G. McMinnies, reported that the nominal subscription of 1s. a member had not been sufficient to cover expenses, and it was decided to invite the provincial clubs, on whose behalf the expenses had been mainly incurred, to contribute 5s. per club to the funds.

The committee will be obliged if club secretaries will accept this notice as an invitation to subscribe, and, if willing, remit the amount named to the hon. secretary.

A Smoking Concert at Daventry.

It was also decided to hold a smoking concert at the Wheat Sheaf Hotel, Daventry, at 8.30 p.m., on Saturday, the 15th inst., following the M.C.C. inter-club team trial for *The Motor Cycle* Cup.

A concert sub-committee was appointed consisting of: Mr. W. H. Browne, Mr. McMinnies, Mr. H. Karslake, Mr. F. A. Hardy, and Mr. W. Cooper. Tickets, 1s. each, may be obtained on the day. It is hoped that a large number of our provincial friends will be present.

Hearty votes of thanks to Mr. W. H. Browne, Mr. McMinnies, and the Chairman concluded the business of the meeting.

NOTICE.

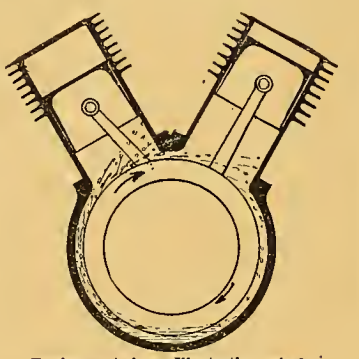
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TWIN-CYLINDER ENGINES.

IT is proposed in this article to give a few notes on two-cylinder motor cycle engines, and where possible to compare them with singles. These may possibly help a prospective buyer to decide which of the two types to buy, and at the same time give him a few hints on tuning up should he decide on a twin.

Obviously, the single-cylinder scores in simplicity, but in these days of m.o.i.v. and magnetos the advantages are not so pronounced as formerly, but the single-cylinder engine usually develops more power per cubic capacity. The chief points against the twin are faulty synchronisation of cylinders and unequal lubrication, but, on the other hand, it gives a very much more even torque and consequently greater comfort and more freedom from skids at low engine speeds.

This article deals with modern engines only, so that we may take it that magneto ignition is fitted as standard, and so the relative firing points in each cylinder cannot be altered without tinkering the cams in the magneto make-and-break, which it is advisable for no one to touch except the experienced. It will be remembered that in single-cylinder engines the spark is timed to take place in the "maximum" position of the magneto (*i.e.*, in the most efficient position of the armature). Now this maximum point occurs twice in every complete cycle (if the magneto runs at camshaft speed) but at equal intervals.



Tuning up twins. Illustrating splash lubrication effect.

Even Firing.

There are only three types of twin on which both can be utilised, *i.e.*—(1) the Douglas type with horizontally-opposed cylinders and opposed cranks; (2) the Alcyon type with two vertical cylinders and one crank pin; and (3) the Premier type in which the cylinders are set at an angle and the crank pins at such another angle as to give equally spaced firing. Modern magnetos are so efficient that this point is not of vital importance, though a better spark is obtained on the above three types. A few firms (notably the N.S.U. and M.M.) have devised a method of gearing by which the armature is accelerated just before the contacts break, and this in some measure gets over the difficulty.

Inlet Valves.

There are still a fair number of twins on the road fitted with atmospheric inlet valves, and with these it is of the utmost importance that the springs should be of equal tension, and that the valves should have equal amount of opening. This subject has been written upon so often that it will be sufficient to say that the opening should be kept small (5-32in. is the utmost satisfactory opening for a big twin, and this should be decreased for smaller engines), and that strong springs give good high speed and poor starting, while the converse is also true, *i.e.*, weak springs give good starting and slow running, but are unsatisfactory for speed.

In the case of mechanically-operated valves, makers send their machines out timed correctly, and very little trouble is likely to occur in this way; however, it is advisable to check the timing occasionally, and either adjust the tappets or fit new ones till the lift and openings are the same on each cylinder.

Plugs.

A less important item, but one which decidedly affects the running, is the gap between the sparking plug points. It is advisable to use the same make of plug in each cylinder, and the gaps should be the same in each case (roughly 1-32in.) The position of plugs is important, and for touring work the inlet valve cap or in proximity to the inlet valve appears to be the most satisfactory, though it is doubtful if this is the best position if the last ounce of power is required for hill-climbing or short-distance racing.

It is important that the carburetter should be placed at an approximately equal distance from each cylinder, and that there should not be more or sharper bends to one cylinder than the other. Also note that there are no air leaks at the pipe joints, as this is frequently a cause of misfiring at low speeds. The compression should, of course, be kept equally good in each cylinder. Here I would remind novices that it is not a good plan to take off one cylinder and scrape it unless the same is done to the other.

Lubrication.

One of the most frequent sources of trouble in twin-cylinder engines is lubrication, and in many instances this has not received the attention which it deserves at the hands of the designers.

With the ordinary type of splash lubrication there is a natural tendency for the rear cylinder to receive considerably more oil than the front. The reason for this can easily be seen from the appended diagram (in which it is taken for granted that there is always a certain amount of oil in the bottom of the crank case). The usual method of combating this error is for the makers to fit a baffle plate to the rear cylinder of such proportions that only a sufficient quantity of lubricant shall reach the cylinder walls. This method is only fairly satisfactory, as unless a large quantity of oil is used the front cylinder is still starved.

The trouble is overcome on Indian motor cycles by pumping oil direct to the rear of the front cylinder. A form of lubrication which is again becoming common is to pump the oil into troughs round the base of the cylinder, into which the pistons dip. This allows the oil to go direct to the pistons, which, of course, need the best lubrication, and also tends to equalise the lubrication to each cylinder.

This type of lubrication is by no means new. We had it in the early types of De Dion single cylinders, but for some reason it seems to have been dropped, and has only recently returned to fashion. It is of great importance that the connecting rods, and more especially the pistons, should be the same in each case, but this is usually attended to by the makers, and in any case it is not a job for the ordinary amateur to undertake.

UBIQUE.

A TRIAL OF THE EXCELSIOR.

A FEW days ago we accepted an invitation to test the hill-climbing powers of a 4½ h.p. single-cylinder Excelsior. Accordingly, a solo machine, fitted with a Sturmey-Archer three-speed gear, and a sidecar machine, fitted with the Roc two-speed, were brought round.

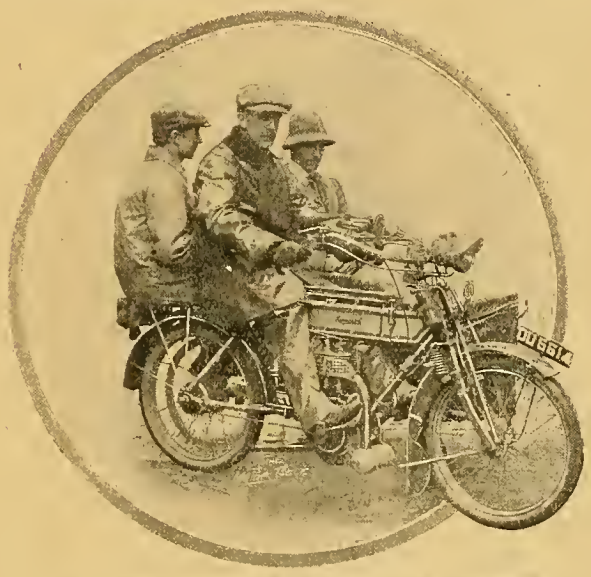
We arranged to go our usual test run to Edge Hill, and thereupon mounted the solo machine, which was fitted with a Lukin automatic carburetter. The engine started at once, and turned over extremely slowly and steadily, showing the presence of plenty of flywheel and good carburation. We slid away, and were in the high gear (4 to 1) in a matter of a few yards. The run to Edge Hill was uneventful, and on arriving at the hill we made a clean ascent on the top gear, the engine never showing a sign of knocking. At the top we waited for the sidecar outfit, which came up in style—so well, in fact, that Mr. Carson, who was piloting it, was confident that he could take three up. This time we moved to Sunrising Hill, and on reaching the bottom slightly reduced the gear to 5⅓ to 1, and straightway turned round and ascended the hill. The high gear was in use right up to the sharp corner, which so reduced the speed that the low gear was put into action.

In Full Touring Trim.

The weight of the machine in full touring trim and with a sidecar was 3 cwt. 2 qrs., which, with the combined weights of the three passengers, brought the total to approximately 7½ cwt.

It is interesting to note, in view of recent discussions, that this fine performance was done with a Binks two-jet carburetter. After the climb had been accomplished we returned to the bottom of the hill, shed our third passenger, and took charge of the sidecar machine ourselves. We were thus enabled to judge of the steady pull and simple control of the machine. The climb was accomplished in fine style, and as we neared the summit the rider of the solo mount rushed past us on top gear.

The run home was uneventful, except for the pouring rain. As a sidecar mount we were delighted with the 4½ h.p. Excelsior, which is capable of a fair turn of speed, and will keep up an average of at least the legal limit or more without showing the slightest sign of overheating.



The 4½ h.p. Excelsior two-speeder as it ascended Sunrising Hill with three passengers.

London-Edinburgh Run: Our Suggestion.

IN our report of this classic event, which is probably the most popular of any in the motor cycle world, we made a suggestion that it might easily, and with advantage, be converted from a mere club run into a test which would be interesting, and, at the same time, of real value to the public, by showing which machines were really worthy of the awards they gained, while the number of gold medal winners would be substantially reduced. Sutton Bank lies so close to the main road that its ascent would make but a very small difference in the distance, while the situation of the roads over Hambleton Hills renders it equally possible for almost as stiff an ascent to be made on the return journey. Anyone well acquainted with the Hambleton Hills district could find a suitable test hill, which, after the 200 miles continuous running from Edinburgh, would be a real proof of the capabilities of the machines and skill of the rider. There would be no necessity to render this valuable addition a speed hill-climb, and it might almost be sufficient to make it a stipulation that every entrant for the outward journey should make a clean ascent of the hill chosen, similarly on the return journey, no credit being given for any speed in excess of twenty miles an hour. It might be urged that the inclusion of two stiff hills might possibly affect the entry list, but, taking into consideration the enormous entry received on the occasion of the last two runs, the M.C.C. could well afford to lose even as many as a couple of dozen.

Too Large an Entry not Desirable.

It would, however, be a far better advertisement for the M.C.C. to run the London to Edinburgh Run as a genuinely severe test of both rider and machine than to attract a huge and almost unwieldy entry and keep the run a mere procession between the English and Scottish capitals over one of the easiest stretches of 400 miles which can be found in the British Isles. Those competitors with whom we have discussed the idea have viewed it in altogether a favourable light, and we most emphatically place the suggestion before the M.C.C. Committee. There are many well-known motor cyclists who are very intimately acquainted with the district in which the Hambleton Hills are situated who would be only too happy to co-operate with the M.C.C. in the selection of a hill, and in lending their assistance if this suggestion be adopted

The Problem of the Automatic Carburetter.

THERE appears to be much misapprehension on the question of carburation, and even "E.M.O." in his interesting article does not seem free from confusion of thought here and there. For instance he says, "We want more air with the engine buzzing on half-throttle on a level road than we do when the engine is pulling comparatively slowly uphill on the same amount of gas."

This has the appearance of a perfectly obvious statement, but why, after all, does the engine require more air under the one condition than the other?

Those of us who pin our faith to the dual-controlled carburetter so habitually speak of the control levers as "air and gas" that we seem to carry the same dual idea into all our thoughts upon the matter.

The whole problem of carburation is to supply to the engine the most perfectly combustible, and consequently efficiently explosive mixture of petrol vapour and air in sufficient quantity under varying conditions.

Perfect Combustion Essential.

Too rich a mixture will result in imperfect combustion, sooting, and loss of power. The giving of "extra air," on the other hand, beyond the limits of perfect combustion has nothing whatever to recommend it. A departure in either direction from the point of "perfect combustion" results in loss of efficiency and other undesirable features.

In the ordinary form of carburetter a jet of given size supplies petrol, and the amount sprayed will vary according to the force of negative pressure in the spraying chamber induced by the suction stroke.

It follows then that, other things being equal, the effect of closing or opening a throttle valve placed between the spraying chamber and the cylinder will always be to reduce or increase, as the case may be, the spraying of petrol from the jet.

The air supply is provided through a constricted vent or "choke tube" surrounding the jet, and which in the usual type of two-lever carburetter is of constant size, and an additional "extra air" vent controlled by the "air" lever.

With the "extra air" closed the spraying of petrol increases with the opening of the throttle until a point is reached when the mixture becomes too rich for combustion at all, and the engine "chokes."

The opening of the extra air serves the double purpose of tending to reduce the spraying of petrol and at the same time providing the necessary air to render the over-rich mixture efficiently combustible.

It is therefore quite possible within certain limits to vary the petrol spray without touching the throttle lever. In fact, at least one automatic carburetter utilises this principle. Correspondingly, closing the "extra air" will increase the spraying of petrol.

Throttle and Air Too Wide Open.

Many manipulators of the two-lever control habitually ride with the throttle needlessly wide open and the "extra-air" still more needlessly wide to render the mixture somewhat inefficient, and then congratulate themselves they are driving well. What they are really doing is giving the engine a large charge of "flabby" gas when a small charge of efficiently combustible gas would do the work infinitely better

The remaining disturbing or compensating factor, if we ignore atmospheric conditions which will usually be fairly constant on a given run, will be engine speed. It will be fairly obvious that increase of engine speed will tend to result in more violent spraying, and *vice versa*.

Now what happens with an ordinary two-lever carburetter under the circumstances which "E.M.O." mentions. "With the engine buzzing along at high speed" under easy conditions little power is required, and consequently the throttle will be closed as far as possible. But with a fairly large jet and choke tube the throttle cannot be closed beyond certain limits or no effective spraying will result.

With the smallest effective throttle opening the high speed resulting from favourable conditions tends to increase the spraying abnormally. The obvious remedy of the dual-control man, since he cannot take as small a charge as is really required, must be "extra air" to maintain a correct mixture, or more probably to reduce its efficiency somewhat, since a smaller charge cannot be taken.

Hill-climbing and Efficient Mixture.

But a hill comes upon which the speed falls off at once, the abnormal spraying ceases, and the mixture is rendered altogether too poor. Now unless the engine is to knock, one of two things must happen. Either the throttle must be opened to stimulate spraying and give a larger and richer charge of gas, or the "extra air" must be reduced. The course will depend upon the steepness of the gradient to be surmounted. The truth is "E.M.O.'s" statement as it stands is an absurdity. If the engine were "pulling on the same amount of gas" it would require the same amount of air to maintain highest efficiency. It is just because it is not getting the "same amount of gas" at a slower speed that the extra air must be reduced.

Now what happens with an efficient automatic carburetter. The Binks two-jet is admirable as an example of efficiency and simplicity. The small choke tube and jet are so small that effective spraying can be obtained with a very tiny throttle-opening. The result is that under favourable conditions the engine will spin along, taking the smallest possible charge of *good* gas. It is running to the very utmost advantage, the small charge of gas giving a gentle explosion, and the cylinder being only partially filled, reducing the retarding effect of compression to a minimum. The engine keeps delightfully cool.

Now comes the hill! As the throttle begins to open on the large jet and choke tube, the engine accelerates and ample power is given for the hill. At full throttle extra air can also be admitted if the speed be very high. As the speed drops on the steepest portion, the extra air can be closed, preserving an efficient mixture. Let the speed drop never so low, the combined effect of the two jets and chokes continues to provide a good mixture.

"E.M.O." prefers "tap twiddling," and granted, if he live upon his machine, it may be an amusing pastime. But for thousands of riders who just want to ride with comfort and certainty the automatic carburetter is "the thing." W.H.B.

THE WATFORD SPEEDOMETER.

THE Watford speedometer is manufactured by Messrs. Nicole, Nielsen and Co., Ltd., 14, Soho Square, W., who manufacture probably the highest class chronometers in the country. Naturally, therefore, the most accurate work is put into these speed-recording instruments. The speedometer works on the centrifugal principle. Fig. 2 shows the main moving parts.

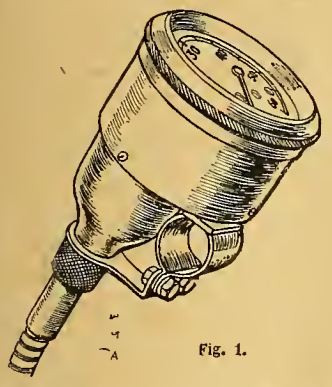


Fig. 1.

To the base of the spindle A is attached a lead ring B, which, owing to centrifugal force, tends to flatten out as the speed is increased. As it does so it pulls down the sleeve C, to which it is attached by means of the rod D, and moves the crank on the threaded quadrant E, which meshes with the spindle attached to the indicator hand. The spring F serves to bring the wheel B back to its original position as the speed decreases. To the indicator hand spindle is attached a small hair spring, the object of which is to keep the teeth on the spindle closely in mesh with those on the toothed quadrant and to avoid backlash. The pinion G meshes with the pinions which drive the mileage and trip recorder.

Worm Drive to the Flexible Shaft.

The latest improvement is in the bracket shown in fig. 3, which is attached to the front spindle. The drive from this portion is by means of a worm, the end of the worm spindle meshing with the key, which is solid with the flexible shaft end shown in fig. 4. The shaft casing is covered in leather so as to prevent the lubricant from oozing out. The shaft comes directly behind the driving gear box and reaches the instrument on the handle-bar with an easy curve, so that steadiness in running and accuracy are assured.

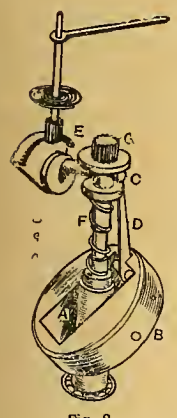


Fig. 2.

The driven shaft in the gear box in fig. 3 is provided with a ball bearing in the end nearest to the gear ring to take any side thrust which may exist, while at the further end is a plain bearing.

As will be seen in fig. 2, the ring governor spindle works on a ball bearing. The upper end is lubricated by means of a coned cap filled with grease, which is not shown in the illustration. We merely mention this to show that the speedometer is as nearly fool proof as possible. The principal bearings are packed with grease before the instruments are sent out, and they need no further attention for twelve months, after which period they should be sent back to the works to be overhauled and lubricated.

A Clear Dial.

The general appearance of the speedometer is particularly pleasing. The figures are clear and the recorder mechanism is particularly good. A great point about the trip is that on the release trigger being pressed the recorder flies back to zero immediately, in whatever position the wheels may be when the push is pressed. In the case of some speedometers the trigger will not release the trip except in a certain position of the gear wheel.

THE MOTOR CYCLE
T.T. and Summer Number
THURSDAY,
June 27th, 1912.

We recently spent a very interesting afternoon at the Watford Works of Messrs. Nicole Nielsen and Co., and saw the manufacture of these speedometers in every phase. The work is most interesting to watch, miniature capstan lathes being used. Everything is made to limit gauge, and, in consequence, the speedometers are extraordinarily accurate, while the workmanship is of the finest.

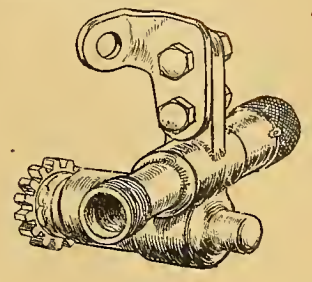




Fig. 3.

We left Watford under the impression that Messrs. Nicole Nielsen's speedometer

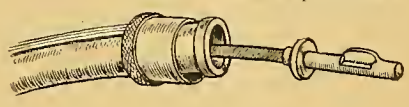


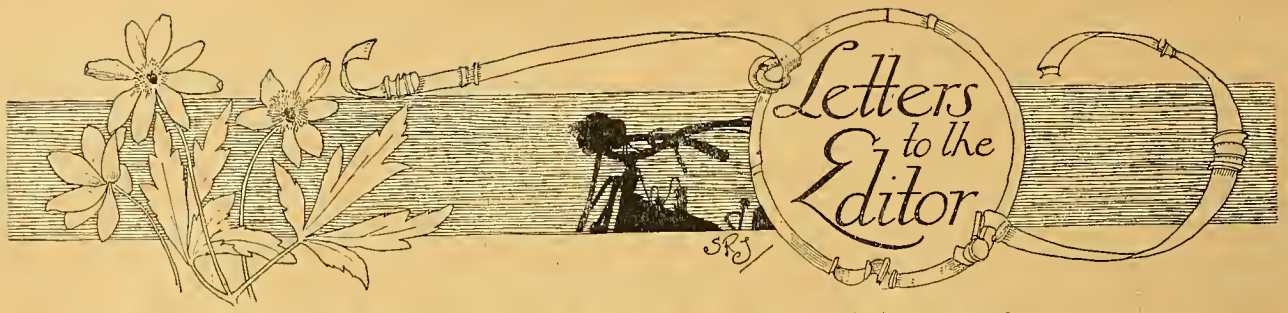
Fig. 4.

is a beautifully made instrument, and we congratulate its manufacturers on the height of perfection to which they have brought it. We have one of these instruments under test with much satisfaction, of which more anon.



AN AMERICAN FOUR-CYLINDER MACHINE.

E. B. Ware has just received delivery of a new four-cylinder air-cooled Pierce motor cycle, to which he has fitted a Gondola sidecar. This machine, which we illustrate above, is highly spoken of in the States, and may be seen in the A.C.U. six days' trials next August.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

The London-Edinburgh Run.

Sir,—I think your idea in including Sutton Bank in the M.C.C. Edinburgh Run rather a good one, and hope in the next year's event the organisers will see their way clear to include this hill. A. C. ROBBINS.

Dangerous Driving.

Sir,—Can you do anything through your excellent paper to put a stop to the absolutely dangerous riding of some motor cyclists in Cheshire? These roads, I must admit, are conducive to fast riding, but when, through the excessive speed of some few, the Chief Constable is compelled to put the police on the look out for all motor cyclists, something ought to be done to put a stop to it.

I have lived in Cheshire for twenty-two years, and have ridden a motor cycle, on and off, since 1903, and have never yet had occasion to come in contact with the police, who, up till the last week or so, have always given motorists, motor cyclists in particular, a very good margin over the limit, provided there was no danger to the public.

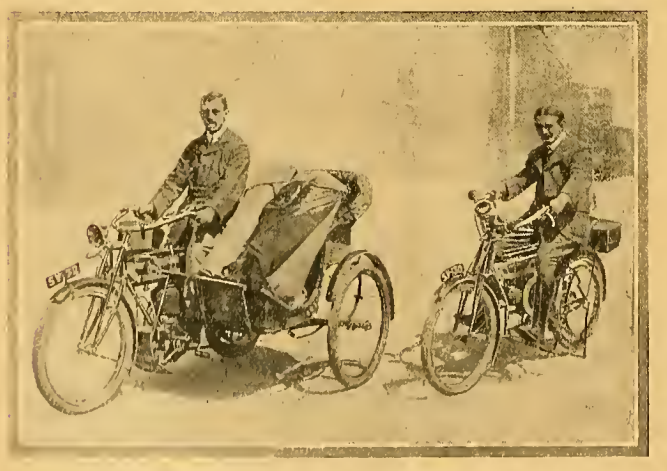
During the Whitsuntide holidays the Chester to Manchester road was a veritable death-trap through motor cyclists tearing round blind corners. Four accidents occurred on this road during Whit week.

WITHIN THE TWENTY-MILE LIMIT.

[We suggest that our correspondent should send the registration number of the offenders to the A.C.U., 89, Pall Mall, S.W.—ED.]

A Collapsable Boat Mounted on a Sidecar.

Sir,—We venture to think that the photograph herewith will be of interest, because it is not every day that a sidecar is employed for carrying collapsable boats.



A collapsable boat used also as a tent, mounted on a sidecar.

The photograph was sent by the purchaser of one of our collapsable boats—he is a member of the Amateur Camping Club and takes the boat (which is fitted so as to make a tent for sleeping in) to Bournemouth and other places, the total weight being 60 lbs. ACCORDIAN BOAT CO.

Air-cooled Engines and Low Temperatures.

Sir,—Your remarks in your issue of April 11th on the above subject should bring forth some interesting experiences.

Personally I have not had any experience with air-cooled engines, at what one might term low temperatures, but my invariable experience in our hottest weather here, often over 100° in the shade, is that air-cooled engines develop more power with a decreased petrol consumption, and run cooler than what they do in cold weather. Overheating I have never experienced even on our hottest days, while on the contrary I have had decided symptoms of this in cold weather with practically all engines I have tried.

This result I used to ascribe to defective carburation, as the air supply had to be cut down, while on the other hand the petrol consumption increased, producing a mixture of a very high calorific value. It is quite probable that at very low temperatures this condition of things might be greatly accentuated and produce a result exactly as Sir Ernest Shackleton experienced. A possible remedy would be the use of a specially distilled very volatile spirit, and in this connection it might be interesting to know the specific gravity of the petrol used by Sir Ernest Shackleton.

Heilbron, O.F.S. CHARLES A. CHEYNE.

Petrol Consumption.

Sir,—I noticed in a recent issue a letter doubting a statement to the effect that a reader can average 110 miles per gallon on his 6 h.p. Zenith. It may interest him to know that I have a 1912 6 h.p. Bat, and with this machine I can average 112 miles per gallon, and the machine will attain a speed of 65 m.p.h. on the level, even with this low consumption of petrol. The carburetter is the latest B. and B. single jet, the gear ratio 3½ to 1, and the jet a No. 31. I have filed the extra air intake to admit more air.

I am prepared to back up my statements if any reader still does not believe this performance possible.

M. CAMPBELL.

Sir,—It is surprising how much ignorance is displayed in the matter of petrol consumption by the average motor cyclist. A reader recently doubted that 110 m.p.g. was possible with a 6 h.p. twin, and asked for information.

I would state, for the benefit of his obviously limited experience, that a clean engine in good tune, a properly adjusted carburetter, and a little knowledge of driving, are practically all the essential points.

I also have owned three singles, an old 3 h.p. N.S.U., which ran 90 m.p.g.; 3½ Kerry Abingdon, 120 m.p.g.; and T.T. Triumph, 110 m.p.g.

The counties in which I averaged these amounts are Surrey, Sussex, and Kent. I have, up to the present time, confined my riding to these counties. It will be distinctly understood that it is simply a question of average, and yet a reader gives as an ordinary example of roads, on which he would like to see me average this amount, a district containing sixteen hills in sixteen miles, and, as he says, "some of them are stiff ones." His idea of what is meant by "average" must be somewhat quaint.

I am sorry I do not now own the 6 h.p. Zenith in question, having invested in an 8 h.p. same make, which, he may be interested to learn, only averaged 25 m.p.g. with sidecar at a recent B.M.C.R.C. meeting; my excuse for this high consumption is that I was lapping regularly at 54



The Strongest Tyre Made.

The 2½in. section of the "Kerry Combination" is built up on a 4-ply canvas foundation, and the 2¼in. on a 3 ply. Thus you get strength where it is most needed—at the bead and in the walls. The steel studs are securely fastened through five plies of canvas, and, with the unique tread, combine to make a perfect non-skid.

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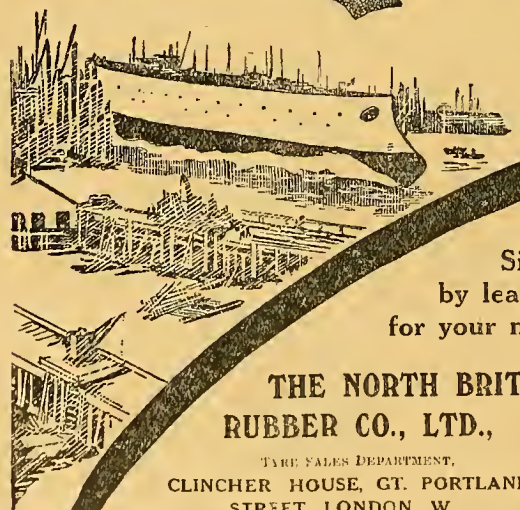
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m.p.h. with 23 stones up), but I know where it is, and have no doubt could borrow it and prove to any reader's complete satisfaction that what I say is true. I understand the present owner can get 90 m.p.g. out of it quite easily.

SYDNEY R. AXFORD.

Sir,—With reference to the letters recently published on petrol consumption, my experience is that the position of the air intake on the carburetter makes a considerable difference in the amount of petrol consumed. If a Triumph is jacked up and the engine got going in a fairly dark room with the door open (and, if possible, sunlight coming in), a fine spray of petrol will be seen coming through the extra air holes on the suction stroke, which loss must be greatly increased when travelling over a bad road surface at any speed. There is no difficulty in proving this, as if the exterior of the carburetter is examined after a day's run, when covered with dust, one can easily detect the mark of the petrol where the dust has been washed away. Manufacturers should give this matter their attention, as I feel convinced that in the great majority of cases this is the cause of the large petrol consumption, and this waste could easily be avoided by a better and more carefully designed carburetter.

VIVIAN BARTON.

[The Triumph Cycle Co. have recently introduced a baffle plate which is claimed to prevent spraying and to increase the mileage per gallon.—ED.]

Needless Skidding Danger at Winchester.

Sir,—With your permission, I should like to caution motor cyclists likely to pass through Winchester against the danger of passing in or out of Jewry Street (the High Street end) owing to side-slip. The road during the daytime is dangerous, owing to the so-called watering of the surface. It is a half-inch of grease, difficult at times to walk on. I myself came off recently in front of a van. The driver happened to pull up at once, or much damage would have been done. It is quite common to see cycles and motors sliding from one side to the other. In fact, the place is a veritable trap.

CITIZEN.

A Difficult and Tortuous Climb.

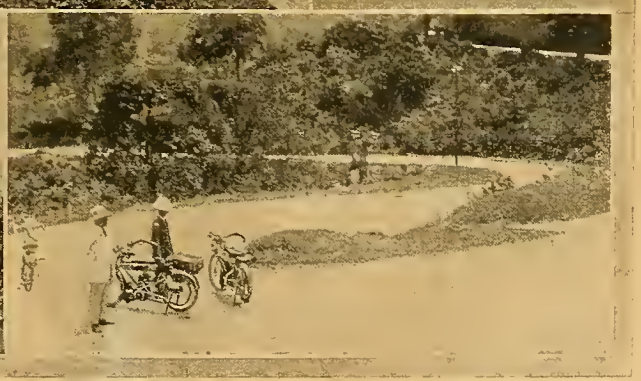
Sir,—I enclose three photographs of the hill that the Ceylon M.C.C. used for their hill-climb last year. There is about three miles of it, and the gradient is pretty bad in places—but the corners are worse (as will be seen in the third illustration). The machines are a Bradbury, Premier, and twin Humber on a trip from Kandy to Colombo.

E. M. LEY.

Colombo, Ceylon.







(1) Kadugannawa Pass (see letter signed E. M. Ley). One of the bad hairpin corners on the hill which the Ceylon M.C.C. used for their hill-climb last year.

(2) The road passing through the rock, twenty yards beyond which is another hairpin bend. The natives under the arch have been shifting stones and boulders off the road—the result of a landslide the night before.

(3) Another view of the pass showing the "S" bends. The road may be seen again in the top right hand corner.

Should Ladies Race?

Sir,—Would you allow a mere man to reply to the letter of Miss May Walker? There is some truth in what she says, but much misapprehension. For instance, she asks, when speaking of the appearance of lady competitors, "can they be worse than some of the men?" Good heavens! I sincerely hope not. A man is made to be knocked about, but a woman's mission is to look beautiful, and I must say that many of them fulfil their mission admirably. In these days of suffragettes and coal strikes it is difficult to steer a middle course and please all parties. For instance, a man says he does not like to see a woman fall off a motor cycle at 40 m.p.h. and hurt herself badly, and he is told to stay at home and wash the dishes. Another gives up his place in a boat so that women can be saved—is this chivalry? Oh, dear no—it is simply "the usual thing." Perhaps Miss Walker does not know that it is part of Mr. Stiggins's duties to report hill-climbs, and is it fair to sneer at him because he does not like to see members of what used to be known as the gentler sex indulging in dangerous pursuits? I should recommend a strenuous course of Rugby football to all aspirants for honours in the hill-climbing world. With reference to men's garments, I am entirely in agreement; but are they meant to be lady-like? By the way, how many sheets go to the ream?

ACTON HILL.

Sir.—Regarding your leaderette "Should Ladies Race?" I am glad that your remarks apply chiefly to hill-climbs on hills on which there are dangerous corners, because this matter can be easily dealt with without robbing us of our chance of sport. Both the Manufacturers' Union and, I understand, the A.C.U. are setting themselves against such hills, and when the new "live" committee of the Union issues permits for hill-climbs, we may safely take it that if they are safe for male riders they will be equally so for us.

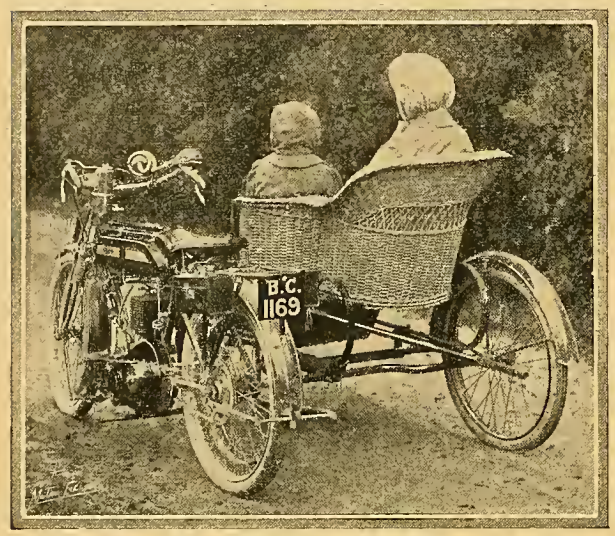
This being so, there will be no need for any special intervention of the Union on our behalf until, that is, we make a point of falling off regularly at every hill-climb, such as certain male riders do with impunity and without apparently any fear of being banned for ever from competing in a similar event.

Having had my share of tumbles during some four years of riding, I quite agree with Miss Hind's remarks that if ladies did not feel that they had the nerve they would not send in their entries. For you must remember that, as a sex, we have the greatest objection to laying ourselves open to ridicule.

(MISS) R. HAMMETT.

A Novel Sidecar Body.

Sir,—Enclosed you will find a photograph of a sidecar body, which I had made from my own design at the E.B.O. Motor Works, 286, Humberstone Road, Leicester. It is made to seat my wife and child so that the child faces the breeze. I have run it nearly a thousand miles, and find it a complete success, so have had the design registered (No. 599,507). The advantages I claim are a comfortable seat for



A special sidecar with child's seat fitted to an Ebo-Precision machine. (See letter accompanying.)

the child facing the breeze and scenery, and if on a long journey the child can lean its head on mother's lap and sleep sheltered by the apron which covers both thoroughly. The weight is over the axle, and a well balanced car is the result. As I am always interested in anything new I see in your valuable paper, which I have never missed reading for over seven years, I thought it might be of interest to fellow readers. C. H. INGAMELLS.

The Problem of the Automatic Carburetter.

Sir,—I have read the various opinions expressed in your columns with interest. I have now done nearly 2,000 miles on my Chater-Lea cyclecar, fitted with the Binks two jet instrument, and if the results are not perfect they are near enough for practical purposes. You get a "tick round" to over 40 m.p.h. by simply pulling the lever and the absolute response that the makers claim.

I have had over 30,000 miles of two lever carburetters, but should not dream of fitting one after the results I get from my single lever two jet instrument.

I have no interest in the carburetter in any way, except as a satisfied amateur user. P. H. STEELE.

Sir,—I have been keenly interested in your recent articles and correspondents' letters *re* the problem of the automatic carburetter, and have perused the recent letters on the same with great interest. I agree with the principle laid down by Mr. Binks *re* the multiple-jet carburetter, insomuch as I have had experience of the tests of different makes of carburetters in my capacity as engineer. These comprised several well-known makes, and the deductions from these tests led to the same conclusion as that arrived at by Mr. Binks, and the result was the adoption of a two-jet carburetter, the main jet being opened at a pre-determined velocity, and in conjunction with a dashpot to obviate a common fault, viz., "hunting." This type, I may add, was found very successful and economical for motor lorry work. I have personally carried out a series of tests with a well-known make, altered, on a twin-cylinder motor cycle engine on the road, and can get the engine to run with retarded spark (coil and dry battery) at a walking pace, with a quick acceleration when suddenly opening the throttle. I have, unfortunately, not had the opportunity of trying one of Mr. Binks's carburetters, but I must say that, in my opinion, he seems to be on the right track, especially with his "De Luxe" paraffin carburetter, and I thoroughly agree with the majority of the points in his letter. It has often occurred to me that the makers of the Polyrhoë carburetter should endeavour to put on the market a type suitable for motor cycles, as this instrument is an excellent appliance, and has given splendid results; in fact, I have made a modified form of such for trials, and have had excellent results, although I hold the opinion that it is possible to dispense with a float chamber, and am at present engaged on such a "gadget." In conclusion, I would advise any of your readers who are particularly interested in the science of carburation to peruse the excellent articles on this subject which appeared in the *Practical Engineer*, dated October 20th, 1911, and it will give them food for thought, especially as regards the curves and formulæ given on page 486, which justify Mr. Binks's and my own ideas on this particular subject. In conclusion I must add the usual disclaimer, that I am in no way connected or interested in any particular type other than as an interested reader in search of information on this subject. FRANCIS H. STEERS.

The Power Required for Sidecar Work.

Sir,—Under the above heading you have recently published some very interesting correspondence, and one or two of the writers have expressed a desire to hear other riders' opinions. Well, I may as well say at once that I am quite satisfied with 3½ h.p. for sidecar work. I covered 7,000 miles in 1911, with a 1910 Triumph, and with the exception of a few hundred miles this was all sidecar work. Of course, I have occasionally felt a longing for a little more power, but taking it all round I am well satisfied with what I have, and would rather be without any extra complications, for the sake of romping up some freak hill. Naturally, I avoid hills that I know my machine would not be capable of taking the sidecar up, as much as possible, but there are times when one cannot do this, and at the worst it only means a little vigorous exercise in running beside the machine, sometimes with passenger seated, and sometimes not. My best run last year was one that included a climb of 1,000 feet, in 3½ miles, and I tackled it with a hot engine, and did not have to dismount. Of course I am well aware that I did not ascend in true competition style, but I was quite satisfied with the performance. My machine with all on, on that day, including a camp stove, weighed 5 cwt. 1 qr. I am riding a 1912 machine of the same make, and getting equally as good service from it. I have had it two months, and have now covered 2,000 miles.

I certainly shall feel obliged to the makers of my machine when they fit a change-speed gear as standard, as I am confident that I shall get even better running still. I enclose a photograph of the complete outfit, taken at Richmond, Yorks., on Good Friday. H.W.J.



H. W. J.'s 1912 Triumph and sidecar referred to on this page.

"THE NEW SIN"

UNDERTYRING.

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Continental

MOTOR CYCLE TYRES

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The heavy up-to-date passenger machines of high horse-power, which are frequently called upon to do the work of a small car quickly eat up the average Motor cycle Tyre.

In our

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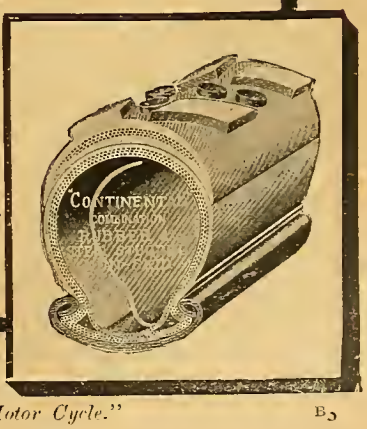
we offer a cover specially designed to withstand the terrific strain that the cover on the driving wheel is subjected to. Made in size 26 x 2¼, 2½, and 3in. (3in. tyre fits 2½in. rim).

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The SPEEDY

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Holder of the THREE BRITISH RECORDS. FLYING MILE. FLYING KILO. FLYING 5 MILE.

Singer Motor Cycle Successes,

Date.	Event.	Competitor.	Position.	Power of Machine.
March 9th	Oxford University Hill-climb	Mr. G. K. Pippet	1st	2¼ h.p.
,, 9th	,, ,, ,,	,, G. K. Pippet	2nd	2¼ h.p.
,, 16th	Essex Open Hill-climb	,, Rex Mundy	2nd	2¼ h.p.
,, 16th	,, ,,	,, W. A. Jacobs	3rd	2¼ h.p.
,, 23rd	Herts County Open Trial	,, Rex Mundy	Non-stop	2¼ h.p.
April 6th	Leicester and District M.C.C.	,, H. Petty	1st	2¼ h.p.
,, 6th	,, ,, ,,	,, H. Petty	1st	3½ h.p.
,, 6th	,, ,, ,,	,, H. Petty	Judge Cup	2¼ h.p.
,, 6th	Harrogate Hill-climb	,, Mackay	3rd	2¼ h.p.
,, 6th	French Reliability Trial, A.C.C. of France	,, Rex Mundy	1st	2¾ h.p.
,, 8th	Brigsteer Hill-climb	,, J. Cocker	2nd	2¼ h.p.
,, 8th	,, ,,	,, Jones	3rd	2¼ h.p.
,, 8th	Brooklands Meeting	,, Stanley	2nd	2½ h.p.
,, 8th	,, ,,	,, Stanley	1st	3½ h.p.
,, 8th	Fleet and District M.C.C.	Lieut. Smith	2nd	3½ h.p.
,, 13th	Oxford M.C.C. Hill-climb	Mr. J. Cocker	2nd	2¼ h.p.
,, 13th	,, ,, ,,	,, J. Cocker	1st	2¼ h.p.
,, 13th	,, ,,	,, J. Cocker	1st	2¼ h.p.
,, 13th	Liverpool Trial in N.W.	,, Rex Mundy	Non-stop	3½ h.p.
,, 13th	,, ,, ,,	,, F. C. Jones	,,	2¼ h.p.
,, 13th	,, ,, ,,	,, C. Murdock	,,	3½ h.p.
,, 13th	,, ,, ,,	,, V. Horsman	,,	3½ h.p.
,, 20th	Brooklands Time Trials, Flying Kilometre	,, Stanley	1st	2½ h.p.
,, 20th	,, ,, ,, ,,	,, Ayres	2nd	2¼ h.p.
,, 20th	Brooklands Time Trials, Flying Mile	,, Stanley	1st	3½ h.p.
,, 20th	,, ,, ,, ,,	,, Ayres	2nd	2¼ h.p.
,, 20th	Brooklands Three-lap Scratch Race	,, Stanley	2nd	3½ h.p.
,, 20th	Bristol Open Hill-climb	,, F. C. Clement	2nd	2¼ h.p.
,, 20th	Bristol M.C.C. Hill-climb	,, J. Cocker	2nd	2¼ h.p.
,, 20th	,, ,,	,, J. Cocker	1st	2¼ h.p.
,, 21st	Essex Motor Club	,, A. P. Howard	Silver Medal	2¼ h.p.
,, 24th	A.C.U. Re-run Trial	,, Rootes	Non-stop	3½ h.p.
,, 25th	Canterbury and District M.C.C.	,, Pavillet	1st	2¼ h.p.
,, 25th	,, ,, ,,	,, Pavillet	1st	2¼ h.p.
,, 25th	,, ,, ,,	,, Pavillet	1st	2¼ h.p.
,, 27th	Crossgates and District M.C.C.	,, S. Kirk	3rd	2¼ h.p.
,, 27th	Birmingham M.C. Hill-climb	,, J. J. Woodgate	1st	2¼ h.p.
,, 27th	,, ,, ,,	,, J. J. Woodgate	3rd	4 h.p.
,, 27th	Streatham and District	,, Rex Mundy	1st	2¼ h.p.

June 1st: G.E. Stanley wins the All-comers' Race at Brook-

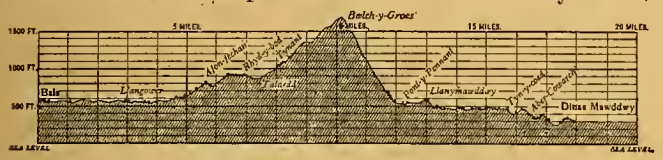
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Irish Stockists—Dublin: Mr. C. E. Jacob, 184, Great Brunswick Street. Belfast: Mr. C. E. Jaco

Dinas Mawddwy Climbed.

Sir,—Referring to the article in last week's issue of *The Motor Cycle* about the attempts on Dinas Mawddwy Hill by some Coventry motor cyclists, I note it is stated that Newsome's successful climb was "the first authenticated climb" of this famous hill.

I beg to say, however, that last Good Friday my friend, M. Glasgow, and myself both made clean ascents of the hill at the first attempt from about two hundred yards



From Gall & Inglis's Contour Road Book.

Contour section of Bwlch-y-Groes, commonly known as Dinas Mawddwy.

below the hairpin bend. My friend's machine was a 1911 standard Triumph, and my own a 1912 F.E. model of the same make, and our gears were both about 6 to 1. Both our climbs were witnessed by M. G. Rollo, who was on a 6 h.p. Bat-Jap, and would not attempt the hill owing to the effect the bad surface would have on his tyres.

I may say that Mr. Glasgow and myself had both tried the hill last October, he on the same machine and I on a 1910 Triumph, but were unsuccessful owing in his case to his not being able to get his gear lower than 5½ to 1, and in mine to my machine having done about 8,000 miles and being in very bad tune. A. STEWART LLOYD.

Hub and Countershaft Gears.

Sir,—Referring to the article in your last issue by "Ixion" on the subject of gears, as manufacturers of a counter-shaft gear we must absolutely disagree with the opinion of your contributor that the most satisfactory gear of the future for motor cycles will be in the rear hub. In our opinion and experience, the following are a few points on which the counter-shaft gear is far preferable:

1. Situated immediately behind the engine, the weight of the gear box is in the centre of the machine, and does not interfere with the comfortable running, nor increase the tendency to side-slip.

2. The counter-shaft gear and clutch running at a higher speed than the back wheel must be under less stress, and clutch surfaces give far greater efficiency.

3. The space at the disposal of designers is not restricted, and all parts may be made with an ample margin of safety against breakages.

4. It is the experience of all users of counter-shaft gears that they are absolutely reliable. This is, of course, due to the great simplicity in construction.

On the other side of the picture, we submit several points in which hub gears are as yet not perfect.

1. The restricted space in which they have to be carried entails the lightest possible form of construction, with consequent occasional breakages.

2. The clutch working at slow speed is usually very little over its work; consequenty clutch slip is not rare.

3. Extra weight in the back wheel must slow the machine, and always interferes with the comfort of riding, owing to the increase in road vibration from the back wheel. A heavy back is also productive of side-slip.

JAMES CYCLE CO., LTD.

Why not Paraffin?

Sir,—Owing to the recent coal strike the price of petrol was greatly increased, and although the strike ceased some time ago the price shows little sign of reduction, and appears to be artificially kept up.

It seems to me that in future motor cyclists and other petrol users are likely to be at the mercy of the petrol manufacturers and merchants, and, judging from present experiences, are likely to be very unfairly treated. This, in time, must reflect on the motor industry and do great harm.

With regard to the carburetters used on present machines, there seems to be great competition among the manufacturers, and although one might be a little better than another, all the well-known makes appear to be satisfactory. The competition appears to be proceeding on the lines of better distribution of the spray, and making it more automatic; but the getting of the last ounce of work out of petrol will in the end only appeal to racing men.

The present time appears to be favourable for manufacturers turning their attention to the designing of a simpler carburetter to use paraffin only. This should be a commercial success, would be a great boon, and cut down the running expenses to one half or a third what they are at present, to say nothing about the keeping of petrol down to a reasonable price.

I believe paraffin with a high flash-point is now the cheapest variety, and, therefore, paraffin for motors would be cheaper than the best now used for lighting. STAR.

Inconsiderate Behaviour.

Sir,—During the recent Easter London-Land's End M.C.C. run, I loaned a box of spare chain parts to the driver of a sidecar outfit (conspicuous for its noise), whose chain had broken, leaving them stranded in the middle of Dartmoor. I have written three letters to these people, asking for its return, but to date have neither received the spares or even a reply to my letters. One expects different treatment from anyone, leave alone two such well-known men. The lack of these spares has indirectly cost me nearly 30s. You will, I think, agree such behaviour is very improper. H.P.B.

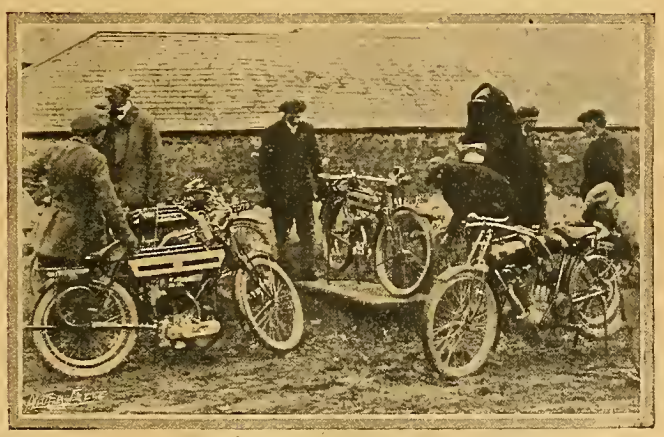
Road Conditions between Kew and Richmond.

Sir,—I have read "Injured Ancient's" letter *re* the above, and can fully sympathise with him. I have had to use this road four or five times during the last month or so, and, in my opinion, it is really dangerous; the road itself is bad enough, but the bed of the tramline is worse. I was not quite so unfortunate as your correspondent, but I had more shaking than I cared about. It is a pity it is not a criminal offence for authorities to allow main roads to get into such a state. DISGUSTED.

Furniture Vans—and Cricket.

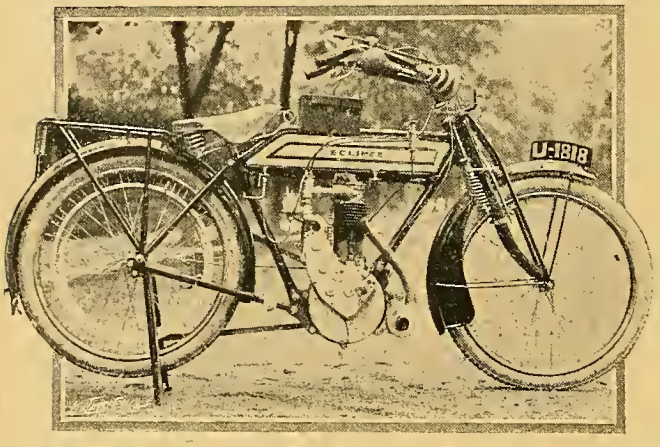
Sir,—I shall be glad if you will kindly state in your columns that the Scout Manœuvres against the Coventry and Warwickshire Motor Club were won by the Scouts, and not by the Coventry Motor Club, as at first reported. The rules laid down were that five motorists must succeed in reaching my offices between the hours of three and five o'clock, and that no other vehicle should be made use of by competitors. It was reported to me on the day following the Manœuvres that Messrs. Rupert May, Blockley, and one other motor cyclist had made use of a furniture van, in which they were concealed, and by this means succeeded in entering Rugby. I have written to the gentlemen in question several times, but am unable to obtain an answer. Definite proof has now been supplied to me by Mr. Edwards, Railway Terrace, Rugby, who provided the horses and van. The other three competitors reached Rugby in accordance with the rules, and are entitled to every congratulation on their success, in view of the elaborate precaution that we took to safeguard one hundred square miles over which operations took place.

I. B. HART-DAVIES.



SATURDAY'S ANGLO-SCOTTISH HILL-CLIMB.
The weighing-in at a farmyard near Lanton Hill, Jedburgh. W. F. Newsome (Triumph) on the scales.

A NEW ENGINE WITH DECOMPRESSOR.



The complete Eclipse motor cycle which is fitted with a new 3½ h.p. engine with overhead inlet valve.

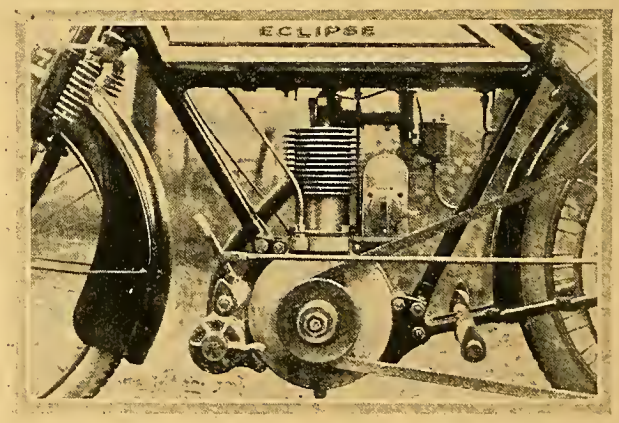
IF you imagine your motor cycle starts easily and runs slowly it would be advisable, before being absolutely satisfied on the point, for you to compare its capabilities with those of a new machine which is being manufactured by the firm of Job Day and Sons, Ltd., engineers, Leeds. A representative of this journal had the pleasure of meeting Mr. H. A. Smith (the designer of the machine in question) the other day, and was initiated into the various novel features of the engine, for it is the engine which the firm in question intend to supply.

Upon the machine being taken out of its shed, and without doing anything more to it than turn on the petrol and give a very slight push when wheeling it along, the engine commenced to fire and to continue firing quite regularly at a very slow walking pace. It was, of course, an easy matter to get comfortably into the saddle, and by releasing the half compression device (which is worked by the same handle-bar lever as the exhaust lifter) to get immediately into full swing. The engine dimensions are 85 × 88 mm.

As made at present the engine is not intended for racing, and although it has an overhead mechanical inlet valve, the compression ratio is somewhat lower than standard practice, being about 75 lbs. per square inch. However, owing to the low compression ratio it is found possible to employ very light connecting rod, gudgeon pin and piston (13 ozs. in all), and it is partly due to these light reciprocating parts that the engine proves capable of fast speeds.

The overhead inlet valve, which is worked by the usual style of tappet rod and rocking arm, is capable of being removed from the cylinder in an easy manner.—in fact by the undoing of one large nut the valve and its seating come away *en bloc*. The exhaust valve, which gives an effective opening of approximately one-tenth of the piston area, is of the usual type.

An unusual feature is the system of lubrication. Feeding by means of a Best and Lloyd pump, the oil flows into a well, in which the lip of the piston



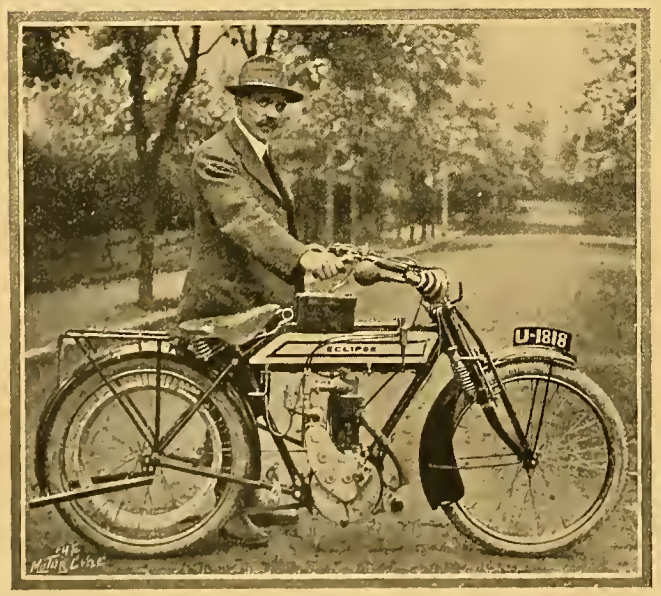
Pulley side of the new engine built by Job Day and Sons.

dips at the end of each downward stroke, thereby raising a supply of oil at each upward stroke and depositing it on the cylinder walls, and so lubricating the cylinder most efficiently. One pumpful just fills the well, and the piston, in addition to lubricating the cylinder, scatters the required quantity into the crank case to lubricate the bearings and big end, but never in such quantity as to cause friction between flywheels and crank case; thus again free running is obtained.

The sparking plug is located in the centre of the cylinder. The silencer is neatly fitted with a cut-out, the whole being so get-at-able that it is only necessary to undo one nut to take it all to pieces.

The cylinder is fitted with the usual type of radiating fins, and the pattern has been so designed that uniformity of the metal allows for equal expansion and contraction due to heat.

The ignition is by a Bosch magneto driven by a train of gear wheels, and the carburetter is a B. and B. The motor bicycle frame, which is made by Edlin Sons, Ltd., is fitted with Druid spring forks and Edlin's patent detachable carrier and mudguard. The complete machine weighs, without oil or petrol, 168 lbs.



The Eclipse motor cycle with its designer, Mr. H. A. Smith.

MILITARY MOTOR CYCLING NOTES.

Another Successful Mobilisation. Seven Riders reach Maidenhead exact to time.

By "CELERITER."



Some of the motor cyclists who took part in the second mobilisation test getting ready to leave Maidenhead. Captain A. H. Trapmann distributing postcards to be delivered by the riders when they arrive at their destination.

WITHOUT any shadow of doubt, and in spite of the heavy rains experienced, Sunday's time scheduled mobilisation at Maidenhead was an unqualified success, and it is quite evident that these tests are growing rapidly in favour, perhaps on account of their originality and real sporting interest, but also on account of the invaluable statistics they afford.

The Daventry mobilisation, held on April 27th, proved little beyond the fact that motor cyclists can cover great distances in very quick time, and that the Legion of Cyclists had built up an organisation which enabled them to call up the keen motor cyclists throughout the United Kingdom at a few hours' notice. Sunday's test proved something more, and afforded a very welcome change to the eternal round of reliability tests and hill-climbing events, of which some enthusiasts are beginning to get tired.

Military Value.

The military value of Sunday's test is enormous, and opens out quite a new range of possibilities for the military employment of the motor cycle, for the results now offer concrete statistics of what the motor cycle, when intelligently handled, can perform. The Army authorities know to a nicety what the cavalryman, the gunner, and the infantryman can accomplish in the minute, the hour, and the day. A few experts know equally well what can be expected of the push-cyclist. We now know that the motor cyclist can be counted upon to cover any given number of miles according to a scheduled speed; that scheduled speed we did not possess before, and it will be very welcome news to the General Staff of the Army.

The Actual Performances.

As everybody knows, the competitors in Sunday's event were asked to ride to a certain specified schedule, in order that they might arrive at Maidenhead Railway Station on the stroke of one o'clock. This schedule varied between 20 and 30 m.p.h., according to the distance the competitors lived from the rendezvous. The following gives a list of entries as made up on Saturday night: London, 29; Herts., Beds., Middlesex, and Bucks., 12; Kent, Surrey, Sussex, and Hants, 19; East Anglia, 22; South Wales, 11; Cheshire, 11; Midlands, 27; Durham, 4; Derby, 5; Yorkshire, 9, Lancashire, 6; Somerset and Devon, 4; total, 159. Of these, sixty-seven put in an appearance before 3 p.m., the rest probably falling out or withdrawing owing to the weather conditions or to some accident at the early start which made it hopeless to regain lost time.

The prize offered by the proprietors of *The Motor Cycle* for the best performance on schedule time is awarded to S. Sawer and F. Dover, Sheffield (both on 3½ Premiers), 162 miles; and the next five in order of merit are: 2, A. P. Isard, Nottingham (3½ Triumph), 123 miles; 3, H. O. Springfield, Shaftesbury (2¾ Douglas), 105 miles; 4, R. S. Pullen, Handsworth (2½ A.J.S.), 97 miles; 5, G. Butteau, Cambridge (3½ Triumph), 76 miles; 6, W. Webster, Woodford Green (3½ Rudge), 53 miles.

All of the above arrived exactly on the stroke of one o'clock, riding exactly to their schedules, and the two winners were only determined by the mileage accomplished.

The furthest distance was Sergt. W. T. Tanfield and G. S. Bowman on a 6 Rex-Jap with sidecar, who came from Hull (220 miles), and arrived 29m. late; and perhaps the best performance was that by the three men who came from Winsford, in Cheshire, arriving 7½m. late, owing to having to get change to pay the toll at Cookham Bridge, the distance covered being 177 miles

Future Events.

In view of the great success achieved by Sunday's mobilisation, the executive of the *Legion of Cyclists* have decided to hold a novel test of some kind every month, but in future entries will be restricted to members of the Legion. The next event will be held in the vicinity of Nottingham, and particulars will be given in *The Motor Cycle* during the next week or so. Those motor cyclists who do not already belong to the *Legion*, but who are prepared to serve their country in the event of invasion, are invited to communicate direct with the Hon. Sec., 128, Jermyn Street, London, W., enclosing a stamped addressed postcard together with a penny stamp, or to purchase a copy of the first number of the *Territorial Monthly and Legion News*, which is to be published on the 15th inst.

OAKAMOOR INTER-CLUB HILL-CLIMB.



(1) The brothers F. G. and Cyril Smith, both riding 2¼ h.p. Douglas machines, on the starting line. The latter won.

(2) David Bolton, who accomplished fastest time on his 3½ h.p. Rudge, about to follow A. F. W. Greeves (Triumph).

Oakamoor, North Staffs, was again the scene of a motor cycle hill-climb on Saturday last. This event was the fourth annual inter-club contest for the silver challenge cup presented by Mr. F. A. Bolton, president of the Derbyshire and North Staffs Club, who organised the contest, which was confined to their members and those of the Mid-Staffs A.C., the Derby and District M.C.C., and the North Staffs M.C.C.

Star Bank, on the Weaver Hills, above Oakamoor, is a splendid incline if one could use its entire length, but the 1,460 yards of it which comprised Saturday's course is hardly a sufficient test for present day motor cycles. Commencing with a stiff climb, which continues to the first corner, the hill for a little distance runs almost level, entering upon a further incline at the second bend to the finish, the gradient not being more than 1 in 11. From a spectator's point of view, however, it could hardly be improved, three parts of the course being in view of the finishing line. The competitors, handicapped according to their theoretical time, were despatched up the hill in pairs. The basis used to ascertain theoretical time was not disclosed beforehand, but it certainly provided some peculiar results. The cycle event attracted some thirty entries, but on the whole the contest was more of a sporting event than a very serious test. Results:

SEMI-FINAL ROUND.

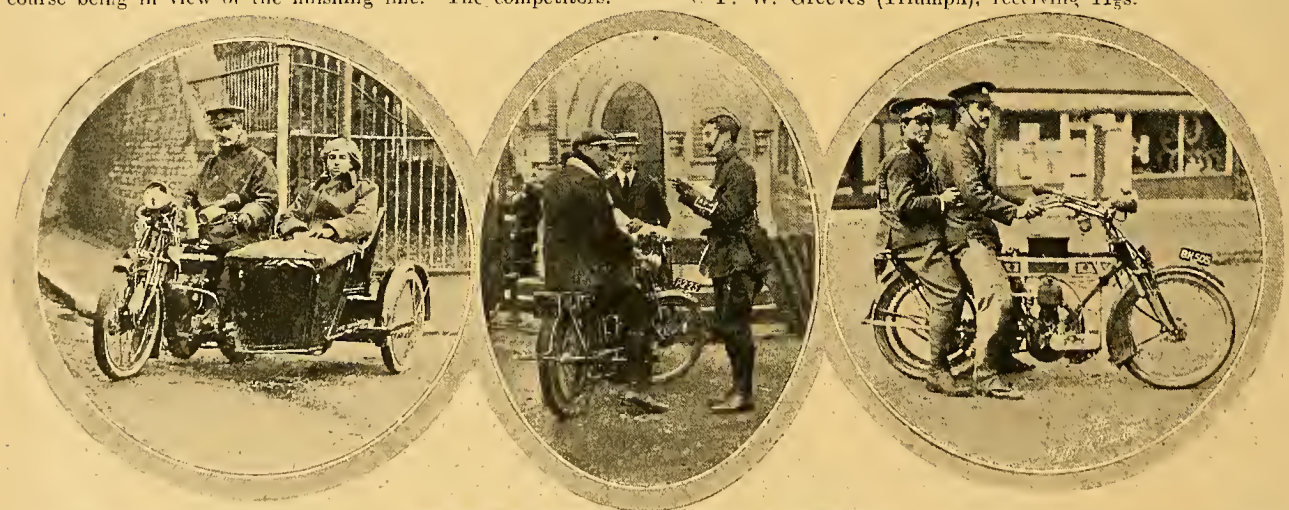
1. Cyril Smith (Douglas), receiving 44⅘s.
2. A. F. W. Greeves (Triumph).

1. A. Ainsworth (Rudge), receiving 2⅗s.
2. P. H. Openshaw (Triumph).

FINAL.

1. Cyril Smith (Douglas), receiving 40s.
2. A. Ainsworth (Rudge).

Fastest time.—D. C. Bolton (Rudge), 62⅗s., but lost to F. W. Greeves (Triumph), receiving 11⅘s.



THE SECOND MOBILISATION TEST AT MAIDENHEAD.

(1) Sergeant Tanfield (Rex-Jap and sidecar), who came from Hull, and who was the longest distance man. He started at 1 a.m. (2) Captain Trapmann examining the cards of the riders. (3) Private Birdseye (3½ h.p. Bradbury) with Private Elias, who rode the whole way from Lowestoft on the carrier. They started at 6.11 a.m.

SELECTED COMPETITIONS TO RECEIVE MANUFACTURERS' SUPPORT.

The Cycle and Motor Cycle Manufacturers' and Traders' Union has issued a circular to the leading motor cycle clubs to the effect that, for obvious reasons, the motor cycle section of the Union has decided that the number of open events promoted by clubs all over the country are so numerous as to make it impossible for them to support all. They have therefore decided to limit their entries and support in the matter of prizes to ten events, amongst which ten are included the following competitions: A.C.U. Six Days Trials and Autumn One Day Trial, M.C.C. London-Exeter run, Coventry and Warwickshire M.C. open event, Scottish Six Days Trials, Birmingham M.C.C. reliability trial, Bradford M.C.C. reliability trial, Bristol M.C.C. reliability trial, and the Irish End-to-end run organised by the Motor Cycle Union of Ireland (Ulster Centre). Not only will the members of the Manufacturers' Union support the above in the matter of entries—and it may be here observed that the Union includes the big majority of the firms engaged in the motor cycle trade—but it will support the contests by contributions out of its collective funds to the prize lists.

SIX DAYS' TRIALS ROUTES.

1,000 MILES THROUGH DEVON AND SOMERSET.

THE knowledge that this year's six days' trials are to embrace the notorious hills and inimitable scenery of Somerset and Devon has already aroused exceptional interest and enthusiasm. The arrangements for the trials are well in hand, and the course has been practically mapped out.

An exceptional amount of careful and skilful corner work will be required, as this hilly district abounds in a multiplicity of hairpin and horseshoe turnings.

We understand that the following daily routes have been mapped out, though minor alterations may probably be made at a later date:

First Day, Monday, August 12th, 177 Miles.

On the first day of the trial competitors will have a delightful run through some of the finest scenery in South Devon.

Leaving Taunton, Blagdon is the first point of interest to be reached, where a steep hill with a hairpin bend has to be negotiated.

Avoiding Exeter, the men will proceed through Dawlish and Teignmouth to Shaldon, where another bad hill will have to be tackled.

Passing on through Torquay, Paignton, Totnes, and Plymouth, Tavistock is reached. From here a steep hill leads to Two Bridges and Moreton-Hampstead, then another bad hill up to Dunsford, and the ancient city of Exeter looms in sight.

This ran from Plymouth to Exeter is very hilly throughout, running as it does right over Dartmoor. A straight run home follows through Wellington.

Second Day, Tuesday, August 13th, 166 Miles.

This is a very stiff ride, and includes Minehead, Porlock, Lynmouth, Lynton, and then across to Taunton.

It was originally intended to return to Taunton across Exmoor *viâ* Simonsbath, but the organisers think that the road over the moors is too rough, and an alternative route will be selected, probably passing through Ilfracombe.

During this day's run the famous Porlock and Lynton hills will be ascended, and Beggar's Roost Hill may also be included.

Third Day, Wednesday, August 14th, 158½ Miles.

Taunton, Barnstaple, Ilfracombe, Parracombe, Lynmouth, Porlock, and Taunton.

The above route includes Parracombe and Countisbury Hill out of Lynmouth.

Fourth Day, Thursday, August 15th, Distance Unknown.

This day's journey will consist of morning and afternoon trips from Taunton, returning to Taunton for lunch.

The route will not be disclosed before the day, but will be very carefully arrowed, and competitors will ride by the arrows only.

These two runs will include some of the local tit-bits in the form of severe surprise climbs. The minimum time in which the two sections must be ridden will be based on an average speed of 15 m.p.h.

Fifth Day, Friday, August 16th, 187¾ Miles.

Taunton, Cothelstone, Bridgwater, Axbridge, Cheddar Gorge, Dundery, Bristol, Gloucester, Birdlip, Cirencester, Bath, Wells, and Taunton.

In addition to Birdlip there is a stiff hill at Cothelstone, which is used for local hill-climbs, and this will probably be one of the timed hills.

The long climb up Cheddar Gorge will need care on account of the S turnings.

Sixth Day, Saturday, August 17th, 188½ or 151¾ Miles.

This day's run is not yet decided. It may be as below, or it may be the alternative route—No. 7.

Taunton, Shaftesbury, Salisbury, Southampton, Amesbury, Stonehenge, Frome, Glastonbury, and Taunton.

This is a fairly easy run, as there are no severe hills.

Alternative Route (shown dotted), 151¾ Miles.

Taunton, Chard, Crewkerne, Dorchester, Weymouth, Wareham, Bournemouth, Blandford, Sherborne, Yeovil, Ilminster, and Taunton This is also a fairly easy day's run.

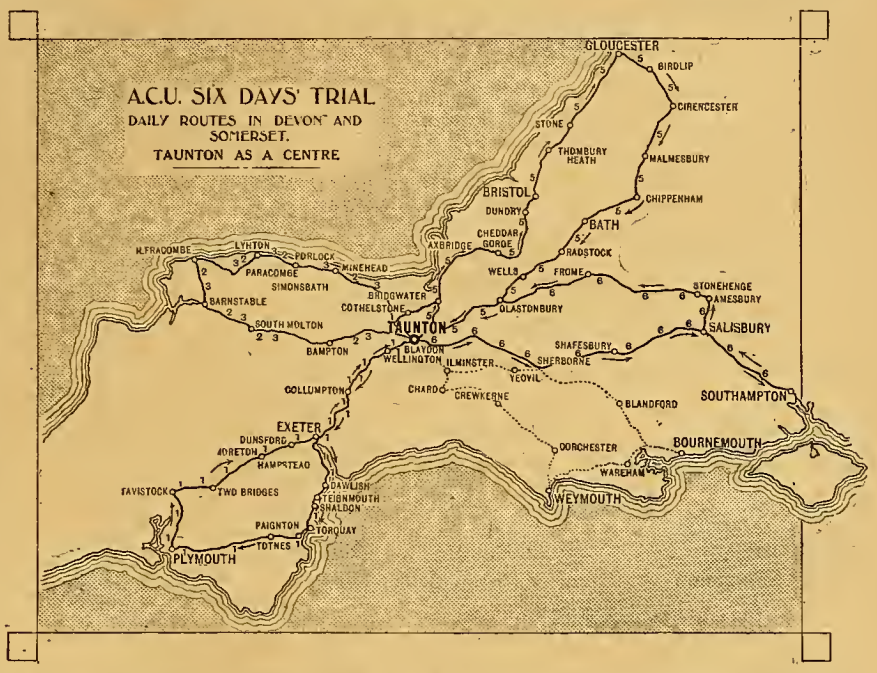
The following are a few notes regarding this year's trials.

In running to schedule time competitors may be ten minutes early or late, but one minute in excess of ten minutes either way they lose ten marks, and after that one mark per minute. Five marks will be deducted for every tyre changed.

Competitors who feel so disposed may make use of the lunch interval for adjustments by curtailing the time taken for the meal.

The arrangements for accommodation at the local hotels have been rather difficult, but are now practically completed.

Competitors will have to line up at 7.30 each morning, and a quarter of an hour only will be allowed for adjustments, viz., from 7.45 to 8 a.m. At 8 a.m. the men will be started.



STREATHAM M.C.C. TRIAL FOR THE ORDE CUP.

In heavy rain, eleven members started in the above trial last Saturday, the route being through Riverhead, Maidstone, Canterbury, Sarre, Canterbury, Charing (lunch), Maidstone, Riverhead, Crystal Palace, and thence down to the Crown and Sceptre Hotel, Streatham Hill, the starting and finishing point.

Results (subject to confirmation by the committee).—Orde Cup: W. Pratt (3½ P. and M.), non-stop. Gold medal: Rex G. Mundy (3½ T.T. Singer), one stop (sooted plug). Silver medal: H. B. Willoughby (3½ Rudge), one stop (sooted plug). Bronze medals: S. T. Tessier (8 Bat and sc.), one stop; W. L. Barrett (8 Bat and sc.), non-stop; C. J. Feeny (3½ Triumph), one stop (belt fastener); J. Bateson (3½ L.M.C.), one stop (puncture); W. R. Sweeting (6 Bat and sc.), non-stop; A. G. Daw (3½ T.T. Triumph), one stop (sooted plug); and W. O. Oldman (8 Bat and sc.), one stop (puncture).

Anglo-Scottish Inter-team Hill-climb.

ENGLISHMEN'S NARROW WIN.

THIS event took place at Lanton Hill on Saturday. The hill is about three-fourths of a mile long, and although there are two bends they are so gradual as to be negligible. The gradient is not very steep, being about 1 in 8 to 10 on an average; it is, however, a long climb of steady gradient. The two teams were well matched, as the total differences of 7⅕s. will show. In the singles Barnes and Lindsay tied for fastest time, but the A.C.U. had a gain of 13s. in this class, which lead the Edinburgh club reduced to 7⅕s. by winning the twin and sidecar classes. Among the twins, Jamieson on an 8 h.p. Jamieson-Jap, and Reed on an 8 h.p. Dot were the fastest. Barnes had his revenge, however, in the sidecar team climb, and made fastest time quite easily. The Edinburgh team performed most consistently, although their twins were not so fast as the A.C.U. twins. The inter-team event was followed by an open hill-climb.

AUTO CYCLE UNION TEAM.

Single-cylinders.

Rider and machine.	Bore and stroke.	Time.	Figure of merit.
F. W. Barnes (3½ Zenith)	90×77½	53.2	4083
W. F. Newsome (3½ Triumph)	85×88	55.8	3256
S. Crawley (3½ Triumph)	85×88	56.6	3038
H. Berwick (3½ New Hudson)	85×88	62.	2887
T. Silver (3½ Quadrant)	85×88	81.	2390
		308.6	15654
Twin-cylinders.			
C. W. Jamieson (8 Jamieson-Jap)	90×77½	43.2	2840
F. W. Barnes (8 Zenith)	90×77½	47.8	2681
H. Reed (8 Dot)	90×77½	46.2	2652
W. E. Cook (5 A.S.L.)	70×80	66.6	2434
		203.8	10607
Sidecars.			
H. Berwick (3½ New Hudson)	85×88	92.4	3113
F. W. Barnes (8 Zenith)	90×77½	60.	3105
		152.4	6218
Totals		664.8	32479

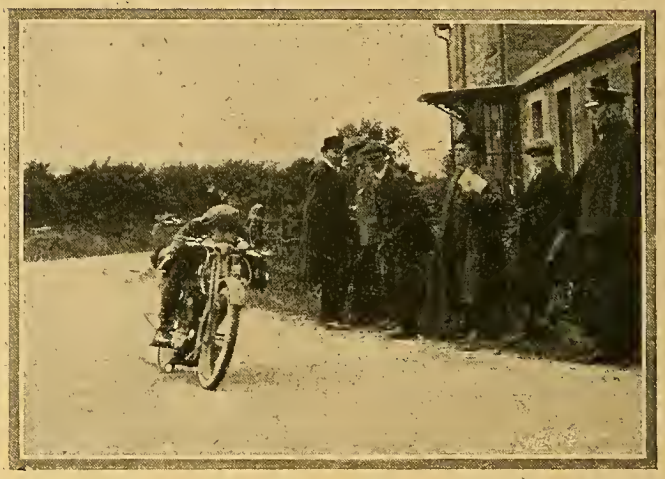
EDINBURGH AND DISTRICT MOTOR CLUB TEAM.

Single-cylinders.

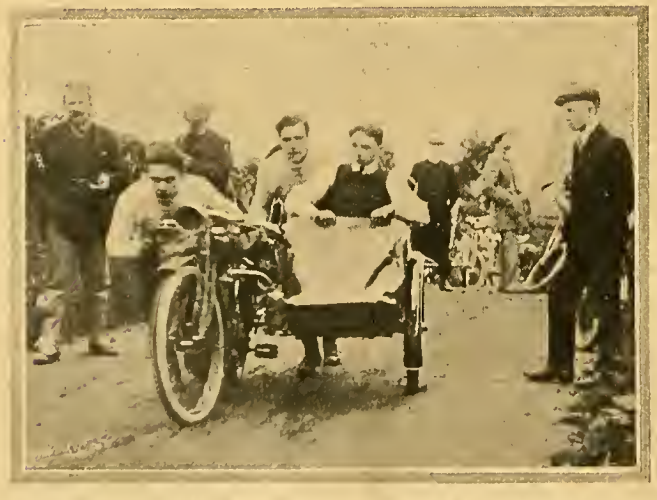
A. J. C. Lindsay (3½ Rover)	85×88	53.2	3784
O. G. Braid (3½ Norton)	80×100	59.	3328
A. B. Lindsay (3½ Triumph)	85×88	62.6	3210
R. H. Mouat (3½ Rudge)	85×88	68.	3066
A. F. Downie (3½ Ariel)	85×85	79.	2649
		321.8	16037
Twin-cylinders.			
A. J. C. Lindsay (5 Matchless)	76×85	51.4	3061
S. J. K. Thomson (8 Bat)	85×85	52.8	2666
J. R. Alexander (7 Indian)	82×93	48.2	2537
A. H. Alexander (7 Indian)	82×93	50.	2425
		202.4	10689
Sidecars.			
A. J. C. Lindsay 5 Matchless)	76×85	75.	2812
A. H. Alexander (7 Indian)	82×93	72.8	2254
		147.8	5066
Totals		672.	31792

ABSTRACT OF RESULTS.

	A.C.U. Edinburgh. Time.		A.C.U. Edinburgh. Formula.	
Single-cylinders	308.6	321.8	15654	16037
Twin-cylinders	203.8	202.4	10607	10689
Sidecars	152.4	147.8	6218	5066
Totals	664.8	672.	32479	31792



A. J. C. Lindsay, Scotland (Matchless), full speed at one of the bends.



A. H. Alexander, Scotland (Indian sidecar), starting in the passenger class.

RESULTS OF THE OPEN HILL-CLIMB.

An open event followed the team hill-climb, the results of which are appended:

CLASS I.—Engines under 500 c.c.

	Time.	Fig. of merit.
1. A. J. C. Lindsay (2¾ New Hudson)	77.4	4,285
2. P. Weatherilt (3½ Zenith)	54.0	3,824
3. W. F. Newsome (3½ Triumph)	53.8	3,414

CLASS II.—Engines over 500 c.c.

1. A. J. C. Lindsay (5-6 Matchless)	51.8	3,045
2. H. Reed (8 Dot)	44.2	2,808
3. C. W. Jamieson (8 Jamieson)	44.8	2,709

CLASS III.—Unlimited scratch.

1. C. W. Jamieson (8 Jamieson)	42.2
2. H. Reed (8 Dot)	43.0
3. J. R. Alexander (7 Indian)	49.0

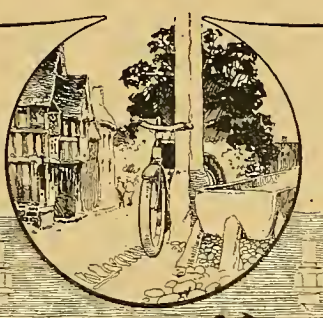
ARTHUR MOORHOUSE MEMORIAL FUND.

The following additional donations have been received to the above fund:

Sutton Coldfield A.C.	£2	2	0
R. Waygood and Co., Ltd.	5	5	0
S. F. Garrett, Cards 306 and 307	5	3	6
S. F. Garrett, Card 309	2	17	0
Staff of Hendee Mfg. Co., Springfield, U.S.A.	40	15	5
Per Mrs. Jefferson and Miss Berend—			
Derby and District M.C.C., Cards 206 and 207	2	17	0

The total amount to date is £260 11s. 5d.

M.C.C. TEAM TRIAL.



ANOTHER RECORD ENTRY FOR "THE MOTOR CYCLE" CUP CONTEST.

ON Saturday next, the 15th inst., the ninth inter-club team trial for *The Motor Cycle* 50 guinea challenge cup is to be held, starting from Daventry, Northants, at 1 p.m. prompt. Again there is a record entry for this popular competition, which carries with it the motor cycle club championship. Headquarters are at the Wheatsheaf Hotel, and competitors must report themselves at noon. There are twenty-six teams, and the chosen riders, with their starting times, are given hereunder:

DERBY AND DISTRICT M.C.C. (holders).

Starting Time. H. M. S.	No.	Rider and Machine.
1 0 0 ..	1.	A. Ainsworth (3½ Rudge)
1 0 20 ..	2.	A. B. Bennett (6 Brough)
1 0 40 ..	3.	H. Baker (3½ Triumph)
1 1 0 ..	4.	E. Rossell (3½ Bradbury)
1 1 20 ..	5.	E. V. Clarke (3½ Bradbury)
1 1 40 ..	6.	H. S. Sewell (8 Campion-Jap sc.)

Reserves: W. H. Orme (3½ Rudge) and H. Lee (3½ Rudge)

BEDFORD AND DISTRICT M.C.C.

1 2 0 ..	11.	S. Crawley (3½ Triumph)
1 2 20 ..	12.	E. Murkett (3½ B.S.A.)
1 2 40 ..	13.	S. Savage (3½ Triumph)
1 3 0 ..	14.	H. J. Woods (3½ Triumph)
1 3 20 ..	15.	F. Waring (2¾ Enfield)
1 3 40 ..	16.	L. Kell (4 New Hudson sc.)

Reserves: G. Crawley (3½ Triumph) and A. Lister (3½ Triumph sc.)

BIRMINGHAM M.C.C.

1 4 0 ..	21.	R. W. Duke (3½ Zenith-Gradua)
1 4 20 ..	22.	A. D. Arter (3½ James)
1 4 40 ..	23.	R. V. C. Brook (3 water-cooled Precision)
1 5 0 ..	24.	H. J. Cox (2¾ Forward)
1 5 20 ..	25.	W. H. Eggleton (3½ New Hudson)
1 5 40 ..	26.	Dr. B. Fawssett (8 Chater-Lea-Jap sc.)

Reserves: H. Newey (3½ Ariel) and F. Southam (6 Zenith sc.)

BRISTOL B. AND M.C.

1 6 0 ..	31.	W. W. Moore (Humber)
1 6 20 ..	32.	H. R. Bishop (A.J.S.)
1 6 40 ..	33.	A. F. Margoschis (Ivy-Precision)
1 7 0 ..	34.	S. J. Fair (B.S.A. or A.J.S.)
1 7 20 ..	35.	L. E. Scammell (Rex or B.S.A.)
1 7 40 ..	36.	F. Bevan (Rex sc.)

Reserves: A. J. Whitcombe (Willway), E. J. Prosser (Rex Sidette), and A. B. Danks (A.J.S. sc.)

BRISTOL M.C.C.

1 8 0 ..	41.	F. C. Wasley (2¾ Douglas)
1 8 20 ..	42.	P. Phillips (2¾ Douglas)
1 8 40 ..	43.	E. Kickham (2¾ Douglas)
1 9 0 ..	44.	Eli Clark (2¾ Douglas)
1 9 20 ..	45.	F. P. Davies (3½ Rudge)
1 9 40 ..	46.	W. W. Douglas (8 Williamson sc.)

Reserves: J. B. Kellar (3½ B.S.A.) and P. Grout (4½ Quadrant).

COVENTRY AND WARWICKSHIRE M.C.

1 10 0	51.	A. Elson (3½ Singer)
1 10 20	52.	W. F. Newsome (3½ Triumph)
1 10 40	53.	A. N. Barrett (3½ Rudge)
1 11 0 ..	54.	S. Wright (3½ Humber)
1 11 20 ..	55.	G. Smith (3½ Rover)
1 11 40	56.	H. Williamson (8 Williamson sc.)

Reserves: D. Elson (3½ Triumph) and E. A. Gorton (6 Rex Sidette).

ESSEX M.C.C.

1 12 0 ..	61.	G. T. Gray (3½ Rudge)
1 12 20 ..	62.	W. Cooper (3½ Bradbury)
1 12 40 ..	63.	H. C. Hemy (3½ Service)
1 13 0 ..	64.	J. A. Campbell (3½ Rudge)
1 13 20 ..	65.	A. P. Howard (2½ Singer)
1 13 40 ..	66.	A. Hill (7 Indian sc.)

Reserves: D. S. Parsons (6 Rex Sidette) and K. S. Kapadia (6 Rex-Jap sc.)

HERTS COUNTY AUTO AND AERO CLUB.

Starting Time. H. M. S.	No.	Rider and Machine.
1 14 0 ..	71.	E. A. Colliver (3½ Zenith)
1 14 20 ..	72.	E. Jarvis (3½ Triumph)
1 14 40 ..	73.	N. Gutteridge (3½ Triumph)
1 15 0 ..	74.	Maurice Down (7 Indian)
1 15 20 ..	75.	— Nott (3½ Ivy-Precision)
1 15 40 ..	76.	B. T. Rice Pyle (8 Bat sc.)

Reserves: A. H. Colliver (3½ Zenith) and E. S. Lee (3½ Rudge).

LEICESTER AND DISTRICT M.C.C.

1 16 0 ..	81.	A. L. Barker (3½ Singer)
1 16 20 ..	82.	E. Folwell (3½ B.S.A.)
1 16 40 ..	83.	E. Nedham (3½ Campion-Jap)
1 17 0 ..	84.	— Yates (3½ Rudge)
1 17 20 ..	85.	Mrs. Simpson (3½ Rudge)
1 17 40 ..	86.	F. S. Bowley (7 Indian sc.)

Reserves: R. Waiawright (3½ Campion-Jap) and Bowerman (3 Ebo).

LIVERPOOL A.C.C.

1 18 0 ..	91.	N. Brown (7 Indian)
1 18 20 ..	92.	W. Heaton (A.J.S.)
1 18 40 ..	93.	C. Hobbs (Humber)
1 19 0 ..	94.	J. H. Fox (3½ Rudge)
1 19 20 ..	95.	S. W. Phillpott (Humber)
1 19 40 ..	96.	P. P. Syvret (Rex sc.)

Reserves: C. L. Scott (3½ Rudge) and M. Rimmer (3½ Zenith).

LUTON AND SOUTH BEDS. M.C.C.

1 20 0 ..	101.	S. W. Brown (3½ Bradbury)
1 20 20 ..	102.	G. Boae (3½ Triumph)
1 20 40 ..	103.	C. Dickenson (3½ Rudge)
1 21 0 ..	104.	R. P. Terry (3½ New Hudson)
1 21 20 ..	105.	F. R. Child (3½ New Hudson)
1 21 40 ..	106.	F. Mussell (5 Rex sc.)

Reserves: E. S. Godfrey (3½ New Hudson) and R. C. Deacon (3½ Rudge).

MOTOR CYCLING CLUB.

1 22 0 ..	111.	W. Pratt (3½ P. and M.)
1 22 20 ..	112.	H. Karslake (3½ Rover)
1 22 40 ..	113.	E. Pond (3½ Rudge)
1 23 0 ..	114.	R. M. Brice (3½ Brown)
1 23 20 ..	115.	P. Moffatt (2¾ Douglas)
1 23 40 ..	116.	W. Chater-Lea (7 Chater-Lea sc.)

Reserves: P. H. Beotley (3½ Triumph) and L. A. Baddeley (6 Baddeley).

MERSEY M.C.

1 24 0 ..	121.	F. Rees (3½ Rudge)
1 24 20 ..	122.	T. Moore (3½ Triumph)
1 24 40 ..	123.	F. C. Jones (3½ Bradbury)
1 25 0 ..	124.	T. Heaton (2½ Singer)
1 25 20 ..	125.	C. W. Samuels (3½ Ariel)
1 25 40 ..	126.	W. E. Smith (6 Zenith sc.)

Reserves: A. Shaw (3½ Rudge) and A. A. Jaffa (8 Zenith sc.)

NORFOLK M.C.C.

1 26 0 ..	131.	A. Adcock (5-6 F.N.)
1 26 20 ..	132.	S. G. Allen (3½ Triumph)
1 26 40 ..	133.	R. G. Attwood (5-6 F.N.)
1 27 0 ..	134.	G. Boswell (3½ Ariel)
1 27 20 ..	135.	C. Duberly (3½ Ariel)
1 27 40 ..	136.	J. Boddy (8 Bat sc.)

Reserves: R. Walker (4 Scott sc.), Dr. V. H. Blake (2¾ Anglican), and E. M. Wood (3 N.S.U.)

NORTHAMPTONSHIRE M.C.C.

1 28 0 ..	141.	A. E. Catt (3½ Triumph)
1 28 20 ..	142.	W. Barratt (3½ Rudge)
1 28 40 ..	143.	W. Lees (3½ Triumph)
1 29 0 ..	144.	H. H. Saddington (3½ James)
1 29 20 ..	145.	C. H. Jolley (3½ Triumph)
2 29 40 ..	146.	D. Barratt (8 Zenith sc.)

Reserves: C. Harris (3½ Triumph) and A. Powell (8 Matchless).

NORTH-WEST LONDON M.C.C.

1 32 0 ..	161.	G. H. Hollis (2¾ Douglas)
1 32 20 ..	162.	E. Rose (3½ P. and M.)
1 32 40 ..	163.	Glyn Rowden (3½ Triumph)
1 33 0 ..	164.	H. H. Berlandina (2¾ Douglas)
1 33 20 ..	165.	W. Cooper (3½ Bradbury)
1 33 40 ..	166.	E. W. Ashworth (8 Chater-Lea sc.)

Reserves: A. J. Dreydel (5 Ivy-Precision sc.) and H. J. Pooley (3½ Premier).

NORTH MIDDLESEX M.C.C.

1 30 0 ..	151.	G. L. Fletcher (2¾ Douglas)
1 30 20 ..	152.	C. Q. Roberts (3½ Rover)

Starting Time. H. M. S.	No.	Rider and Machine.
1 30 40 ..	153.	D. H. Noble (3½ Rover)
1 31 0 ..	154.	H. C. Mills (3½ Premier)
1 31 20 ..	155.	P. Daugerfield (3½ Premier)
1 31 40 ..	156.	F. Pither (6 Enfield sc.)

Reserves: H. E. Davison (3½ Kerry-Abiogdon) and E. C. Jarvis (3½ Triumph).

NORWICH AND DISTRICT M.C.C.

1 34 0 ..	171.	H. Chapman (3½ Triumph)
1 34 20 ..	172.	A. Lincoln (3½ Triumph)
1 34 40 ..	173.	F. Brighty (3 J.A.P.)
1 35 0 ..	174.	A. Everard (3½ Triumph)
1 35 20 ..	175.	G. Pope (3½ Triumph)
1 35 40 ..	176.	C. Clarcey (3½ Triumph sc.)

Reserves: J. Body (8 Bat sc.) and H. Brown (3½ Rudge).

NOTTINGHAMSHIRE AND DISTRICT M.C.C.

1 36 0 ..	181.	N. O. Soresby (3½ Rudge)
1 36 20 ..	182.	J. Farnsworth (3½ Rover)
1 36 40 ..	183.	C. R. Smith (4½ C.C.R.)
1 37 0 ..	184.	J. Richards (3½ Sun)
1 37 20 ..	185.	J. R. Sylvester (3½ New Hudson)
1 37 40 ..	186.	A. E. Lole (8 Campion-Jap sc.)

Reserves: R. A. Dawson (4 Bradbury) and G. W. Spencer (3½ Rover).

OXFORD M.C.C.

1 38 0 ..	191.	H. G. Hill (3½ Bradbury)
1 38 20 ..	192.	W. A. Mathews (3½ Triumph)
1 38 40 ..	193.	G. F. Cooper (3½ Triumph)
1 39 0 ..	194.	H. Askew (3½ Triumph)
1 39 20 ..	195.	H. G. R. Sligo (5-6 Clyno sc.)
1 39 40 ..	196.	R. C. Davis (8 Chater-Lea sc.)

Reserves: H. A. Beard, R. A. Bishop, and J. F. Salter.

SHEFFIELD AND HALLAMSHIRE M.C.C.

1 40 0 ..	201.	J. A. Stacey (3½ Rudge)
1 40 20 ..	202.	J. Haslam (6 Zenith)
1 40 40 ..	203.	S. Sawer (3½ Premier)
1 41 0 ..	204.	F. Durant (3½ Norton)
1 41 20 ..	205.	F. Dover (3½ Premier)
1 41 40 ..	206.	M. Neill (8 Zenith sc.)

Reserves: P. Wragg (4½ Excelsior sc.) and J. Ardern (3½ Premier).

SOUTH BIRMINGHAM M.C.C.

1 42 0 ..	211.	J. H. Percox (3½ Allday)
1 42 20 ..	212.	L. Poole (3½ B.S.A.)
1 42 40 ..	213.	S. A. Rowlandson (3½ Rudge)
1 43 0 ..	214.	L. Bees (3½ L.M.C.)
1 43 20 ..	215.	J. J. Woodgate (4 Singer)
1 43 40 ..	216.	T. W. Atkin (6 Enfield sc.)

Reserves: W. Bayliss (3½ New Hudson sc.) and E. H. Allday (3½ Allday).

STREATHAM AND DISTRICT M.C.C.

1 44 0 ..	221.	
1 44 20 ..	222.	
1 44 40 ..	223.	
1 45 0 ..	224.	
1 45 20 ..	225.	
1 45 40 ..	226.	

SUTTON COLDFIELD AND MID-WARWICKSHIRE A.C.

1 46 0 ..	231.	Seymour Smith (3½ Norton)
1 46 20 ..	232.	R. Holloway (3½ Premier)
1 46 40 ..	233.	W. H. Sheldon (3½ Regal-Precision)
1 47 0 ..	234.	J. H. Slaughter (3½ L.M.C.)
1 47 20 ..	235.	T. Pollock (James sc.)
1 47 40 ..	236.	F. Whitworth (6 Enfield sc.)

Reserves: J. St John (Quadrant) and L. Newey (Levis).

WALTHAMSTOW M.C.C.

1 48 0 ..	241.	J. H. Kerr (3½ N.S.U.)
1 48 20 ..	242.	F. W. Applebee (2¾ Centaur)
1 48 40 ..	243.	A. E. Uffleman (6 Rex-Jap)
1 49 0 ..	244.	A. G. Peppercorn (3½ Bradbury)
1 49 20 ..	245.	F. A. Applebee (3½ Scott)
1 49 40 ..	246.	G. West (A.C. Sociable)

Reserve: W. Wilson.

WOLVERHAMPTON M.C.C.

1 50 0 ..	251.	T. H. Haddock (2½ A.J.S.)
1 50 20 ..	252.	Reg. Tooks (3½ Rudge)
1 50 40 ..	253.	C. Williams (3½ Zenith)
1 51 0 ..	254.	J. H. Wedge (3½ Rudge)
1 51 20 ..	255.	J. T. Ireland (3½ Ireland)
1 51 40 ..	256.	A. J. Stevens (5 A.J.S. sc.)

Reserves: C. Boyes (2½ A.J.S.) and G. Hill (3½ Rudge).

CURRENT CHAT



TIME TO LIGHT LAMPS.

June 13th	... ...	9.15 p.m.
,, 15th	... ...	9.16 ,,
,, 17th	... ...	9.17 ,,
,, 19th	... ...	9.18 ,,

Practising for the T.T.

Practising over the course in the Isle of Man commences on Wednesday next, the 19th inst., from 5 to 7 a.m. The last day for practising is Thursday, June 27th, the day before the Junior T.T. race.

Latest T.T. Entries.

Late entries for the Senior T.T. race include W. L. T. Rhys and Percy Butler on Triumphs. In the Junior event, M. Stoessel will ride an Alcyon entered by Gentil et Cié., and P. W. Owen has entered a Forward.

English-Dutch Trial.

Further news in connection with the Dutch international trial will appear next week. Two of the chosen reserves find it impossible to accompany the teams for various reasons, and as it is desirable that there are two reserves in each class, the entrants with the highest number of votes outside the teams will be chosen.

Noted Hills in the Six Days' Trials.

Among the hills which will be included in the A.C.U. Six Days' Trial, which will be held from August 12th to 17th inclusive, are the following: Birdlip, Beggar's Roost, Blagdon, Cheddar Gorge, a hill near Dunsford (Exeter), Lynton, Countisbury, Moreton Hampstead, Porlock, Shaldon, and Two Bridges. The positions of most are well known. The hill at Blagdon is near Taunton, and the one at Shaldon is between Torquay and Teignmouth.

Italian Grand Prix.

On the 16th inst. the Societá Sportiva la Torino, 3, Via Cuneo, Turin, will hold a motor cycle race called the Grand Prix de Turin over a sixty-two miles course, embracing Orbassano, Bruino, and Piossasco.

The First Sidecar up Dinas Mawddwy.

In response to the query in our last issue, "Who will be the first sidecarist to take a passenger up Bwlch-y-Groes?" H. A. Collier advises us that he will make an attempt with his Matchless sidecar after the T.T. races. Perhaps, meanwhile, other sidecarists may be tempted to try their luck. At any rate, the Coventry and Warwickshire Motor Club can take credit for having focussed attention on this Welsh terror, which is almost as bad as Honister Pass.

SPECIAL FEATURES.

THE SIX DAYS' TRIALS COURSE.
NEW MODELS.
THE MOBILISATION TEST.
THE PROBLEM OF THE AUTOMATIC CARBURETTER.

Original.

A 2¾ h.p. Douglas will be represented in the Senior T.T. Race, the Colmore Depot, Birmingham, having decided to enter S. L. Bailey, the Australian, for both events.

This Issue.

Photographs of the Anglo-Scottish hill-climb, also the second mobilisation test, appear exclusively in *The Motor Cycle* to-day. Besides other special features the first details and map of the Six Days' Trials course are included, also a description of a new model—the Eclipse. *The Motor Cycle* is the only journal to give a complete record of doings in the motor cycling world, several pages being regularly devoted to important club competitions throughout the country.

Zenith Cup.



On Saturday next, at the Brooklands Automobile Racing Club meeting, a race for Zenith solo and sidecar machines is included. Zenith Motors, Ltd., have offered a silver cup to the winner of this event, which we illustrate. The seventeen entrants are given on page 659.



Competitors in the Streatham and District M.C. competition for the Julian Orde Cup to Canterbury and back on Saturday last. In the foreground may be seen W. O. Oldman (Bat-Jap-Canoelet), who was the holder of the cup (see page 653.)

A Sign of the Times.

The Sewage Committee of the Bradford City Council have decided to purchase a motor-cycle for the use of the resident engineer (Mr. Wontner-Smith) at the Esholt Sewage Works, at an estimated cost of £75.

Motor Cyclists for the Manœuvres.

The A.C.U. has been invited by the War Office to forward the names of motor cyclists anxious to take part in the manœuvres, and also for the cavalry divisional training previous to manœuvres. Applicants should apply to the secretary, 89 Pall Mall, S.W.

The High Price of Petrol.

At the recent meeting at the R.A.C., called to discuss the high price of petrol at present prevailing, it was decided, on the proposition of Mr. S. F. Edge, to form a committee of the R.A.C. and the A.A. and M.U. and other important motoring bodies to decide the best method to adopt. The A.C.U. has been invited to send two delegates.

Imports and Exports of Motor Cycles.

The imports and exports of motor cycles for the month and five months ended May 31st for the last three years are given in the following tables:

IMPORTS.

	Month ended May 31st. 1910.	1911.	1912.
Motor cycles—	£4,916	£3,935	£3,224
Parts thereof—	£3,581	£7,228	£9,486
Total	£8,497	£11,163	£12,710

	Five months ended May 31st. 1910.	1911.	1912.
Motor cycles—	£20,585	£22,555	£21,025
Parts thereof—	£23,729	£29,269	£42,406
Total	£44,314	£51,824	£63,431

BRITISH EXPORTS.

	Month ended May 31st. 1910.	1911.	1912.
Motor cycles—	£7,138	£17,520	£35,957
Parts thereof—	£2,357	£5,186	£16,500
Total	£9,495	£22,706	£52,457

	Five months ended May 31st. 1910.	1911.	1912.
Motor cycles—	£36,160	£82,470	£172,196
Parts thereof—	£15,437	£26,662	£64,309
Total	£51,597	£109,132	£236,505

It will be seen the British exports still maintain their steady increase, as the total value of exports for the month of May this year is over double the value of the same month last year and over five times the amount of the previous year, while for the five months ended May 31st, 1911, the value of the exports was £236,505. This, as will be seen, is over twice the amount for the corresponding period in 1911, and over four times the amount for 1910

FUTURE EVENTS

June 4 and 15.—Dublin M.C.C. Open 24 Hours' Reliability Trial.
„ 15.—M.C.C. TEAM TRIAL FOR "THE MOTOR CYCLE" CHALLENGE CUP.
„ 28.—JUNIOR TOURIST TROPHY RACE.
July 1.—SENIOR TOURIST TROPHY RACE.
„ 6.—Dublin M.C.C. Open Hill-climb
„ 15.—Irish Open End-to-end Reliability Trial.
„ 20.—B.M.C.R.C. Race Meeting.

Disembarkment of Machines at Douglas.

The Douglas Corporation has arranged a fixed scale of charges for the porters unloading or loading motor cycles on the quays. The charges are 6d. per porter for each machine, or if the porter is assisting the owner of the machine, 9d. Formerly these men charged exorbitant prices for their services.

Another Case Dismissed

L. N. Palmer, of Tooting, was, on the 3rd inst., summoned for exceeding the 10 m.p.h. speed limit in Leatherhead. Defendant stated that he stopped at the corner just before the trap, and the road being slightly uphill it was impossible for his cyclecar to have attained the alleged speed in the time, as the design of the transmission made it impossible for him to pick up speed quickly. The Bench dismissed the case.

A Practical Joke which was not Relished.

The Boy Scouts have now been declared winners of the manœuvres in connection with the Coventry and Warwickshire Motor Club, as it has been proved that three of the six motor cyclists who entered Rugby got through the Scouts' ranks in a pantechnicon. The "discovery" has caused great amusement among motorists, not so the Boy Scouts, who, according to a daily paper, "are slapping their knees and waving their 650 poles in anger."

Side Lamps for Sidecars.

The Scottish Automobile Club has pointed out to the R.A.C. and the A.C.U. the danger existing through many sidecarists not using side lamps to show the full width of their vehicle. It will be remembered that this important matter formed the subject of a leading article in *The Motor Cycle* recently, and it is to be hoped that the recommendation will not be disregarded.

The T.T. Entrants.

A meeting of the A.C.U. Competitions Committee was held on Wednesday last week, at which all the entries for the Tourist Trophy Race, published last week were accepted except that of Alan E. Woodman, the one-legged motor cyclist. The A.C.U. barred Woodman, as the committee considered that his deformity might render him a danger to the other competitors. Woodman is sorely disappointed at the decision.

Touring in Devon.

Numerous complaints have been made to the police in Lynmouth as to the conduct of motor cyclists in rushing across the cross roads opposite the Lyndale Hotel over and over again in trying Countisbury and Lynton Hills. The matter has been considered by the Town Council, and, as a *preliminary step*, the police have been asked to deal with it if possible without going to extremes. They do not want to issue summonses if it can possibly be avoided.

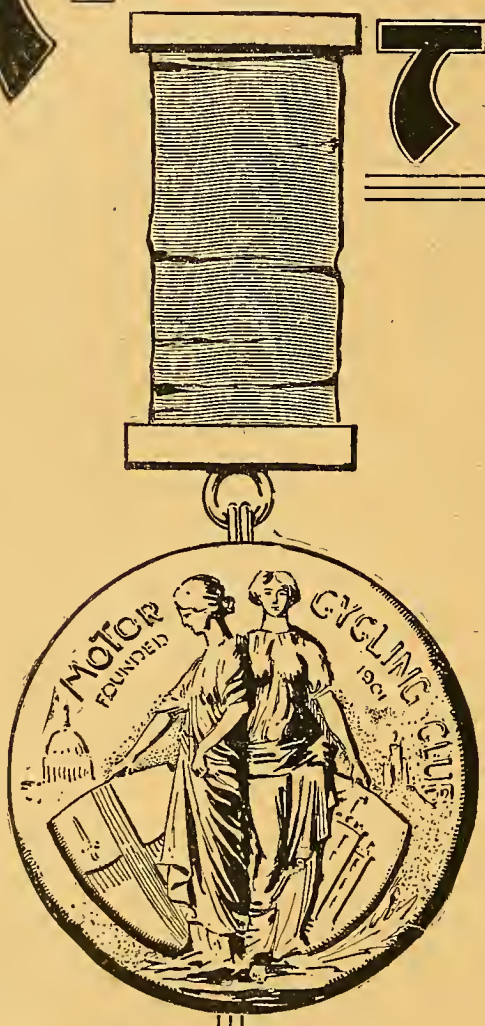
A Fine Climb.

Harry Bashall writes us an account of a new hill which, from all accounts, is a terror. It is known as Succombes Hill, and is situated almost opposite Cyril Patterson's new garage near Caterham. The surface resembles a river bed, and there is a bad hairpin bend to the left, with a reputed gradient of 1 in 3. At the very first attempt Harry Bashall took his 2¾ h.p. T.T. Douglas up the hill, and, having so much in hand, he lowered his gear to 10 to 1 and took up Victor Wilberforce on his carrier. The combined weight of rider and passenger totals 24 stones.



ANGLO-SCOTTISH HILL-CLIMB. H. Berwick (3½ h.p. New Hudson sidecar) negotiating the first corner at Lanton Hill. It will be noticed that some of the spectators are standing on the inside of the corner, which must have hindered the competitors considerably.

HUTCHINSON TYRES



¶ The great point about Hutchinson success is that it keeps on.

Not an occasional triumph, and then —an ominous silence, but success on success, each fresh victory greater than the previous one.

Here is the story of our latest coup:

London-Edinburgh-London

M.C.C. Reliability Trial.

In this event 38 riders started fitted with Hutchinson Tyres, and of these 8 received Gold Medals for the single journey, and 30 Special Gold Medals for the double journey.

38

Hutchinson riders = 30 Special Gold Medals. 8 Gold Medals.

Total - - 38 Gold Medals.

IMPORTANT.—Let us remind you that all Hutchinson Tyres used in the above, or in any other competition on road or track, are identical in every respect to those we supply to the public. We never have made special tyres for competition work, and that is one reason why our tyres are "distinct from all others."

Allow us to send you our latest novelty—"WHY?"

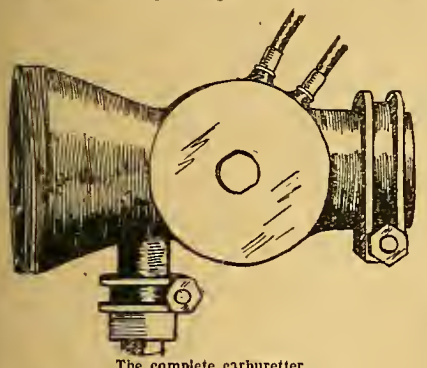
HUTCHINSON TYRE CO., 70, BASINGHALL STREET, LONDON. E.C.

B24

In answering this advertisement it is desirable to mention "The Motor Cycle."

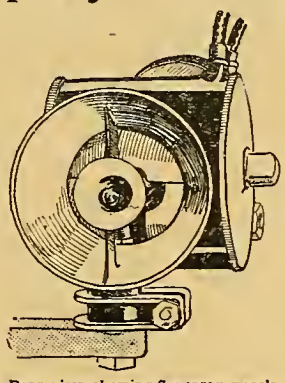
A New Senspray Racing Carburetter.

A NEW Senspray carburetter has been designed for next season, and though it will not be placed on the market till then we have been privileged to see one



The complete carburetter.

of the first to be manufactured. As might be expected, the Senspray principle, which has been so successful during the present season, has been maintained, though its adaptation has been improved. The float chamber is on the usual lines, though on the new type a screw top is fitted, and a neater and stronger form of float needle clip adopted, which cannot be damaged by rough usage. The body of the carburetter consists of a horizontal tubular member, in which is carried a duplex barrel throttle supported in large bearings, and suitably cut away to allow a free passage of vapour to the jet at small throttle open-

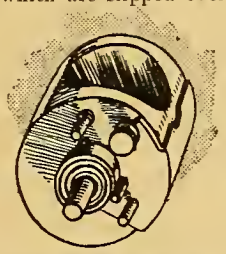


Rear view showing Senspray nozzle.

ings. The air valve consists of a saddle piece working on the outsied of the throttle, and both valves are shut by a simple but ingenious adaptation of the drum spring. The control wires are fitted with eyelets which are slipped over pegs protruding from the air and throttle valves respectively.



New clip for float needle

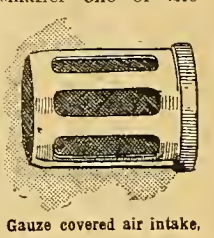


The throttle barrel, also showing air saddle.

So simple is the mechanism, that, by merely detaching one cover of the throttle barrel the whole of the moving parts can be taken out for inspection, and this without the possibility of their being put back wrongly.

The bell mouth through which the air enters is so finished that a dust cap or long tube may be fitted at the option of the rider (we illustrate herewith a neat form of dust cap which can be supplied with the carburetter), and it will be a simple matter to apply crank-case pressure to the vaporising tube.

The usual Senspray induction pipe clip is retained, and a smaller one of the same type holds the float chamber to the carburetter body. The handle-bar control has been slightly modified, the clip being arranged so that it will suit any type of bar and can be made to open either inwards or outwards. Also the cable adjustments can now be done at the handle-bar end with the aid of a small screwdriver.



Gauze covered air intake.

In practice the carburetter is controlled almost entirely by the throttle lever, though the air lever comes in useful for starting and for steep hills.

The workmanship is excellent, and we are looking forward to hearing of splendid results on the road.

Next Saturday's Meeting at Brooklands.

Entries in the motor cycle races for the June meeting of the B.A.R.C., to be held next Saturday, the 15th inst., are given below :

2.25 p.m. The Ninth Short Race (a handicap) :

	Bore and stroke.
E. Kickham (2-cyl. Douglas)	61 × 60
A. J. Luce (2-cyl. Bat)	85 × 65
W. Dewar (1-cyl. Triumph)	85 × 88
W. D. South (1-cyl. Rudge)	85 × 88
W. Stanhope-Spencer (1-cyl. Rudge)	85 × 88
W. H. Elce (1-cyl. Rudge)	85 × 88
Vernon Taylor (1-cyl. Rudge)	85 × 88
Stanley Timson (1-cyl. Rudge)	85 × 88
F. G. Edmond (1-cyl. Humber)	60 × 70
N. D. Slatter (1-cyl. Alcyon)	62 × 82
J. A. Manners-Smith (1-cyl. Triumph)	85 × 88
H. Martin (1-cyl. Martin)	76 × 59
A. G. Walker (1-cyl. Rudge)	85 × 88
J. H. Whitlark (2-cyl. Rex)	77½ × 95
G. E. Stanley (1-cyl. Singer)	69 × 60
J. Cocker (1-cyl. Singer)	69 × 80
J. Pippet (1-cyl. Singer)	69 × 80
F. G. Flanders (1-cyl. Rudge)	85 × 88
G. B. S. McBain (1-cyl. J.A.P.)	85 × 60

3.30 p.m. The Eighth Long Race (a handicap) :

	Bore and stroke.
E. Kickham (2-cyl. Douglas)	61 × 60
A. J. Luce (2-cyl. Bat)	85 × 65
W. Dewar (1-cyl. Triumph)	85 × 88
W. D. South (1-cyl. Rudge)	85 × 88
W. Stanhope-Spencer (1-cyl. Rudge)	85 × 88
W. H. Elce (1-cyl. Rudge)	85 × 88
Vernon Taylor (1-cyl. Rudge)	85 × 88
Stanley Timson (1-cyl. Rudge)	85 × 88
F. G. Edmond (1-cyl. Humber)	60 × 70
N. D. Slatter (1-cyl. Alcyon)	62 × 82
J. A. Manners-Smith (1-cyl. Triumph)	85 × 88
H. Martin (1-cyl. Martin)	76 × 59
W. G. Fowler (1-cyl. Rudge)	85 × 88
J. H. Whitlark (2-cyl. Rex)	77½ × 95
E. F. Remington (2-cyl. Matchless)	90 × 77½
G. E. Stanley (1-cyl. Singer)	85 × 88
J. Cocker (1-cyl. Singer)	69 × 80
F. G. Flanders (1-cyl. Rudge)	85 × 88
G. B. S. McBain (1-cyl. J.A.P.)	85 × 60

4.10 p.m. The Rudge Sprint (a handicap) :

One-cylinder Rudge, 85×88 mm. bore and stroke: Stanley Timson, Vernon Leggatt, W. D. South, W. Stanhope-Spencer, W. H. Elce, Vernon Taylor, E. F. Remington, A. G Walker, Herbert C. Vine, Arthur H. Woodington, W. Gordon-Fowler, H. W. Farmer, F. G. Picken, C. Janicker, R. T. Wood, Basil Collier, W. H. Edwards, S. Russell-Cooke, C. Patteson, E. C. Heis, M. G. Fleming, Charles Warren, and Clifford Pressland.

The Singer Sprint (a handicap) :

One-cylinder Singer, 69×80 mm. bore and stroke: N. A. Ayres, J. Cocker, R. G. Mundy, O'Donovan, Petty, Pickering, J. Pippet, Smith, G. E. Stanley, W. A. Jacobs, Harold Petty, and J. P. Le Grand.

The Zenith Motor Cycle and Sidecar Sprint (a handicap) :

	Bore and stroke.
G. F. Hunter (2-cyl.)	90 × 77½
L. P. Openshaw (2-cyl.)	85½ × 85
E. B. Ware (2-cyl.)	76 × 54½
P. Weatherilt (2-cyl.)	76 × 82
F. W. Barnes (2-cyl.)	90 × 77½

The following will drive 76×85 mm. twins: H. Jepson, R. Charlesworth, H. H. Huckle, H. Luxford, E. C. Baker, E. S. New, W. J. Marshall, F. R. Tillman, M. L. Ainslie, A. J. Luce, W. Moore, and W. G. Bower.

BROOKLANDS OBSERVATIONS.

The Singer water-cooled single-cylinder racing machine, designed by Lonis Coatalen, of the Sunbeam Co., which we described a couple of months ago, is being tested on Brooklands again, this time in the hands of A. J. Dixon.

It is not proposed to attempt records at present on it, as G. E. Stanley is confident he can capture the single-cylinder hour record on his 3½ h.p. 75½ mile an hour air-cooled machine.

The wonderful speed of the T.T. Douglas ridden by S. L. Bailey at the last B.M.C.R.C. meeting cannot have failed to attract attention; this well-known Australian rider told us last week that he was sure of his ability to improve upon Sam Wright's 350 c.c. hour record of 58 miles 1,408 yards on a 2¾ h.p. twin Humber, and may shortly make the attempt. Bailey has entered for the Junior T.T.

Sixty miles in an hour on a light-weight is undoubtedly an attractive proposition, and the time does not appear to be very far distant when this feat will be accomplished on a 2¾ h.p. twin.

Of course it is well-known that Sam Wright came within an ace of accomplishing the feat on his record ride, but owing to shortage of lubricating oil he nearly came to a standstill in one lap near the finish.

CLUB NEWS

North Middlesex M.C.C.

In view of the T.T. races, it has been decided to postpone the twelve hours' open reliability trial, which was to have taken place on the 29th inst.

Dublin and District M.C.C.

The open reliability trial will take place on the 14th and 15th inst., and take the form of a twenty-four hours test. The route will comprise Drumcondra (start), Belfast, Londonderry, Donegal, Cavan, and back to Dublin (Phœnix Park).

Lowestoft and District M.C.C.

A club has been formed in this district, the name of which



The Lewes and Tunbridge Wells M.C.C.'s joint hill-climb at Captain Kidd's Hill.

is to be as above, and the following officers have been elected: President, Dr. Hutchinson; captain, Mr. Sidney Smith; vice-captain, Mr. Beals; treasurer, Mr. V. J. Chadd; secretary *pro tem.*, Mr. W. S. Wilkins.

Brecon and Radnor M.C.C.

A club has been formed with the above title, its president elect being Capt. Glen Kidston, Gwernyfed Park. Officers and committee have also been chosen. The first run was on the 5th inst; on the 19th inst. a run will take place to Raglan. A reliability and speed trial will come off in the immediate future. Hon secretary, Mr. C. J. Nott, Brecon.

Ayr and District M.C.

A petrol consumption trial was held on the 5th inst. extending over a very hilly course of 22½ miles.

The results were based on the formula $\frac{C+W}{\text{Petrol in ozs.}}$, the winner of the single-cylinder class, George Sloan, on a 3½ h.p. Sun-Precision, used 18½ ozs. of petrol, which works out at the remarkable figure of 194.5 m.p.g.

		Petrol in ozs.	Fig. of merit.	m.p.g.
1.	Geo. Sloan (3½ Sun-Precision) ...	18½	48.3	194.5
2.	Jas. Gilchrist (3½ Triumph) ...	23½	37.5	153.1
3.	Geo. Cocker (3½ C. and R.) ...	25½	34.	141.1
	TWIN CYLINDERS.			
1.	A. Somerville (5 Rex de Luxe) ...	38	30.5	94.7
2.	Miss May Senior (2¾ 2-sp. Douglas)	26½	23.5	135.8

Hampshire M.C.U.

A speed-judging competition was held on the 5th inst. at Ower, near Romsey. Members of the Southampton, Bournemouth, Portsmouth, and Winchester clubs took part. Watches and speedometers were barred. Result: 1, Mrs. Clark, Bournemouth (3½ h.p. Zenith and sc.), 4s. slow; 2, G. E. Eyston, Bournemouth (3½ h.p. Rudge), 5s. slow; 3, P. Kiln, Portsmouth (3¼ h.p. New Hudson and sc.), 12s. fast.

Essex M.C.

On Saturday, June 1st, the above club held a members' hill-climb on Dawes Hill, Chingford. The results were as follows:

SIDECAR CLASS.

Rider and machine.	Fig. of merit.	Time.
G. T. Gray (3½ Rudge and sc.) ...	36.5 ...	45⅘s.
N. Gray (6 Zenith)	39.7 ...	39⅘s.
B. A. Hill (7 Indian) ...	45.8 ...	36⅗s.

Lewis (8 h.p. J.A.P.) made fastest time in 33⅘s.

SOLO CLASS.

M. Campbell (3½ Rudge)	27.5 ...	20⅘s.
G. T. Gray (3½ Rudge)	28.6 ...	23⅘s.
B. C. De W. Siffken (2 S.I.A.M.T.)	29.1 ...	30⅕s.

The annual twenty-four hours' ride from Woodford to York and back for members only will take place on August 30th and 31st. Particulars can be obtained from Mr. H. Fuller, 51, Pulteney Road, South Woodford, Essex.

Motor Cycle Union of Ireland (Ulster Centre).

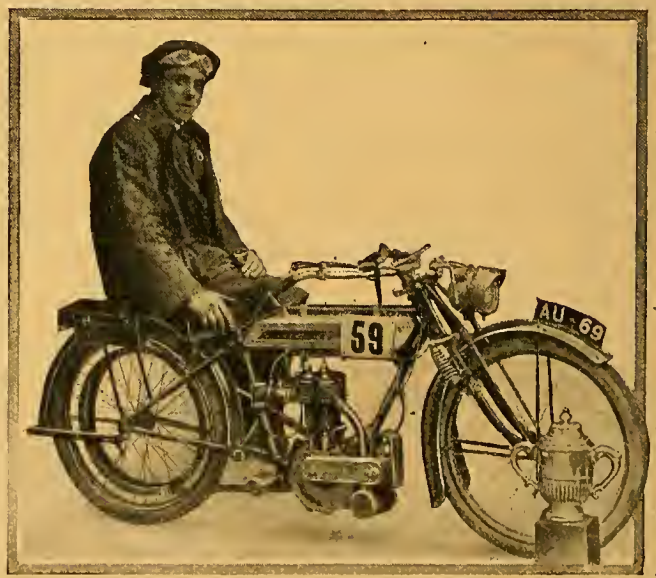
On Saturday afternoon this centre held a hill-climbing competition at Roquery Hill, situate about three miles from Toomebridge, and twenty-five miles from Belfast. The hill is very suitable, and the distance of the climb was exactly half a mile. Result of private owners' class:

	Handicap.	Net time.
1. Alan Combe (2½ Singer)	30s. ...	32s.
2. Stanley Pyper (3½ Zenith-Gradua) ...	3s. ...	35⅗s.
3. C. A. Porrett (3½ Triumph)	10s. ...	36⅘s.

Eighteen started in the open class, and although A. Combe was 1⅗s. slower his handicap allowance was sufficient to enable him to secure another win, the placings being:

1. Alan Combe (2½ Singer)	30s. ...	33⅗s.
2. J. Gordon Getty (3½ Triumph)	10s. ...	35⅘s.
3. P. H. Dods (2½ New Hudson)	30s. ...	36⅖s.

S. P. Corry (3½ h.p. Matchless) from scratch made fastest time, viz., 37⅗s. Very valuable assistance was rendered by the members of the Royal Irish Constabulary.



M.C.C. CHALLENGE CUP WINNER.

By winning the M.C.C. challenge cup in the London-Edinburgh and back competition three years in succession, George Brough, of Nottingham, now becomes the holder. To win the cup he has covered 2,377 miles, his total deviation from schedule time being 10 min. 43 secs. in 1910, 5 min. 44 secs. in 1911, and nothing this year—quite a record in itself.



Some of the successful sidecarists in the Coventry and Warwickshire M.C. Welsh run. C. T. Lloyd (6 h.p. Rex Sidette), A. Wright (3½ h.p. Triumph and sidecar), and A. Elson (4 h.p. two-speed Singer and sidecar).

Bedford and District M.C.C.

On the 19th ult. the second trial was held (a seventy-five mile non-stop run at a schedule speed of 20 m.p.h., watches and speedometers barred). Results: 1, G. Crawley (3½ Triumph), gold medal; 2, E. Murkett (3½ B.S.A.), silver medal; S. Savage (3½ Triumph and sidecar), special prize for best sidecar performance; Mrs. W. H. Kirkpatrick (Douglas), special prize for best performance by a lady.

Walthamstow M.C.

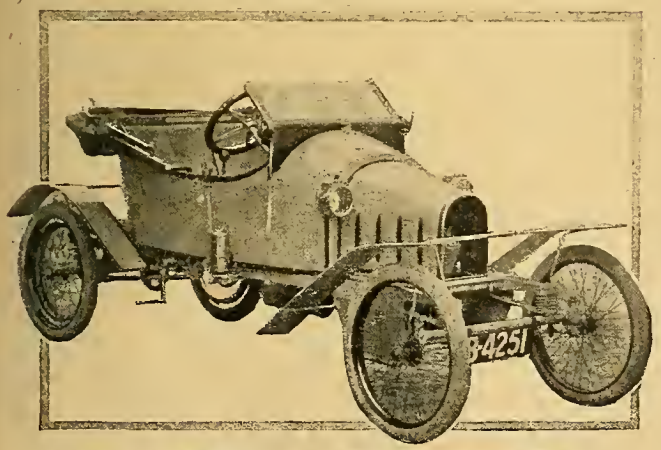
The 250 miles reliability trial to Yarmouth and back, held on June 2nd, for the W. S. Low cup, resulted as follows: 1, J. W. Percival (6 h.p. Fafnir tricar), time error at secret check 10s. slow, silver cup and gold medal; 2, F. Picken (3½ h.p. Rudge), error 59s. fast; W. Fairhead 4 h.p. Peugeot and sidecar), 1m. 14s. fast, and H. Eiden (5 h.p. F.N.), 1m. 14s. slow, tied for third place.

North Staffs M.C.C.

A reliability trial was held on the 2nd inst., wretched weather prevailing. The course selected was: Start Plough Inn, Endon, to Bakewell, Sheffield, Holmfirth, Woodhead, Glossop, Longnor, and back to Endon, 113 miles. Of fourteen entrants, twelve started. Result: 1, J. A. Prendergast (3½ Rudge), 97½ marks, gold medal; 2, G. Jones (3½ Zenith), 94¾ marks, silver medal; 3, G. Tagg (4¼ Regal-Precision), 30 marks. The marks obtained in this trial count towards the Ashton Reliability Challenge Cup.

Lincolnshire A.C. (Motor Cycle Section).

A social meeting with the East Yorkshire Motor Cycle Club will be held at Scawby Gull Ponds (about three miles S.W. of Brigg), on Saturday, the 22nd inst. Members should arrive at Scawby by 3.30 p.m.



The latest type of L.M. cyclecar, built by W. M. Cunningham, of Clitheroe. The L.M. was one of the original light quadcars, and has been greatly improved in appearance.

Finsbury Park C.C. (Motor Cycle Section).

The result of the speed-judging competition on the 1st inst. was as follows:

		Points.
1.	R. Gordon Bassett (Rudge)	90
2.	J. Evans (Bradbury)	88
3.	R. Hazell (Kerry)	87
4.	C. F. Revelle (Triumph)	87

Stroud and District M.C.C.

The club held a reliability trial to Weymouth and back on Whit-Monday and Tuesday for the challenge cup presented two years ago by the Triumph Cycle Co., Ltd. Secretly observed checking was worked very successfully at several points *en route*, and the winner, A. C. Ratcliff (B.S.A. two-speed), completed the course of 230 miles with only a little more than six minutes variation from schedule time. F. W. Meadows (Alldays) and P. F. Withey (Triumph) are the winners of the consolation prizes.

Surrey M.C.C.

The Guildford to Exeter reliability competition for the Triumph Cup and other prizes will take place on the 18th and 19th inst., and the start will be at 11 p.m. from the Angel Hotel. The controls will be at Guildford, Yeovil, Honiton, Exeter, Salisbury, Winchester, and Guildford.



H. C. Newman (3½ h.p. Ivy-Precision and sidecar) approaching the bend in Class 7 of the Harley Bank hill-climb organised by the Birmingham M.C.C.

Furness M.C.C.

Result of petrol consumption trial on the 2nd inst.: 1, E. E. Clow (6 Zenith and sc.), 88 miles and 25.6 ton-miles per gallon; 2, M. Bradbury (2¾ Douglas), 174 miles and 24.6 ton-miles per gallon; 3, H. C. Wilkins (3½ Humber), 119 miles and 21.5 ton-miles per gallon. The route was Barrow, Newby Bridge, Newton-in-Cartmel, Grange, Allithwaite, and Barrow. Total distance, forty-nine miles.

Manchester M.C.

The result of the Manchester Motor Club Whit-week three days' reliability trial over a course extending through North and Mid-Wales, Aberystwyth, Llandrindod Wells, Knighton, Hereford, Gloucester, Warwick, etc., finishing at Stonebridge, total distance nearly 400 miles, is as follows: C. E. Kettle (3½ h.p. chain-drive two-speed James and sidecar) and W. Heaton (2¼ h.p. two-speed chain-drive A.J.S. solo) tied for first place, F. Syrett (5 h.p. Indian) being third. The first and second prizes, value £5 and £3 respectively, to be divided. The Triumph Cup to be run off by the above-mentioned riders at a future date on reliability only.

The course was extremely hilly, and the roads in many places slippery and unsafe. Heaton and Kettle both had one stop each, the former a puncture and the latter a sooted plug.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Hull to Swansea.

Would you please let me have the best route from Hull to Swansea avoiding as many hills as possible? The trip proposed is with a 3½ h.p. Centaur and sidecar, total weight of driver and passenger twenty-four stone, therefore I wish to avoid hilly districts.—L.L.S.

Your best route would be as follows: Hull, by ferry to New Holland, Brigg, Lincoln, Sleaford, Falkingham, Bourn, Stamford, Uppingham, Rockingham, Market Harborough, Rugby, Warwick, Stratford-on-Avon, Evesham, Tewkesbury, Ledbury, Hereford, Willersley, Three Cocks, Brecon, Llandovery, Llangadock, Llandilo, Pontardulais, to Swansea. We are afraid you cannot avoid hills when entering Wales. The route we have given you is the best one, avoiding as many towns as possible.

Hard to Start After Cleaning.

(1.) My machine is a 5 h.p. twin Rex 1909 pattern with Bosch magneto. It ran well last year and started easily. I have taken off cylinders and cleaned thoroughly, but have not disturbed the timing gear. I have ground in the valves and the compression is very good. On reassembling it starts easily on the stand and each cylinder fires regularly, but I cannot get it to start with a run. (2.) I propose having a free engine clutch fitted; which will be the better, a Mabon or Albion clutch? The machine is used with sidecar. (3.) In timing the magneto (chain drive) which cylinder do you time? (4.) The belt, a Whittle 2in., has run about 1,500 miles and does not show any signs of wear, but it slips badly. I have treated it with castor oil during the winter, but it still slips; can you suggest a remedy?—J.D.

(1.) Probably there is some leak in the inlet pipe joints or carburetter. This very easily occurs when reassembling an engine, and if you carefully overhaul the joints we think you will soon get the machine to start easily. (2.) Either of the two clutches should suit your purpose. (3.) You can time whichever cylinder you like. When one is right the other is right. (4.) We should recommend you to examine the pulley and see if it is badly worn; also scrape the belt carefully and dress it with collan oil. This is better for leather than castor oil.

Exhaust Timing.

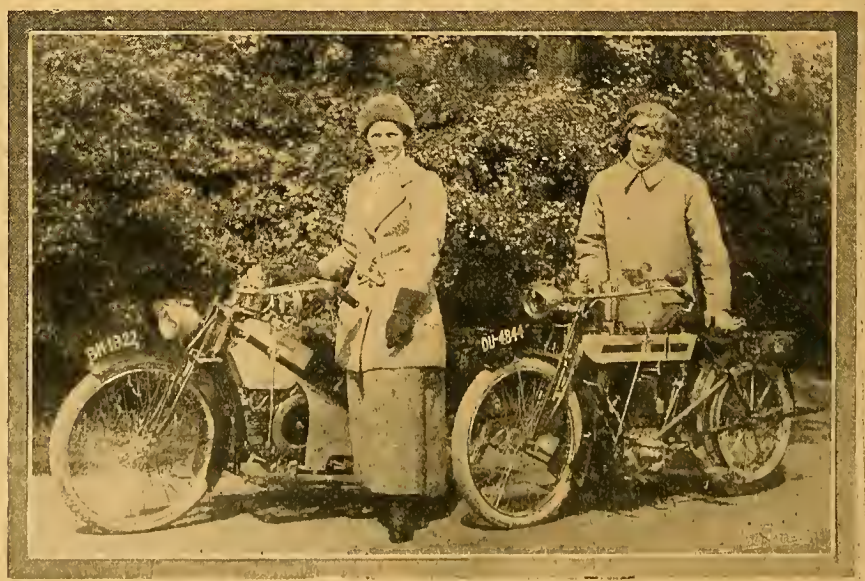
(1.) I ride a 1911 machine, 3½ h.p., of well-known make, which knocks badly on hills or when more gas is given after slowing down; moreover, I do not get more power at full than at half throttle. The gear and the valve timing are as the makers left them. In going over the timing of the valves I find that the exhaust valve closes before the piston reaches the top of the stroke (quite half an inch). Does this account for the trouble? (2.) Can the closing of the exhaust valve be altered without disturbing the point of opening? (3.) Would the magneto timing be affected by the re-timing of the exhaust? If so, what ought to be done? (4.) Can you suggest any other remedy for loss of power and knocking? The compression is quite good.—T.O.

(1.) It seems that the timing of the exhaust valve is much too early. It should close when the piston reaches the top of the stroke, or a little later, and should open when the crank pin is 45° from the bottom of the firing stroke, *i.e.*, about half an inch. This will certainly cause bad running. (2.) You cannot alter the closing of the exhaust valve without also altering the opening thereof. (3.) The magneto will not be affected by the timing of the exhaust. (4.) The trouble might also be caused by carburetter adjustment.

Sheep on the Highway.

I was travelling at 10 m.p.h. on my motor cycle down the long hill that connects Tetbury with Bath, the other day, when I saw a flock of about ten sheep at 300 yards ahead; they were on the proper side of the road. When I got within six yards, however, one of them came out under my front wheel, causing my discomfiture in the dust a few yards further on. I was not hurt, but the machine was. Kindly tell me what I should have done as regards taking names and addresses, with a view to recovering damages.—K.S.K.

We very much doubt if you could get damages. The defence would be that having seen the sheep and knowing that they are unreliable animals and likely to run across your path unexpectedly, you should have taken due precaution and dismounted, if necessary. If you thought of fighting the case, however, you should have asked the shepherd the name and address of the owner, and taken the drover's name and address as a witness, which he would, of course, have given.



ANOTHER MOTOR CYCLING MARRIED COUPLE.
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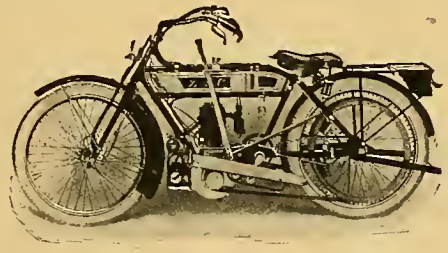
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50 26 × 2¼ **REINFORCED ENDLESS TUBES,** 5/6 each.

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The **SERVICE COMBINED PETROL TANK AND NUMBER-PLATE,** an accessory of real use, **3/8.**

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SPECIAL AGENTS for **F.R.S. Lamps** and **Lukin Carburetters.**

Decompressor for Triumph.

Can you tell me whether the P. and P. decompressor is suitable for the Triumph, efficient and fairly reliable? Or if not, can you recommend any other devices to make easier the running start?—W.C.B.

We do not think that there is any doubt as to the suitability of the decompressor mentioned. The manufacturers, Messrs. Packer and Prentis, Roden Street, Ilford, E., will, of course, tell you if it can be easily fitted to a 3½ h.p. Triumph.

Sheffield to Glasgow.

Please let me know—(1.) The best and shortest route from Sheffield to Glasgow, and the total distance? (2.) Time required to do journey comfortably on a 2½ h.p. three-speed machine? —W.M.

(1.) Your best route would be as follows: Sheffield, Rotherham, Doncaster, Ferrybridge, Aberford, Wetherby, Boroughbridge, along Leeming Lane, through Scotch Corner, Barnard Castle, Middleton-in-Teesdale, Alston, Brampton, Longtown, Gretna Green, Lockerbie, Beattock, Abington Inn, Hamilton, to Glasgow. The distance is approximately 260 miles. (2.) You can do it easily in two days.

Three-wheeled Runabouts.

I wish to purchase a two-seater three-wheel runabout, and would like your advice on the following two types, the Morgan and A.C. Sociable. (*a*) Are they quite reliable? (*b*) Are the clutches well designed and up to their work? (*c*) Are they comfortably sprung and silent running? (*d*) Are the engines liable to overheat easily in hot weather? I prefer the design of the Morgan, but have not seen many on the road, and consequently would be indebted if you would let me know if they are quite satisfactory.—F.W.T.A.

We should say that the runabouts in question are quite reliable. The clutches and gears are satisfactory. They are well sprung, run silently, and are unlikely to overheat, and are perfectly satisfactory, as witness their performances in reliability trials. It is a matter of individual preference.

Hard to Start.

I have a 5-6 h.p. twin Rex (1908) which is very difficult to start. It has been in garage and is very little, if any, better. The back cylinder misses firing every now and again, and when it picks up the machine practically jumps. It will take very little air; if much air is given it seems to choke. It is a machine which was built for speed, but we are using it for sidecar work, as it is very powerful when both cylinders work. I should be pleased if you can tell me what is the best to do.—A.E.C.

We should say that the carburetter is partially choked up or there is an obstruction in the tank or petrol pipe. Examine the magneto and see that the high tension carbon brushes are making good connection on the collector ring. Also verify the setting of your plugs. When you get the carburetter clear and a good flow of petrol through the jet we think you could start more easily. If, as we think, the carburetter is obstructed, you will, of course, be able to give more air when this obstruction has been cleared.

Single or Twin for Sidecar.

(1.) If two sidecar combinations were built up exactly alike as regards frame design, type of wheels, tyres, etc., and both geared the same, one machine being a single and the other a twin, which machine would cause the most vibration when travelling at a given speed, say 20 m.p.h.? (2.) Which of the two machines would be most liable to overheating? (3.) Is a large air-cooled twin (say 8 h.p.) liable to overheat on a sidecar if no fan is used to cool it, provided that it is properly driven?—A.L.

We should say that more vibration would be obtained from the single-cylinder as the twin is better balanced. It is impossible to say which would be the more likely to overheat as overheating depends upon so many causes. Theoretically the twin should keep the cooler as the work is divided up between the two cylinders. An 8 h.p. twin can be driven with a sidecar minus a fan without there being any trouble through overheating.

Brondesbury, N.W., to Tonbridge.

Can you tell me the best way to take from Brondesbury, N.W., to Tonbridge? I have been by Hammersmith Bridge and Barnes, but went *viâ* Sutton and Redhill, which is a long way round, as I have thirty miles to go beyond Tonbridge. I wish to avoid traffic as much as possible.—E.F.G.

The best thing you can do is to get a copy of the new official map of the R.A.C. of recommended routes. "Into, Out of, and Round and Across London," which can be obtained price 1s. 7d. post free from these offices. If you look at this, you had better take the following route: Cavendish Road, Wrentham Avenue, Bathurst Gardens, Wood Lane, Shepherd's Bush, Hammersmith Broadway, Castelnau Road, Barnes Common, Roehampton Lane, straight across Putney Heath, turn to the left at the end of this road into High Street, Wimbledon, Merton Road, past the Grove Hotel, Mitcham Station, where turn to the left and then right and follow the tramlines along the Croydon Road, and after the railway bridge take the first turning on the right passing Deddington Lane Station; go as straight as you can past the Plough Inn, and you will come out at Purley Corner; continue as far as Warlingham, turn left under the railway bridge, go up Warlingham Hill, which will take you straight to Westerham, then reach Tonbridge *viâ* Westerham, Crockham Hill, and Leigh. This is the best route we know of.

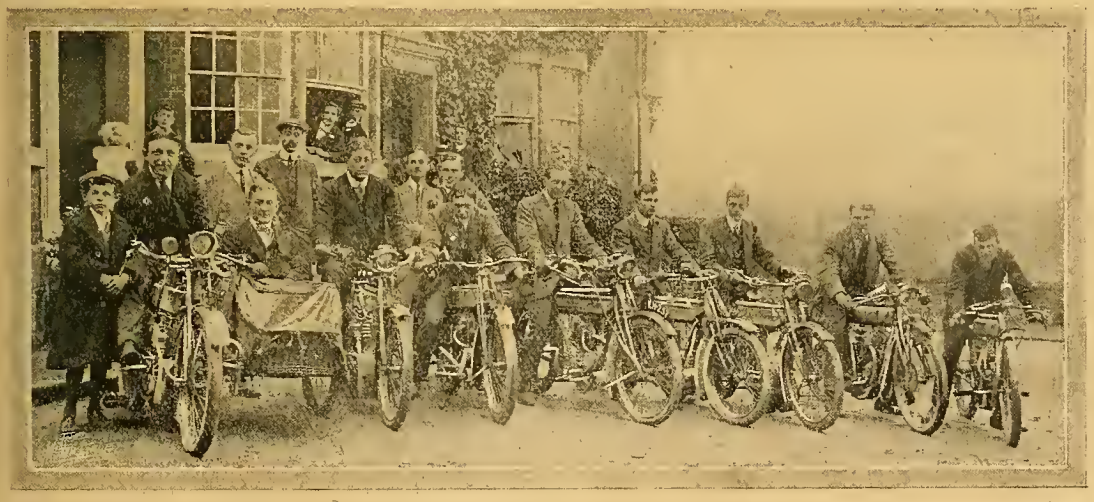
EXPERIENCES WANTED.

"Z.Y.X." (Aberdeen). Baby Levis or Touring Levis two-stroke machines.

"S.F.B.L." (Cork). 3¾ h.p. twin clutch Premier, particularly as regards engine vibration and slow running.

"D.H." (Birkenhead). N.S.U. two-speed free engine device as fitted to an A.J.S. lightweight, particularly as regards wear and disorders.

"T.C.B." (Bangalore, India). (1.) Bowden two-speed gear with 1911 Triumph and sidecar. (2.) Ponder's attachment for steering motor cycle from sidecar seat. (3.) Amac and P. and P. decompressors.



Members of the North Staffordshire A.C. who took part in the reliability test from Endor to Sheffield.

A Splendid Result.

The statement of accounts for Brown Bros., Ltd., for the year ended December 19th, 1911, shows a profit of £30,642 10s. 11d.

Bradbury Machines in the M.C.C. Run.

A. Peppercorn, who won a gold medal in the M.C.C. run from London to Edinburgh, rode a 3½ h.p. Bradbury. Thus nine Bradbury riders were successful in gaining medals on this trip.

Motor Cyclists and the A.A. and M.U.

Motor cyclists are reminded that they are now entitled to the whole of the advantages of A.A. and M.U. membership at the subscription of 10s. 6d. per annum. This extension of privileges, recently instituted, has resulted in a considerable number of motor cyclists joining the Association. During the past month 1,397 became members.

London-Edinburgh Run.

The Hutchinson Tyre Company inform us that out of thirty-eight competitors whose machines were fitted with Hutchinson tyres in the London to Edinburgh run all finished the outward journey satisfactorily. On the return journey, twenty-seven of the machines fitted with Hutchinson tyres started and twenty-seven finished. Many of the successful competitors have sent their congratulations to the Hutchinson Tyre Company.

Among the makes of lamps which "shone conspicuously" in the London-Edinburgh run was the Lucas.

George Brough, who for the third time in succession won the Motor Cycling Club Challenge Cup, used Wakefield "Castrol" oil and John Bull tyres on his 3½ h.p. Brough.

The London to Edinburgh run proved once more the reliability of Palmer tyres. The machines shod with "the tyre that is different" scored four gold medals for the double journey, and four gold medals for the single journey, as well as the Wells and Clark cups, won by the Clyno, for the best performances respectively on the single and double journeys.



Insurance of T.T. Riders.

Ernest J. Bass, of Bishops Stortford, has a special policy for T.T. riders, covering personal accidents whilst practising and during the race.

Tyre Reliability.

We are asked to state that J. L. Norton's retirement from the Birmingham-Land's End run was not due to tyre troubles as stated, the Hutchinsons fitted to the machine going through the journey without the necessity for the use of a pump.

An Enthusiastic Report.

A Watford rider of a Bradbury machine called at the local agents the other day and had a Binks carburetter fitted to his machine. A short time afterwards the same firm were surprised to receive the following telegram: "God bless Binks.—Edwards." Which is a sure enough indication that the rider in question was delighted with the change.

Longevity of Tyres.

We are in receipt of a booklet from Messrs. J. Pedley and Sons, Ltd., Oxford Works, Great Charles Street, Birmingham. The introduction is based on an extract from the Judges' Report of the Spring One-day Trial, 1912, to the effect that it is highly desirable that heavier tyres should be made for use on motor cycles. Messrs. Pedley claim that they have been carrying out this practice for the last two years. Every tyre is built for touring purposes and is constructed on similar lines to a motor car cover. In the book Pedley tyres, tubes, and belts are listed.

New Machines by Easy Payments.

Hitchen's Motor Exchange Co., Ltd., Morecambe, are disposing of their stock of second-hand machines, having decided to devote their attention to selling new pattern motor cycles on the deferred payment system.

The Future of the Levis.

Messrs. Mahler Bros., who handle the Levis two-stroke lightweight motor cycle, inform us that they have now converted their business into a limited company, which will trade as Messrs. Mahlers' Ltd. Mr. Vernon H. Mahler and Mr. H. W. Mahler are joint managing directors.

Interesting Presentation.

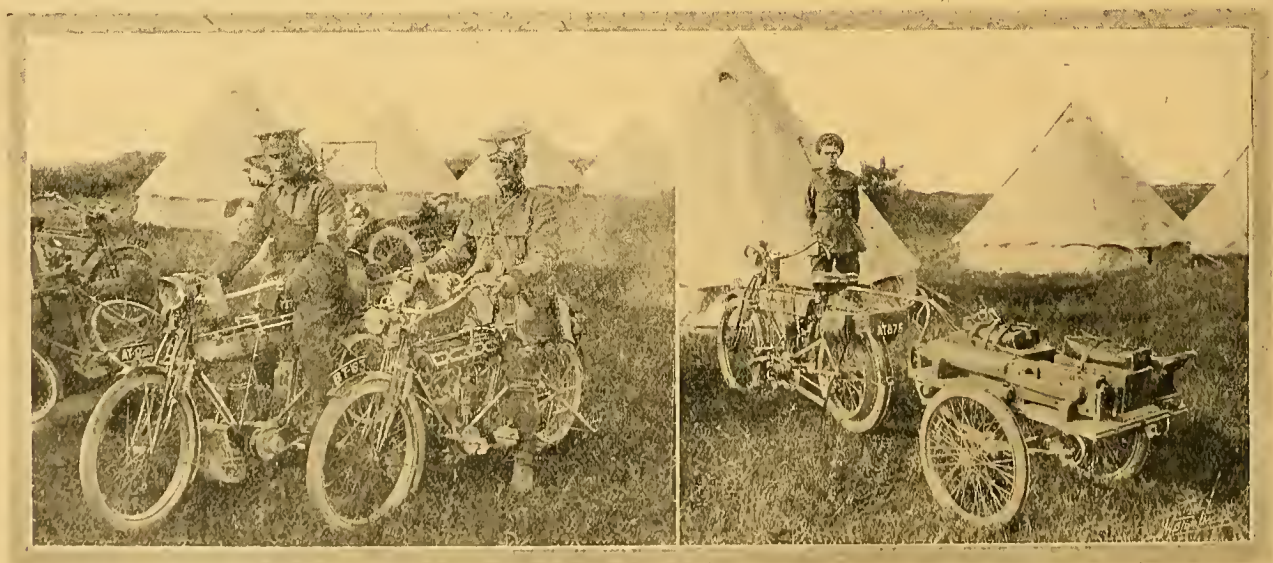
In recognition of his eighteen years' services with the Triumph Cycle Co., Ltd., Mr. E. L. Roberts, head of the Triumph engine department, was the recipient of a gold watch and albert, subscribed for by the workmen under his control, the managers of the company joining in the presentation. A dinner at the White Lion Hotel, Coventry, preceded the ceremony, Mr. Schulte handing Mr. Roberts the gift.

The Brampton Variable Gear.

Regarding the description of the Brampton variable pulley gear which appeared in our last issue, we are asked by the makers, Messrs. Brampton Bros., Ltd., Oliver Street Works, Birmingham, to state that the gear has been designed for use on lightweight machines and 3½ h.p. solo mounts.

J.P. 3,000 Mile Tyre.

We have been using a John Piggott rubber studded tyre on the driving wheel of one of our 3½ h.p. machines, and after 900 miles it shows little if any sign of wear, and there is only one small cut in the tread. It has never punctured. Judging by the thickness of the rubber, it would appear to be easily capable of its guaranteed 3,000 miles. We shall have more to say about it later in the year



Two motor cyclist sergeants of the 5th East Yorks, Cyclists' Battalion at the week-end camp at Hornsea. The machines are a Zenith and twin Centaur.

Novel carriage for Maxim gun and accessories belonging to the 5th East Yorks, Cyclists' Battalion. It is attached to a 3½ h.p. Bradbury.

ROM

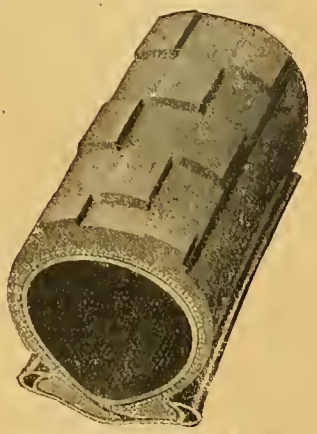
(ALL-BRITISH)

TYRES



Combination Non-Skid.

Combination Rubber and Stee Cover.			Rubber Stud Cover, Heavy.
47/6	24 x 2	in.	39/6
50/6		2¼	40/6
52/-		2½	42/6
49/6	26 x 2		40/6
52/6		2¼	42/6
55/-		2½	44/6
51/6	28 x 2		41/6
55/-		2¼	43/6
57/6		2½	45/6



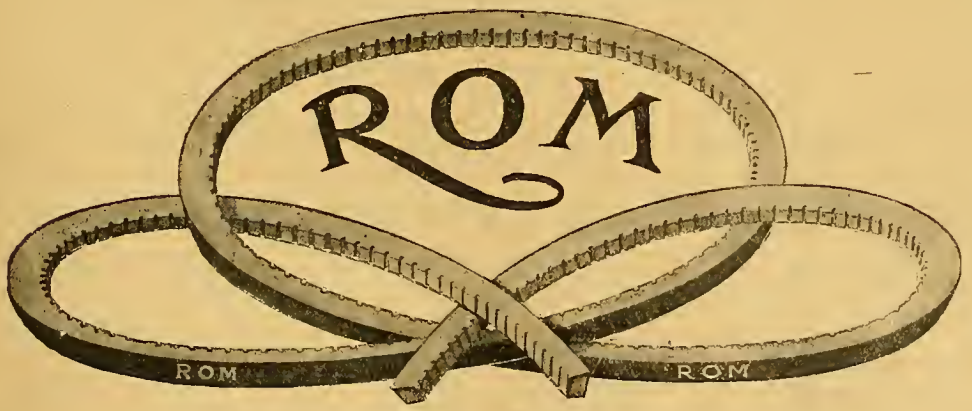
Rubber Stud, Non-Skid.

ROM SIDECAR TYRES.

For the Back Wheels of Heavy Motor Cycles where Sidecars are used.

	Cover.
26 x 3in. (to fit 2½in. rim) with special heavy Voiturette tread	70/-
26 x 2½in. (to fit 2¼ or 2in. rim) do. do.	65/-

Non-Skid (puncture proof), Beaded Edge only.



BELTS,

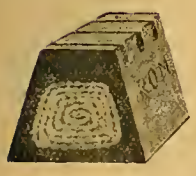
⅝" .. 1/7; ¾" .. 1/11; ⅞" .. 2/2; 1" .. 2/5 per foot.

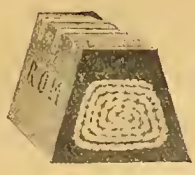
Harrow-on-the-Hill,
June 3rd, 1912.

Gentlemen,

Re the ROM 1in. belt which I used during the A.C.U. Six Days' Trial, gaining the Gold Medal, I must admit it absolutely surpassed my expectations, never once requiring the slightest attention, and, in addition to the six days, it was used in the A.C.U. Team Championship, A.C.U. Quarterly Trial, and several minor events with sidecar, in which I gained highest awards.

Yours truly, W. COOPER.



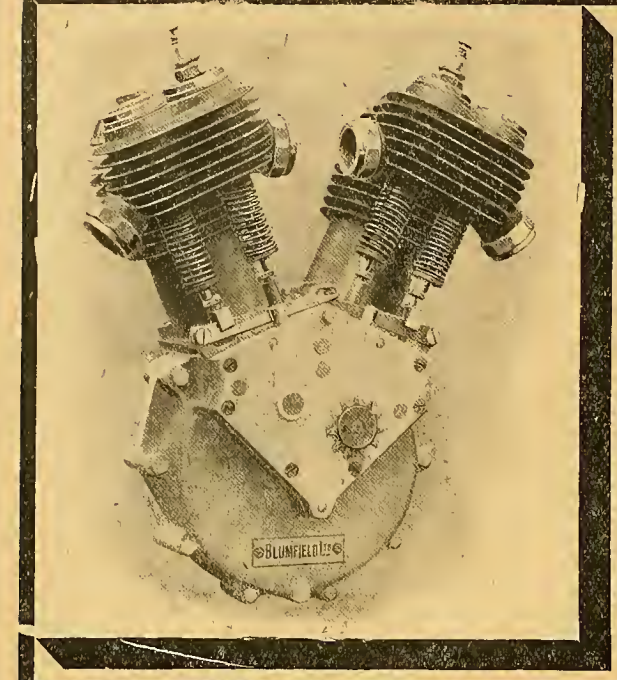


ROM TYRE & RUBBER CO. (1909), LIMITED,

36, BROOKE STREET, LONDON, E.C.

TELEGRAMS—ROMDOM. LONDON. PHONE—1513 HOLBORN.

In answering this advertisement it is desirable to mention "The Motor Cycle."



THE "KNUT" CRACKER

AT OAKAMOOR, MAR. 30/12,

WAS

THE "BLUMFIELD" 80 x 95 TWIN

FIRST in CLASS 4, and tied for FASTEST TIME OF THE DAY IN CLASS 5.

BLUMFIELD L^D., 70, LOWER ESSEX ST., BIRMINGHAM.

Quadrant - Armstrong

Latest Successes.

A.C.U. SPRING RELIABILITY TRIALS, 2 NON-STOPS.
LONDON TO EDINBURGH - - - 3 GOLD MEDALS.

Owing to completion of extensions—IMMEDIATE DELIVERY OF 4½ h.p. MODELS.

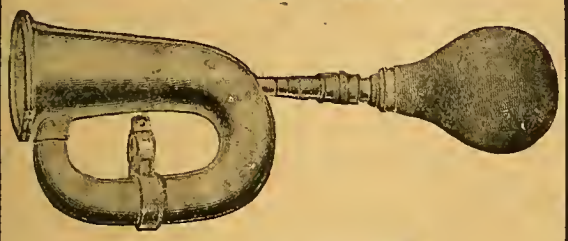
CASS'S MOTOR MART,
5, WARREN STREET,
LONDON, W.

HARRODS LTD.,
BROMPTON ROAD,
LONDON, S.W.

"QUADRANT," Lawley Street, BIRMINGHAM.

This is about the best Horn you can buy for your Motor Cycle!

(ENGLISH MADE.)



Rotax

Clarionette 18/9

A smart 16in. horn for the motor cycle. Nickel-plated brass, with best quality bulb and dust cap. Easily cleaned. A clear and penetrating tone. Free from harshness.

FROM YOUR AGENT.

(Wholesale) Rotax Motor Accessories Co.,
43/5, GREAT EASTERN STREET, LONDON, E.C.

Mr. S. T. Tessier

the celebrated rider of the "Bat," has won

2 More Medals

—a Gold for London to Edinburgh and a Silver for the N.W. London Reliability Trial. He always uses "Sternol" Oil. So should you. It does not gum nor carbonize.

E.H.G.

Write for free sample and name of nearest agent.



"STERNOL," 56, Royal London House, Finsbury Square, London, E.C.

Books for Motor Cyclists

Motor Cycles and How to Manage Them.
The standard Handbook of the Motor Cycle. Fifteenth edition, revised and enlarged, now on sale. Price 1/- net. By Post 1/3.

Hints and Tips for Motor Cyclists.
Full of useful "wrinkles" with regard to the care and management of motor cycles. 3rd edition. Price 1/- net. By Post 1/2.

The Motor Cycle Route Book.
Contains best routes for the whole of the British Isles, 45 maps and speed limits. Price 1/6 net. By Post 1/9.

Obtainable (with remittance) from ILIFFE & SONS LTD., 20, Tudor Street, LONDON, E.C., also from all Booksellers.

When buying Wires for BOWDEN CONTROLS, see you get the genuine

"BOWDEN-CONTROL" WIRES——made by

The Bowden Brake Co., Ltd.,

and thus ensure the easy manipulation and perfect control of the best and strongest wire mechanism.

—To facilitate ordering we here illustrate and price the various wires we make.

—Full details of all our other Fitments are described in 1912 Booklet, sent free on request—ask for copy NOW.



Our Bowden Enamelled Wire, B.E.W.
(One size only, to take inner wire, 1/10 in. diameter). Price 1½d. per foot.



Bowden Waterproof Covered Wire, B.C.W.,
No. 1. (To take inner wire, 1/10 in. diameter.) Price 5½d. per foot.

Bowden Waterproof Covered Wire, B.C.W.,
No. 2. (To take inner wire, 5/64 in. diameter.) Price 9d. per foot.



Bowden Waterproof Armoured Wire, B.A.W.,
No. 1. (To take inner wire, 1/10 in. diameter.) Price 10d. per foot.

Bowden Waterproof Armoured Wire, B.A.W.,
No. 2. (To take inner wire, 5/64 in. diameter.) Price 1/2 per foot.

Inner Wire only, No. 1. (1/10 in. diameter.) Price ½d. per foot.
" " " No. 2. (5/64 in. ") Price 1d. " "

THE BOWDEN BRAKE CO., Ltd., TYSELEY, Birmingham.

Telegraphic Address: "Bowden, Acocks Green."

Telephones: Acocks Green, 103 and 104.

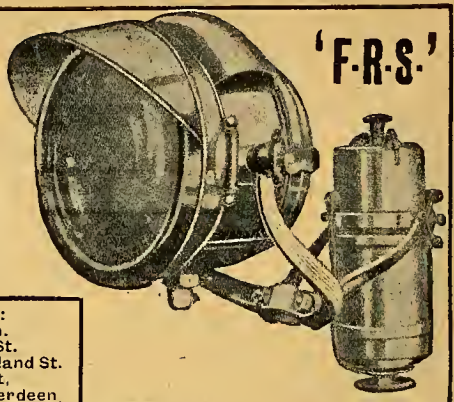
R.H.S.

In answering this advertisement it is desirable to mention "The Motor Cycle."

THE LAMP WITH THE FAMOUS

RECORD BEAMS.

47/6 to 78/6



Enabled the Clyno to win Wells Cup, London-Edinburgh.

The Generator which burns for 8 hours and riddles the carbide.

HALL Ltd., Wrottesley St., BIRMINGHAM.

60, Shoe Lane, London, E.C.
24, Queen Street, Glasgow.
18, Swinton Row, Edinburgh.
18, Eldon Square, Newcastle.

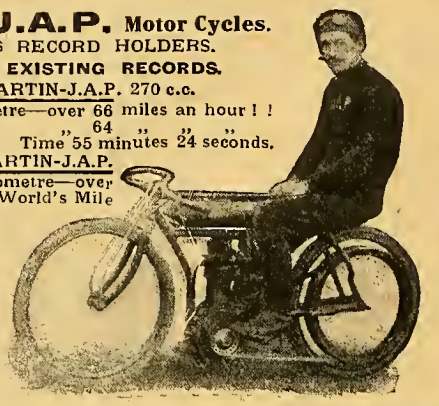
SPECIAL AGENTS:
Service Co., High Holborn.
Taylor & Co., 21a, Store St.
Robertsons, 157, Gt. Portland St.
Cruickshank, The Viaduct, Aberdeen.

MARTIN-J.A.P. Motor Cycles.
THE WORLD'S RECORD HOLDERS.
BROOKLANDS EXISTING RECORDS.

CLASS A. 1¾ h.p. MARTIN-J.A.P. 270 c.c.
World's Kilometre—over 66 miles an hour ! !
" Mile " 64 " " "
" 50 Miles Time 55 minutes 24 seconds.

CLASS B. 2¾ h.p. MARTIN-J.A.P.
345 c.c. World's Kilometre—over 68 miles an hour ! ! World's Mile over 65 miles an hr.

Latest Successes: Tunbridge Wells Sports, Whit-Monday, May 27, 1912. — Martin Motor Cycles swept the board, winning every event. Still unbeaten.

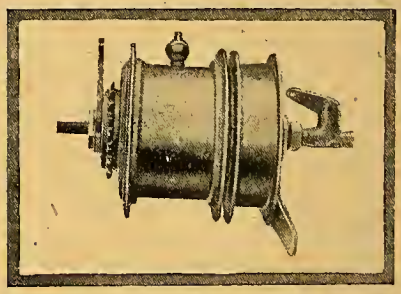


H. MARTIN & CO.,
Works: Leslie Grove, East Croydon, Surrey

THE THORNTON 2-SPEED AND FREE ENGINE HUB.

Combining—
STRENGTH,
SIMPLICITY,
AND
EFFICIENCY

Price £8.

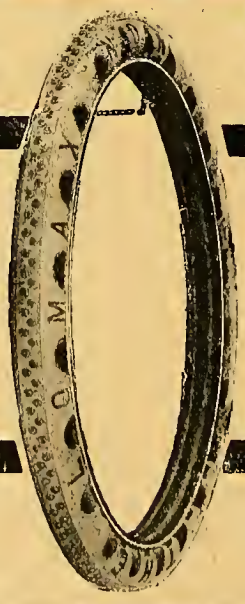


Particulars from
THE LEICESTER GEAR CO., THORNTON LANE, LEICESTER.

Economical. Puncture-proof.
Light. Rigid. Good. Cheap.
Detachable. Durable.

Best English Chrome Leather, impervious to wet. Fitted with Steel Studs that will not pull out. Attached to tyre by means of clips which clinch the rim. You can fit it yourself.

LOMAX BANDS



Try one over that old tyre of yours.

Accept no imitations. Get our list from

The Lomax Tyre Company
(Dept. YN.). William St., BIRMINGHAM.

Write for particulars of the **S.I.A.M.T.** Lightweight. 2¼ h.p. 35 gns. Immediate delivery.

RADIUM S.I.A.M.T., Ltd., 336, Gray's Inn Road, W.C.
SOLE AGENTS FOR BRITISH ISLES AND COLONIES. 'Phone 9852 City.

COMPULSORY SALE.

ALL MUST BE SOLD.

If the following machines don't suit you, send for a List. We have over 100 to dispose of, and are out to shift them, as we have no room for the new stuff that is being continually sent along. We have just received a consignment of Morgans, A.C.'s, and several little cars, besides a heavy lot of Clyno Sidecars, and other things of that character, which fill up the Garage.

NEW DEPARTURE.

We are now prepared to sell practically any new machine on the market at £10 down, and the remainder by monthly instalments. This is the height of perfection in the way of Deferred Payment Business, and we await your commands.

1911 **BRADBURY,** 3½ h.p., M.O.V., B. and B. carburetter, spring forks, free engine, Bosch magneto, two brakes, footrests, pedals, stand, carrier, toolbag, enamelling and plating good **£35**

1911 **TRIUMPH,** 3½ h.p., free engine, M.O.V., spring forks, h.b.c., enamelling and plating very good, tyres 26×2¼in., almost new **£40**

1911 **TRIUMPH,** 3½ h.p., M.O.V., h.b.c., free engine, spring forks, wheels 26×2¼in., tyres Bates' back and front, pedals, front and back wheel stands, carrier, enamelling and plating very good .. **£42**

KERRY ABINGDON, 3½ h.p., 1911, M.O.V., B. and B. carburetter. h.b.c., Mabon free engine, Druid spring forks, 26×2¼in. wheels, "Kerry" rubber-studded tyres in good order, enamelling and plating perfect, stand, carrier, pedals, footrests etc., **£35**

1911 **DOUGLAS,** 2¾ h.p., M.O.V., Douglas carburetter, h.b.c., 26×2in. rubber standard tyres, spring forks, ¾in. Lyso rubber belt, stand, carrier, two pannier toolbags, enamelling and plating like new, pedals **£33**

1911 **REX,** 5-6 h.p., M.O.V., B. and B. carburetter, h.b.c., Bosch magneto, 2-speed gear and free engine, spring fork and seat, adjustable pulley, 26×2¼in. Michelin tyre back, Continental front, long footboards, rin. rubber belt, handle starting, and altogether like new **£45**

1910 and Older.

REX, 1910 model, 2-speed and free engine, 3½ h.p., M.O.V., B. and B. carburetter, h.b.c., wheels 26×2¼in., new tyres, spring forks, Cantilever spring seat, drip feed, two brakes, enamelling and plating very good ..... **£32 10s.**

PREMIER, 3½ h.p., M.O.V., 1910, White and Poppe engine, B. and B. carburetter, h.b.c., spring forks, tyres Continental front, Palmer Cord back, in good order, stand, carrier, toolbag, enamelling and plating like new **£25**

DOUGLAS, 2¾ h.p., M.O.V., h.b.c., 1910 model, spring forks, tyres 26×2in. Rom studded in perfect order, footrests, pedals, two strong brakes, Dunlop rubber belt, enamelling and plating in good order **£25**

ROYAL ENFIELD, 2¾ h.p., M.O.V., h.b.c., 1910 model, spring forks, belt drive, tyres 26×2in. in very good order, footrests, pedals, stand, carrier, enamelling and plating very good **£20**

MOTO-REVE, 1910 model, 2 h.p., A.I.V., h.b.c., Druid spring forks, tyres 26×2in. A Won back and front, ⅝in. rubber belt, Ukantes stands, enamelled black, plating good, machine in very good order **£20**

N.S.U., 3½ h.p., M.O.V., Amac carburetter, h.b.c., Fitall 2-speed gear, tyres 26×2¼in. rubber-studded back, Continental front, in good order, footrests, pedals, stand, carrier, spring forks, long bars, low-tension magneto, in good going order .. **£15 10s.**

F.N., 2¾ h.p., M.O.V., B. and B. carburetter, h.b.c., 2-speed and free engine, magneto set in front, spring forks, tyres 26×2in. Clipper back, plain front, in good order, stand, carrier, pedals, enamelling and plating in good order ..... **£22 10s.**

REX, 5-6 h.p., 1908 model, A.I.V., Amac carburetter, h.b.c., spring forks and seat, Bosch magneto, tyres 26×2¼in. Sirdar back, Michelin front, long bars, low riding position, free-engine model, strong carrier, enamelling and plating very good **£25**

MOTOSACOCHE, 1¾ h.p., A.I.V., h.b.c., free engine, Druid spring forks, Advance adjustable pulley, 26×2in. Clincher tyres back and front, two brakes, stand, carrier, pedals, large saddle, enamelling and plating like new **£20**

TRIUMPH, 3½ h.p., M.O.V., 1910 model, 26×2¼in. wheels, tyres Michelin front, Goodrich studded back, enamelling and plating in first-class condition **£32**

REX, 5-6 h.p., A.I.V., Amac carburetter, h.b.c., spring forks, 1907 model, free engine, twin wheel on back, tyres in good order, footboards, Cantilever seat, low riding position, long handle-bars, enamelling and plating very fair **£18**

N.S.U., 3 h.p., tank control carburetter, studded tyres, leather belt, pedals, footrests, band brakes, useful bike, most reliable ..... **£13 10s.**

QUADRANT, 4 h.p., spring forks, ¾in. belt, B. and B. carburetter, Brooks' saddle, long handle-bars and footboards, 26×2¼in. tyres, Reflex front, Hermetic light car tyre on back, 650×65 mm., **£16**

N.S.U., 3 h.p., M.O.V., B. and B. carburetter, h.b.c., low-tension magneto, girder forks, wheels 26×2¼in., tyres in good order, Shamrock-Excelsior footrests, stand, pedals ¾in. rubber belt, enamelled green, plating fair, low riding position, long bars, strong foot brake ..... **£17 10s.**

N.S.U., 3 h.p., h.b.c., B. and B. carburetter, 26×2¼in. studded tyres, low-tension magneto, footrests, pedals, stands, carrier, Brooks' saddle, nice useful machine **£12**

N.S.U., 3½ h.p., M.O.V., h.b.c., low-tension magneto, tyres new, newly enamelled black, strong back brake, stand, carrier, long handle-bars, in good going order ..... **£12 10s.**

HITCHEN'S, LTD.,

MORECAMBE.

Telephone: 112. Wires: "Motor, Morecambe."

A

MORGAN

Runabout

in stock.

Immediate delivery at

WHITELEY'S,

Queen's Road, W.

See that Security Sleeve ?



It overcomes the one disadvantage of the Butt-ended Tube—bursting at the ends. It is the feature of the **"Challiner" Patent Butt-ended Tube.** With it you have the security of the endless tube and the handiness of the butt-ended one.

The Security Sleeve is fixed to the rim by the winged nut and bolt; the butt ends of the tube fit in it like a glove.

The centre of the Security Sleeve is a bulkhead of insulated canvas which makes *bursting of the ends an impossibility.*

'Challiner' Patent Butt-ended Tubes are burst-proof at the ends.

If a tyre fitted with this tube were inflated to bursting point, *the burst could not occur at the ends.*

The bulkhead keeps the Tube ends firmly in position; and being fixed to the rim directly opposite the valve, it prevents all 'creeping.' "Creeping" of the Butt-end Joint is what causes other tubes to burst.

Fit "Challiner's" to your mount now!

PRICES (complete with Sleeve)

26" x 2"	26" x 2¼"	(600 x 65 m/m) 26" x 2½"	700 x 75 m/m
15/-	**16/6**	**17/-**	**20/-**

Sent post free on receipt of price.

Shrewsbury & Challiner Tyre Co. Ltd.,

MANCHESTER. LONDON. BIRMINGHAM.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII.
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION IX.
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

GREATEST CHOICE.

Everything in Stock, and the largest selection in the Trade. Where we advertise one New machine we have generally more, while of Second-hands we have generally a variety of every make. That's what



ENSURES SATISFACTION AT

WAUCHOPE'S

OUR TO-DAY'S BARGAIN LIST INCLUDES

5566.	3½	h p	1900 **TRIUMPH**	£31 0
5571.	2¾	h.p.	**HUMBER**	£15 0
5572.	3½	h.p.	1912 2-speed **BRADBURY**	£47 10
5573.	3½	h.p.	1909 **TRIUMPH**	£30 0
5574.	2	h.p.	1911 3-speed **HUMBER** ..	£32 10
5584.	3½	h.p.	1911 2-speed **KERRY-ABINGDON** and sidecar	£42 10
5585.	3½	h.p.	1911 2-speed **HUMBER** ..	£37 10
5586.	3½	h.p.	1911 standard **BAT**	£35 0
5587.	9	h.p.	1908 **BAT-J.A.P.**	£27 10
4260.	2¾	h.p.	**BRADBURY**	£8 10
5158.	3½	h.p.	1908 2-speed **N.S.U.** and sidecar	£25 0
5169.	5	h.p.	1908 twin **G.B.**	£20 0
3931.	5	h.p.	1910 tourist **REX**	£30 0
5504.	3½	h.p.	1910 **PREMIER,** Mabon free engine	£24 0
5506.	2¾	h.p.	1911 Twin **CAMPION**	£27 10
5519.	3½	h.p.	1910 Standard **TRIUMPH**	£33 0
5532.	6	h.p.	1912 **REX** Sidette	£60 0
5540.	8	h.p.	1911 2 speed **MATCHLESS** and sidecar	£57 10
5542.	3½	h.p.	**QUADRANT**	£17 10
5543.	3½	h.p.	1911 3-sp. Lady's **HOBART**	£35 0
5547.	6	h.p.	1911 **ZENITH GRADUA** and sidecar	£63 0
5555.	3½	h.p.	1910 Free-engine **TRIUMPH**	£38 10
5559.	3½	h.p.	1908 **TRIUMPH**	£29 0
5560.	2¾	h.p.	1912 Standard **PREMIER**	£30 0
5562.	2¾	h.p.	1909 **DOUGLAS,** Roc 2-sp.	£29 0
5036.	2½	h.p.	1911 **MOTOSACOCHE**	£27 0
5009.	3½	h.p.	1911 T.T. **BRADBURY** ..	£32 0
5055.	3½	h.p.	1911 **L.M.C.,** variable gear	£35 0
5287.	2¾	h.p.	1911 **DOUGLAS**	£28 0
5006.	3½	h.p.	1910 T.T. **TRIUMPH**	£34 0
5066.	3½	h.p.	1911 **BRADBURY,** Mabon cl.	£37 10
5332.	5-6	h.p.	1911 4-cyl. **F.N.**	£33 10
5358.	2¾	h.p.	1912 2-speed **ENFIELD** ..	£47 0
4420.	3½	h.p.	1911 Free Engine **PREMIER**	£38 10
5441.	3½	h.p.	1911 **BRADBURY**	£35 0
5468.	3½	h.p.	1911 **BRADBURY**	£35 0
5327.	7	h.p.	1911 2-speed **REX DE LUXE**	£45 0
5285.	2	h.p.	1910 **MOTO-REVE**	£20 0
4863.	3½	h.p.	1911 **CHATER-J.A.P.**	£32 0
5420.	2¾	h.p.	1911 2-speed **ENFIELD** ..	£40 0
5424.	3½	h.p.	1912 F.E. **BRADBURY** ..	£48 10
5460.	2¾	h.p.	1910 2-speed **F.N.**	£27 10
5471.	3½	h.p.	1911 F.E. **BRADBURY** ..	£38 0
5293.	2¾	h.p.	1911 **ENFIELD**	£40 0
4865.	2½	h.p.	1911 **HANDY HOBART** ..	£25 0
4957.	8	h.p.	1910 **BAT-J.A.P.**	£35 0
5290.	5-6	h.p.	4-cyl. **F.N.**	£33 10
4393.	3½	h.p.	1911 T.T. **PEUGEOT**	£27 10
4425.	3½	h.p.	1911 F.E. **PREMIER**	£37 10
4226.	3½	h.p.	**MIDGET BICAR**	£20 0
4784.	3½	h.p.	1911 T.T. **ARIEL**	£28 10
5333.	2	h.p.	1909 **MOTO-REVE**	£21 0
5448.	3½	h.p.	1911 Cone Clutch **REX** ..	£35 0

LIST SENT FREE.

CALL AND SEE OUR MATCHLESS SHOW. FINEST VALUE AND LOWEST PRICES IN THE TRADE, AND MOST LIBERAL EXCHANGE TERMS EVER OFFERED.

9, SHOE LANE, FLEET STREET, LONDON, E.C.

'Phone: Holborn, 5777.
Wires: "Opificer, London."



NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or it "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

NEW 1912 Motor Cycles in stock, for immediate delivery:

TWO 3½h.p. Humbers, standard and 2-speed gears; £47/10 and £52/10.

THREE 3½h.p. B.S.A.'s, standard, free engine, and 2-speed gears; £50, £56/10, and £60 respectively.

ONE Triumph, standard; £48/15.

ONE Royal Enfield, 2¾h.p., 2-speed; 50 guineas.

ONE 6h.p. Royal Enfield Sidecar Combination; £84.

THESE we can offer for immediate delivery, being absolutely in stock, but of course being subject to being sold on reply.—Write, wire, or telephone for further particulars, catalogues, or booklets, to Turvey and Co., The Motor House of the North, Sunderland. Tel.: No. 626. [X955

TRIUMPHS, Humbers, B.S.A., Royal Enfield motor cycles, lightweights, 2 speeds, free engines; write, wire, or 'phone for immediate deliveries.—Turvey and Co., The Motor House, Sunderland. Tel.: No. 626. [0061

2¾h.p. Motor Cycle, 26in. wheels, running order; £8. —Particulars, Geo. Bainbridge, Witton Gilbert, Durham. [X1635

2h.p. Humber, 1911, in excellent condition throughout; £25.—G. E. Musgrave, Langdale Terrace, Windermere. [0839

ENFIELD, 1911, 2¾h.p., 2-speed model, just overhauled; £37/10, or nearest cash offer.—Herdman, Alston, Cumberland. [X1673

NEW 1912 B.S.A., Indians, Enfields, also lightweight Singer £25; immediate delivery from stock.—McAdams, Stockton-on-Tees. [X1596

1912 Phelon and Moores, free engine Triumphs, Douglases, Bradburys, B.S.A.'s, Enfields, in stock. —Phone: 1X2. Stout's Garage, Egremont, Cumberland. [0059

2½h.p. J.A.P., 1912, m.o.i.v., Palmer cords, Bosch, Chater frame, Druids, done about 2,000 miles; £25, offers invited.—Hughes, shoemaker, Chester Rd., Sunderland. [0962

TRIUMPH, 1912, just delivered, free engine, lamp and horn, £49/10; Triumph, 1909, just overhauled, new tyre on back, new belt, lamp and horn, £25.—Geo. Newsham, maltster, Milnthorpe, Westmorland. [0974

SECTION II.

York and Lancashire.

1912 Model G. Douglas in stock, £41.—Cross, agent, Rotherham. [X1929

1912 Triumph, free engine, in stock; Rover, F.E., in stock, £55.—Cross, Triumph, Matchless, and Bradbury agent, Rotherham. [X1930

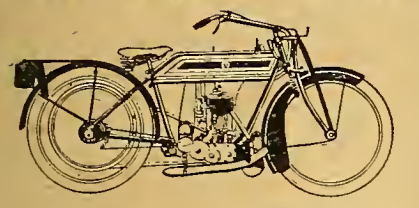
1908 Triumph, in good condition, lamp, spares; £25 —Frank Pearson, Bedale. [0682

The Halifax Motor Exchange

Largest Rex Dealers, 16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams, "Perfection."

BRAND NEW 1911 REXES.



	Makers' price.	Ours.
3½ h.p. Rex Tourist	43 guineas	**34 guineas**
3½ h.p. Free-engine	48 guineas	**39 guineas**
3½ h.p. 2-speed De Luxe	57 guineas	**46 guineas**
5 h.p. 2-speed De Luxe	60 guineas	**51 guineas**

All new and guaranteed. Exchanges liberally dealt with.

SPECIAL.—Easy payments at 5% extra. Low deposits twelve monthly payments.

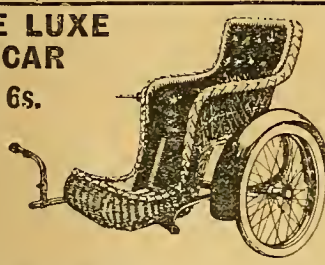
£3 to £5 DOWN

and 5/- weekly secures prompt despatch of

2¼ h.p. **J.A.P.**, Clement-Garrard frame	£8 10
Twin magneto **MOTO-REVE**, Druids	£15 0
3 h.p. **QUADRANT**	£10 10
2¾ h.p. **KERRY**	£10 10
2¾ h.p. **BAT**, spring frame	£10 10
3¼ h.p. light low **REX**, very smart	£12 10
2¾ h.p. **DE DION**	£10 10
2¼ h.p. **J.A.P.**, spring frame, h.b. control	£9 10
3½ h.p. **M.M.C.**, torpedo tank	£10 10

1912 DE LUXE SIDECAR

£6 6s.



"Exchange," with Continental motor cycle tyre	£5 5 0
"De Luxe," with best tyre, apron, footmat	£6 6 0
Ditto, with reversible child's seat	£7 0 0
Ditto, with best coach-built body	£7 12 6

Improved Quick Detachable Joints, cranked extra strong back axle and spindle, tip-up body, and caged ball races to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

Discount to trade. Exchanges entertained.

GUARANTEED IN RUNNING ORDER.

1912 3½ h.p. standard **BRADBURY**, NEW	£43 0
1912 3½ h.p. 3-speed **BRADBURY**	£53 0
1912 twin **REX** Sidette	£75 0
1911 3½ h.p. 2-speed **N.S.U.** and new sidecar	£39 10
1912 2-speed **REX** Junior. Liberal exchange	£45 0
1911 3½ h.p. tourist **REX**, done 100 miles	£32 10
SCOTT 2-speed. Aug., 1910	£37 10
1911 3½ h.p. **REX**, clutch model, as new	£34 10
1911 5 h.p. 2-speed **REX DE LUXE**	£47 10
1910 7 h.p. twin **REX**. HOT STUFF	£37 10
1910 2-speed twin **REX DE LUXE**	£33 10
1910 3½ h.p. Tourist Trophy **REX**	£29 10
1910 5 h.p. **REX**, very fast. Special machine	£29 10
1911 2-speed twin **REX DE LUXE**, soiled only	49 Gns
3 h.p. magneto **TRIUMPH**, spring forks	£23 10
3½ h.p. magneto **REX**, spring forks	£19 19
3½ h.p. **REX**, h.b. control, 26in. wheels	£12 10
Twin **MOTO-REVE**, magneto, Druids	£15 0
5½ h.p. 2-speed twin **REX**, good and reliable	£34 10
3 h.p. **QUADRANT**, low frame	£10 10
2¾ h.p. **KERRY**	£10 10

Easy Payments at Special Rates.

£7

deposit and **10/-** weekly secures—

2¾ h.p. Mag. **MINERVA**, chain drive	£16 10
2¾ h.p. **R. and P.**, magneto	£14 10
3 h.p. Magneto **TRIUMPH**	£23 10
3½ h.p. Magneto **REX**	£19 19
2¾ h.p. Twin **MOTO-REVE**, Druids	£19 19
2¼ h.p. **REX** Magneto Lightweight	£16 10

SUNDRIES.

3 h.p. Stevens Engine, almost as new	£2 5
3½ h.p. M.M.C.	£2 2
Myer's Motor Cycle Stands	3/-
New Cane Sidecar Body	17/6
28 × 2¼ New Calmon Covers	17/6
26 × 2 Continental Covers	15/6

MOTOR BICYCLES FOR SALE.

CLYNOS.—Note the reliability and regularity of running in London-Edinburgh run. First again. Why not be a proud owner of the best sidecar machine, and let it be now. I can supply.—Potter, Leicester Grove, Leeds. [X1920

1912 Humber 2-speed and Humber twin and lightweight models, Rover single-speed and 3-speed sidecar models, Millford and Canoelet sidecars, and any make of motor cycle supplied.—Madgwick's, 79, Knowsley St., Bolton. [X1652

HUMBER Lightweight, 2h.p., late 1911, perfect condition, B.B. carburetter, Bosch magneto, Dunlop tyres and belt, adjustable pulley horn, tools, and spares; buying sidecar machine; accept £25.—Poyntz, 23, Chaddock St., Preston, Lancs. [X1900

HUMBER, 1910¾, 3½h.p., 2 speeds, Bosch, Druids, Brooks B104 Whittle, lamp, horn, accessories, spares, tyres new condition, sidecar, splendid shape, perfect; purchasing runabout; can be seen any time; £35.—2, Grahams Terrace, Wakefield. [X1927

1909 Rex de Luxe, Millford sidecar, Saxon spring forks, Voiturette back wheel and tyre, Whittle, Watawata and rubber belts, Lucas head and sidecar lamps, extra cover, tube, spares; cash £32.—Sidecar, Underbank, Hebden Bridge, Yorks. [0684

LINCOLN Elk, 3½h.p., late 1910, Druids, Bosch, B.B., Palmers, new back, new belt, spares, just been thoroughly overhauled, in tip-top condition, not a racer, but fast and good hill-climber; £25, or nearest.—George Barker, 96, Lancar Rd., Bentley, Doncaster. [X1679

ELSWICK-PRECISION, 4½h.p., Armstrong 3-speed, free engine, new last month, only done 150 miles; also Rudge Multi, new April, done 200 miles; both machines ideal for either sidecar or solo work; nearest offer to £50 each; can be seen by appointment.—Walter Dean, 10, Aitken St., Accrington. [X1982

NORTHERN Depot, Ltd., Everything Motorish, Leece St., Liverpool.—Latest 1912 models in stock, Kerry clutch and standard, also 1912 sho-soiled clutch Kerry, £48; 1912 model G Douglas, clutch 1912 Triumph, cone (clutch Rex-Jap, 4h.p.) Bradbury 2-speed, adjustable pulley; shop-soiled Rover, with Mark 111 Armstrong gear, Brooks pan seat, £60. [X1912

5h.p. Bat-Jap, late 1911, covered 2,000 miles, speedometer, Lucas horn and lamp, Brooks, pannier bag, Mabon clutch, etc., equal to new, £48; 4½h.p. twin Minerva, 1910, Chater-Lea sidecar, complete with lamp, spares, etc., £38/10; Fitall 2-speed gear for above, £5; 2¼h.p. Rex, magneto, nice low machine, £14.—Myerscough and Dunsmore, 25, Liverpool Rd., Great Crosby, Lancashire. [X1770

GREAT Sale of motor cycles.—3½h.p. Rex, £7/10; 4h.p. Chater-Lea, magneto, spring forks, B. and B., £12; 3h.p. Triumph, £9; 1909 Douglas, £18/10; 1911 Kerry-Abingdon, £28; 5-6h.p. Rex, 1909, twin-cyl., free engine, and sidecar, £25, worth £40; 1908 Triumph, new condition, £25; P. and M., nearly new, 2-speed, free engine, £37/10; we have about 60 second-hand motor bikes in stock, consisting of 1907, 1908, 1909, 1910 Triumphs, prices from £15; several Bradburys, Singers, M to-Reves; all machines sold are warranted in good order; sidecars from 50/-.—The Motor Cycle Exchange, 160, Young St., Sheffield. [0100

GIVING Up Motor Cycles and Light Motors.—2¾h.p. Singer's motor tricycle, magneto, good order, £5; 2¾h.p. inclined engine, in good motor cycle, light, £6; 2h.p. C.L.N. Triumph lightweight, all very good, £7; 3h.p. Quadrant, light built, narrow tank, good, £8; 3½h.p. twin Clement, 26 wheels, light, fair order, £9; 3h.p. P. and M., chain-driven, F.E., low built, good, £10; 8-10h.p. 2-cyl. W.C. duocar, 3 wheels, 2 speeds, good, £30; 6-8h.p. 1-cyl. 2-seater light car, fast, reliable, £25; 10-12h.p. 3-cyl. 2-seater, light, fast, racy car, £40; 8h.p. and 10h.p. Stanley steam cars, good order, £30 and £50; 14-16h.p. and 20h.p., 4 cyls., S.E. cars, 5-seaters, from £45; light tubular chassis, with wheels, etc., 80/-, 95/-; axles, with 2-speed gears, 45/-; central chains, 30/-; magnetos, gear boxes, tyres and wheels, engines, steerings, clutches; please state your requirements to us; wanted, good lathe, sidecar combination, tricar, ox-acetylene welding plant.—49, Bank Parade, Burnley. [X1993

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

1911 Ariel 3½h.p., decompresser, variable gear; £30, no offers.—Beech, Draycott, Derby. [X1624

ROVER, 1911, F.E., Miller lamp set, horn, tools, perfect; £39.—Jackson, Mill St., Congleton. [X1576

ARIEL Lightweight, magneto; any trial here; £15.—Hill, High St., Abbot's Bromley, Staffs. [0819

BRADBURY, Aug., 1910, in fine condition, splendid sidecar machine; £31.—16, Eastgate, Stafford. [X1075

2¾h.p. Campion, Minerva engine, just spent £12/10 on it, bargain, £18.—Newsum, pawnbroker, Bolsover. [0680

1910½ Douglas, very little wear, splendid condition, extra padded saddle; £24.—20, Northenden Rd., Sale. [X1886

NEW Multi-speed Rudge; owner ordered abroad; best cash offers.—No. 713, *The Motor Cycle* Offices, Coventry. [X1925

N.S.U. Lightweight, 1¾h.p., 1909, magneto, splendid order; approval; 12 guineas.—Bone, Ivanhoe, Llandudno. [X905

REY

5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.

Tele: "Rey, Hampstead." Tel: 2678, P.O., Hampstead.

EXTENDED PAYMENTS

Taken on any Machine or Runabout.

Following 1912 Machines for

IMMEDIATE DELIVERY

AND IN STOCK:

F.N., 5-6 h.p., Multiple disc clutch	£53 0
TRIUMPH T.T. Roadster, 1912	£50 0
TRIUMPH Standard Model	£48 15
TRIUMPH 1912 F.E. Model	£55 0
RUDGE Multi-speed, 1912	£60 0
RUDGE Standard Model	£48 15
RUDGE T.T. Model	£49 15
RUDGE F.E. Model	£55 0
BRADBURY, 3½ h.p. 2-speed, chain driven	£53 10
BRADBURY Standard Model	£48 0
BRADBURY F.E. Model	£54 10
BRADBURY T.T. Model	£48 0
BRADBURY, 2-speed Model	£55 0
A.C., 1912, 3 weeks	£87 10
CLYNO 5-6 h.p. 1912 2-speed Model	65 Gns
P. and M. 3½ h.p. 1912 2-speed Model	£65 0
B.S.A. 3½ h.p. 1912 2-speed Model	£60 0
B.S.A. 3½ h.p. 1912 Standard Model	£50 0
ZENITH 8 h.p. Model	69 Gns
ZENITH 6 h.p. Model	67 Gns
ZENITH 3½ h.p. Model	53 Gns
DOUGLAS L Lady's Model	£52 0
DOUGLAS J T.T. Model	£47 0
DOUGLAS G Standard Model	£41 0
DOUGLAS Model K	£50 0
SINGER 2-speed 4 h.p. Sidecar Model	£65 0
SINGER 3½ h.p. 3-speed Model	£58 10
LINCOLN ELK 3½ h.p. Standard Model	£34 0
HUMBER 3½ h.p. 2-speed Model	£52 10
BAT 6 h.p. Standard Model	£53 0

G. and N. Runabout in four weeks.

Any other makes on application.

TRADE SUPPLIED WITH VARIOUS MAKES.

LIBERAL DISCOUNTS ALLOWED.

Machines at Bargain Prices to Clear.

2011.	**F.N.**, 1911 model, 6 h.p., like new	£35 0
2047.	**F.N.**, 2¼ h.p., 2-speed gear	£26 0
1955.	**F.N.**, 4-cyl., 6 h.p., good order	£35 0
1906.	**F.N.**, 4-cyl., 1911, with sidecar	£35 0
1966.	**F.N.**, 2¾ h.p., magneto, splendid order	£15 0
1858.	**F.N.**, 2¼ h.p., 2-speed, 1910¾	£25 0
1968.	**REX**, 1910½, 3½ h.p.	£25 0
2066.	**J.A.P.-CHATER-LEA**, 4 h.p., 1911	£29 0
2146.	**DOUGLAS**, 1910, fine order	£24 0
1640.	**ZENITH**, 1911, 3½ h.p., good order	£40 0
2063.	**F.N.**, 4-cyl., nice order	£25 0
2135.	**ZEDEL** Twin, 6 h.p., Chater fitting	£22 0
	N.S.U., 2-speed gear, 1912, as new, to fit Rudge	£6 10
	RUDGE T.T., 1912, as new	£40 0
	MILLFORD Spring Wheel Sidecar, cane, 1911	£8 0

All Accessories included on S.H. at the price advertised.



The £4-10 REY Sidecar £3-10

With Hutchinson or Michelin 26 × 2¼ tyre and tube, 30/- extra.

The famous "REY" EXHAUST WHISTLE now reduced to 12/6 each. Triumph standard type.

The "REY" LEATHER BELTING outlasts two of any other makes. Price 2/- per foot.

—— SPECIAL DISCOUNTS TO TRADE. ——

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY.

REY

5, HEATH STREET, HAMPSTEAD.

Caught on!!

OUR REED CANE BODIES

have undoubtedly hit the mark.

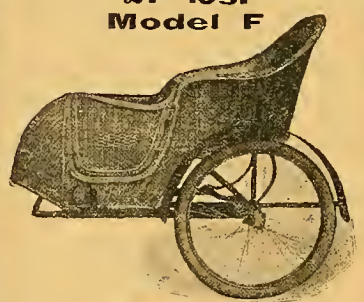
Undoubtedly this class of cane is far superior and more classy than ordinary cane or wicker work, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

Model E



£7 10s.

Model F



£8 8s.

OUR POPULAR MODELS ARE GOING STRONG.



Model de Luxe.—£6 6s.



Model C.—£7.



Model E.—£7 5s.



Model D.—£8.

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID. Send for list.

MISCELLANEOUS BARGAINS.

1912 Senspray Carburetter, nearly new ..	£1 0
1912 B & B. Caburetter, variable jet	£1 0
Amac Carburetter, H.B. control, good	12/6
4½ h.p. Aster Engine, water-cooled.....	£4 10
4½ h.p. Buchet Engine, water-cooled	£4 10
2 h.p. Stationary Engine water-cooled	£4 10
3 h.p. Simms Engine, M.O.V.....	50/-
Leamington Passenger Chair, new	12/6
Cocoanut Fibre Sidecar, foot-mats	3/-
Albion Clutch, fits Triumph	47/6
New Screw-cutting Lathe, 4in. centres	£6 10
Brooks's B105 Saddle	10/6
Brooks's B130 New Saddle, 1912 model	14/6

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane, HALIFAX (Two minutes from G.P.O.)

Telephone 919.

MOTOR BICYCLES FOR SALE.

1912 T.T. Triumph, done 600; £45, or nearest.—F. N. Jones, Stottesdon, Clewbury Mortimer, Salop. [0976

MOTOSACOCHE, spring forks, tyres perfect; bargain, £11.—J. Davies, Alma Cottage, Maesgwyn Rd., Wrexham. [X1754

BRADBURY, 3½h.p., 1912, Sturmey-Archer 3-speed and free engine models, in stock.—Williams, agent, Congleton. [X1932

SEPT., 1910, Humber, 3½h.p., exceedingly powerful, good condition; £28; exchange 2-speed.—Haskard, Friargate, Derby. [0865

ZENITHS, 3½h.p., in stock, ready for immediate delivery, fresh from the works.—Paskells, 250, Stafford St., Walsall. [0795

MOTO-REVE, 2h.p., 1910¾, thoroughly overhauled, splendid condition, new belt, spares; £17.—Mouch, Crumpwell, Oswestry. [0911

IMMEDIATE or Early Delivery of 1912 Models, any make; Triumph, Clyno, Douglas, Rudge Multi, and Bradbury 3-speed, in stock.—Moss, Wem. [X1771

RILEY, 6h.p. twin, m.o.v., low built, as new, a shifter, do 60 easily; real bargain, only wants seeing; £35.—Moss, Wem. [X1772

1910 Triumph, N.S.U. 2-speed gear, F.R.S. back rest, A.S.L. seat pillar, tools, spares; £34, what offers?—Vickers, Newport, Salop. [X1629

1912 F.E. Rudge, speedometer, spare belt, not two months old, will do 60 easy; owner going abroad; £53.—White Lodge, Bromborough, Cheshire. [X1865

1912 Bradbury, speed model, 2 weeks old, B.E. tyres, Druid forks, perfect, £46; with Bradbury sidecar, £54.—Hall and Co., Bradbury agents, Matlock. [X1793

3½h.p. Minerva Motor Cycle, good running order, new Dunlop belt, spring forks, lamp; £14/10, or part exchange; seen any time.—Brookes, cycle agent, Darley Dale. [0741

TRIUMPH, 1909¼, 1912 piston and connecting rod recently overhauled, excellent condition, Palmer, Midland tyres; £28.—F.G.H., 65, Jeffcock Rd., Wolverhampton. [X1826

TRIUMPH 1911 T.T., as new, £35; Triumph free engine, 1910, £34; Bradbury and sidecar, 1910, £32; Rex twin and sidecar, 1911, £40; Rex 3½h.p., magneto, £15.—Parker, Melbourne, Derby. [X1897

1910¾ 3½h.p. Lincoln Elk, N.S.U. 2-speed, free engine, torpedo sidecar, lamp, tyres as new, not run 1,000 miles, ready for the road, complete; £28; exchange, or separate.—Howard, Bridge St., Bakewell. [X1705

TRIUMPHS. Zeniths, both models, Enfield sidecar combination, Enfield 2½h.p., 2-speed. Singer 2½h.p., 2-speed, Calcott lightweights; above 1912 models actually in stock; big allowances on exchange.—Parker, Melbourne, Derby. [X1896

SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

A.C.'s, immediate delivery.—Smith, 7, Glenfield Rd., Leicester. [X513

HUMBER, 1911, 3½h.p., 2-speed, £35, with sidecar £38.—358 Stratford Rd., Birmingham. [0942

REX, 3½h.p., Fit-all 2-speed gear, h.h.c., splendid condition; a bargain, £13/10.—Sanders, Quorn. [0668

1912 Singer, free engine, just delivered; cash offers wanted.—68a, Regent St., Leamington. [X1813

ARNO, 3½h.p. T.T., 1912, as new, fast; £40, or offer.—Newsome, Sherbourne House, Coventry. [X1642

3h.p. Pebok, vertical, all splendid condition; £8; will ride 40 miles.—Barratt, Kibworth, Leicester. [X1696

1911 5-6h.p. F.N., 4-cyl., bevel gear transmission, excellent order; £30.—Plastow, Grimsby. [X1944

2¾h.p. Minerva, Bosch magneto, fitted with Roc 2-speed gear, handle starting; £16/10.—Plastow, Grimsby. [X1945

1911 Humber, 2-speed, complete, lamp, horn, whistle, etc., run 2,000 miles, new condition; £37/10.—Plastow, Grimsby. [X1926

DOUGLAS, model G.'s in stock, K.'s next week. Book now.—Colmore Depot, 62, High St., Leicester. [0800

ZENITH, 3½h.p., in stock, ready for immediate delivery, fresh from the works.—Colmore Depot, 62, High St., Leicester. [0803

MOTO-REVE, twin, 1910, in excellent condition; £21.—116, Radcliffe Rd., West Bridgford, Nottingham. [X1602

TRIUMPH, 1912 T.T., only 8 weeks old; £46.—Milner, 133, Handsworth Wood Rd., Birmingham. [X1640

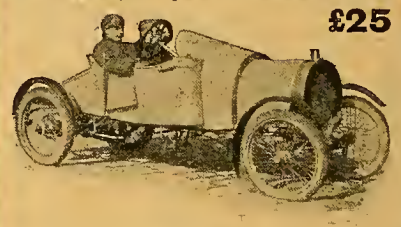
1911¼ Phelps and Moore, 3½h.p., perfect condition, hardly soiled; £55.—Kay, 49, Bridge St., Gainsborough. [0950

LADY'S Motosacoche, magneto, very reliable; great bargain, £19 cash.—Mrs. Morris, Athol Villa, Bourne. [X673

TRIUMPH, 1908, and accessories, excellent condition; £23/15.—Wahlron, Clarence Rd., Four Oaks, Sutton Coldfield. [0679

We have a very racy two-seater Duocar to dispose of. Genuine De Dion engine, water-cooled, Bosch magneto, two speeds and reverse.

£25



IN STOCK.

We have the following new machines actually in stock.

1912 Multi **RUDGE**	£60 0
1912 Standard **RUDGE**	£48 0
1912 3½ h.p. **NEW HUDSON**, 3-speed	57 Gns.
1912 2¾ h.p. **NEW HUDSON**, 3-speed	47 Gns.
1912 3½ h.p. **HUMBER**, 2-speed	50 Gns.
1911 3½ h.p. **PREMIER**, 2-speed	£48 0
1911 3½ h.p. **PREMIER**, Armstrong 3-speed	£46 10

SECOND-HAND BARGAINS.

1908 3½ h.p. **P. and M.**, 2 speeds	£28 0
3½ h.p. **N.S.U.**, magneto, spring forks.....	£17 0
2 h.p. **WOLF**, magneto, spring forks	£15 0
4 h.p. **ANTOINE**, M.O.V., 26in. wheels ..	£14 0
1910 **P. and M.**, 2 speeds, fine goer	£32 0
1909 **MOTO-REVE**, twin engine, magneto,	
1911 6 h.p. **N.S.U.**, 2-speeds, foot starter ..	£30 0
3½ h.p. **N.S.U.**, 2-speed, spring forks, ...	£16 0
1910 8 h.p. **BAT**, M.O.V., 2 speeds	£45 0
1911 Lady's **HOBART**, Armstrong 3-speed..	£38 0
3¾ h.p Twin **PREMIER**, fine machine	£25 0
1911 2¾ h.p. **MOTOSACOCHE**, magneto	£27 0

SINGLE-CYLINDER REXES.

1910 3½h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p 1908 Featherweight Rex, Bosch mag.	£17 0

TWIN-CYLINDER REXES.

1906 5-6 h.p. Twin Rex	£16 10
5-6 h.p, Bosch, Lloyd's variable gear ..	£22 0
7 h.p. de Luxe, 2 speeds, M.O.V.	£48 0
5-6 h.p. de Luxe, 1908, 2-speed model	£28 0

SIDECAR COMBINATIONS.

8 h.p. **BAT**, 2 speeds, Millford sidecar	£50 0
5-6 h.p. 2-speed 1908 **REX** and sidecar	£33 0
7-9 h.p. 2-speed **REX** and sidecar	£53 0

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3 h.p. **MINERVA**, vertical, M.O.V.	£12 0
3½ h.p. **EXCELSIOR**, Amac, h.b. control ..	£10 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

3 h.p. 1908 **REX**, Bosch magneto	£17 0
5-6 h.p. Twin **REX**, spring forks, h.b. control	£16 10
Twin-cylinder **MOTO-REVE**, magneto, Druids	£20 0
4 h.p. **ANTOINE**, M.O.V., vertical engine..	£14 0
2 h.p. **WOLF**, A.J.S. engine, magneto....	£15 0
3½ h.p. **N.S.U.**, magneto, spring forks.....	£17 0
4½ h.p. **HUMBER** Tricar, 2 speeds, wheel steering	£19 0
5 h.p. **HUMBER** Car, 2-seater, good goer ..	£22 0
5 h.p. **REXETTE**, Oppermann 3 speeds	£18 0

MOTOR CYCLE FRAMES.

We have a quantity of frames by well-known maker.

Price 32/6 each.

Rigid forks, 7/6 extra. Druid forks, 45/- extra. Enamelled and plated in first-class style.

MISCELLANEOUS BARGAINS.

1912 N.S.U. Gear for Bradbury, new	£7 7
26 × 2¼ Extra Heavy Kempshall Cover, new	£2 8
26 × 2¼ " " "	£1 10
C.A.V. V twin magneto, 45 degrees	£3 3
1912 B. and B. Carburetters, variable jets..	28/6
1912 B. and B. Carburetters, single jet	27/-
1912 Senspray Carburetters	28/6
Camel Hin. Rubber Belting ..... per foot	1/3
Fulford Castor Wheel Sidecar	£5 0
Sidecar Lamps, shnw red light behind	7/6
Trailer, 26in. wheels	25/-
New Toolbags, 9 × 6 × 3½in.	4/6
Sidecar Aprons, green or red, with studs ..	7/6
New Lycett's Tubular Carriers	4/11
Longuemare Carburetters	6/-

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane.

Telephone 919. **HALIFAX** (Two minutes from G.P.O.)

MOTOR BICYCLES FOR SALE.

BARGAINS.—1911 (May) free engine Rudge, new Dunlops and belt, £40; 1911 (April) 2-speed 3½h.p. Humber, £35; 1911 (May) free engine 3½h.p. Premier, £35; 1909 (June) fixed Triumph, £28; 1907 fixed Triumph, £18; delivered, carriage paid, 1912 free engine Triumph, due for delivery June 14th, £55. — Holt, Motors, Leamington. [X1814

SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

RUDGE, 1911, standard model; £35.—Betteridge, 51, Jesus Lane, Cambridge. [X1067

TRIUMPH, 1912, free engine model; prompt delivery; cash only.—Bailey, jeweller, Soham. [0858

TRIUMPHS, 1910, 3½h.p., free engine models, in very fine order; £35.—Bailey, jeweller, Soham. [0859

BRADBURY, 3½h.p., standard, perfect as new, unscratched, powerful, no faults; £35. — Bailey, jeweller, Soham. [0860

J.A.P., 5-6h.p. twin, Chater-Lea, in excellent order throughout; cash £16/10.—Bailey, jeweller, Soham. [0861

2½h.p. Alldays; clear at bargain price; light and in good order; £5.—Bailey, jeweller, Soham. [0862

NEW 1912 2-stroke Scott, best offers, or exchange 1912 F.E. Triumph.—Ewen, King's Lynn. [X757

CHIEF Triumph Agents for Cambridge (early deliveries), King and Harper, Cambridge. [0033

3½h.p. Twin J.A.P., 1912, Chater-Lea, not done 500 miles; £35.—30, Church St., Cromer. [0731

2½h.p. J.A.P., magneto, spare tyre, tube, belt; bargain, £4.—33, St. Leonard's Av., Bedford. [X1877

1912 Rudge, 3½h.p., free engine, new April, not soiled; £46.—Plummer, Long Stratton, Norfolk. [0844

1912 Humber, 3½h.p., 2-speed; immediate delivery; £52/10.—Robinson's, Green St., Cambridge. [X1797

TRIUMPH, free engine, late 1910, new Palmer cord tyres, Lucas lamp, complete in every way, also sidecar; this combination in excellent order and ready for the road; £45.—Robinson's, Green St., Cambridge. [X1798

ONE 1912 Triumph, free engine model, actually in stock; £55.—Triumph agents, Robinson's, Green St., Cambridge. [X1799

CLYNO, 5-6h.p., 2-speed; sole agents in Eastern Counties; £68/5.—Robinson's, Green St., Cambridge. [X1800

2h.p. Humber Lightweight, 1912 pattern, scored only; special price to clear £32/10.—Robinson's, Green St., Cambridge. [X1801

DOUGLAS, 1911 pattern, engine, tyres in excellent order; price to clear £28.—Robinson's, Green St., Cambridge. [X1802

ROBINSON'S Motor Bicycle Garage, Green St., Cambridge, Triumph agents. Tel.: 388. T.A.: Bicycles, Cambridge. [X1803

1912 F.E. Triumph, been 500 miles; first cheque for £49/10 secures.—Leigh, 43, Ellisley Av., Cambridge. [X1954

1911 3½h.p. Bat, in new condition; any expert examination; £35.—Peter, 35, Trinity St., Cambridge. [X1955

6h.p. Twin N.S.U., with N.S.U. gear, grand sidecar machine; must sell; £20.—Nightingale, 65, Argyle St., Cambridge. [X1956

3h.p. White and Poppe, magneto, in good order; £12. —Smith, Carlyle Rd., Cambridge. [X1957

4h.p. Precision, Millenium 2-speed, good sidecar machine, in perfect condition; £30.—Knaster, 29, Green St., Cambridge. [X1958

TRIUMPH, 3½h.p., magneto, late 1907, splendid order; £25, great bargain.—Garnham, 96, Crown St., Ipswich. [X1941

ROYAL Enfield 1911 Twin Lightweight, magneto, h.b.c., Palmer cords, will do 140 miles to gallon; cash £22/10, big bargain.—Garnham, 96, Crown St., Ipswich. [X1942

2h.p. Zedel, h.b.c., good condition; sell or exchange cycle and cash.—Particulars, Wightman, High St., Leiston. [0835

ENFIELD, 2¼h.p., perfect throughout, Dunlops; any trial arranged; price £25.—Thompson, Leiston, Suffolk. [0925

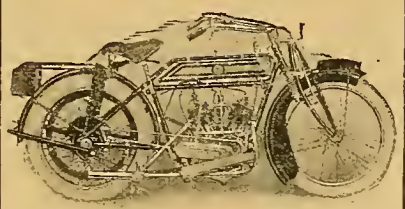
INDIAN, 7h.p., clutch model, 1912; immediate delivery; Ariel, T.T. model, 3½h.p., in stock.—Howard, Wisbech. [X1711

2¼h.p. Enfield, 1910, recently overhauled at works, splendid condition; £22.—Wiffen, Church St., Clare, Suffolk. [X1580

MINERVA, 3½h.p., Bates tyres, new condition throughout; cost £20 September, sell £15. — G. Seaman, Hunstanton. [0778

BRADBURY, 2-speed, belt drive, in stock; immediate delivery; cash, easy payments, or exchange.—Parker and Son, St. Ives, Hunts. [0952

2¾h.p. De Dion, splendid condition, £8; 2¾h.p. Minerva, Amac, low, £5/10; twin engine wanted. —Robinson, Sandy, Bedfordshire. [X1966



DO YOU KNOW

the pleasure of driving a really satisfactory, efficient, and economical motor cycle? If not, investigate the merits of the 1912

REX-J.A.P.

COPY OF TESTIMONIAL.

Wheatlea House,
Meole Brace,
Shrewsbury.

Gentlemen,

I think the time has come, now that I have given my 6 h.p. REX-J.A.P. a thorough testing, to write and say how very pleased I am with it.

Most of us know and are willing to acknowledge that the REX Company for many years have had the IDEAL RIDING POSITION, and this, combined with the J.A.P. engine, leaves nothing to be desired.

During the past eight years I HAVE HAD FIFTEEN MACHINES, all of them singles, excepting one, an automatic twin (the less said about this the better), but had I known the comfort and delight of the twin, I should have launched out long ago.

I can get 85 MILES TO THE GALLON, and the engine is one of the cleanest I have ever seen—hence low oil consumption.

I shall be delighted to demonstrate her capabilities at any time I can be of service to you.

Wishing you the luck you deserve, and thanking you for your prompt and courteous attention.

Yours truly,
(Signed) CECIL RICE-OXLEY.

We have many similar letters of appreciation from Private Owners. May we have the pleasure of sending our Catalogue, together with copies of these letters?

AGENTS! are you in a position to deal with the enormous demand this year for sidecar machines? If so, write for the Rex-Jap agency terms.

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TELE { grams: "Primus," Birmingham. phone: Central 4310.

MOTOR BICYCLES FOR SALE.

MOTOSACOCHE, 1¾h.p., 1911, Druid spring forks, magneto, horn, good condition; £17.—L.S., Bracondale, Hunstanton, Norfolk. [X1636

QUADRANT, 1912, free engine, ridden only 50 miles; cost £53, accept £44/10; selling through ill-health.—Thorp, Bridge Terrace, St. Ives, Hunts. [0978

3½-4h.p. Quadrant, Abelian 2-speed, clutch, Amac carburetter, magneto, good tyres, perfect, take sidecar anywhere; £18.—91, Walpole Rd., Gt. Yarmouth. [0674

SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

1911 Premier free engine model, 3½h.p.: first cheque £36.—Sanderson, Hallow, Worcester. [X1639

BRADBURY, 1911, standard, perfect order; £32, a bargain.—Eldridge, 93, Rylands St., Hereford. [X1752

1909 Motosacoche, magneto, perfect running order, looks like new; £16.—Jones, Haulfryn, Abertillery, Mon. [X1825

FOR Sale, 6h.p. 1912 Rex de Luxe, delivered February, grand machine: any trial; what offers?—Williams, plumber, Lamperer. [0715

1912 Douglas, 2-speed, free engine, kick starting, new April, unscratched, accessories; £45, or best offer. —10, Church Sq., Oldbury. [X1836

PREMIER, 1911, 3½h.p., new March, 1912, ridden 400 miles, perfect, just fitted Albion clutch; best offer secures.—Rhodes Bros., Kidderminster. [0826

CHATER-LEA-J.A.P., 3h.p., Bosch, gear drive, B. and B. carburetter, clutch, Whittle, Clunr, nearly new cheap.—Apply, Hopkins, Garage, Ledbury, Herefordshire [X1672

1911 Free Engine Rover, with or without sidecar, offers; also 1909 Triumph, £27/10; both in splendid condition.—Wallace, Market St., Stourbridge. [X1871

1906 Quadrant, 3½h.p., accumulator ignition, B. and B. carburetter, N'all saddle, 2 good tyres, L.M.C. variable pulley, engine thoroughly overhauled, takes sidecar; £9.—Collier, 52, Somerset St., Abertillery. [X1810

1910 Clutch Triumph, very little used, Kempshall back, Whittle belt, in new condition throughout, lamp, horn, etc.; bargain, £38.—Collier, 52, Somerset St., Abertillery. [X1809

SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants, and Channel Islands.

TRIUMPH, 1912, free engine, and standard models from stock.—Laytons', Bicester. [X742

RUDGE Multi-speed, delivery of new machine from stock.—Laytons', Bicester. [X743

JAMES, 1912, standard model; delivery from stock. —Laytons', Bicester. [X744

B.S.A. Motor Bicycles, free engine models from stock. —Laytons', Bicester. [X745

ENFIELD, 2¼h.p., 2-speed model; cost £52/10; been run 20 miles only; £44.—Laytons', Bicester. [X746

PREMIER, 2¼h.p., lightweight, soiled very slightly; cost £36, £29.—Laytons', Bicester. [X747

CALCOTT, 2¾h.p., 1912; delivery from stock; £33/10. —Laytons', Bicester. [X748

EXCHANGES Considered; let us have your offer with regard to above machines; it will receive our careful attention; we are reasonable people.—Laytons', Bicester, Oxon. [X749

BRADBURY, 1911, brand new, N.S.U. 2-speed gear; great bargain, £45.—Ginger, Motors, Banbury. [X1901

BROWN, 1908, 3½h.p., magneto, h.b.c., overhauled, enamelled; £16/16.—Ginger, Motors, Banbury. [X1902

RUDGE, free engine, 1912 model, cost £55, condition perfect; £45.—Barnes, Colobrook, Bucks. [0543

F.N., 5-6h.p., 1911, late, as new, latest improvements; £30, or exchange lower power.—James, tailor, Boscombe. [0863

2¾h.p. Enfield, 1912, not ridden 1,000 miles; price £40.—Lewis T. Jones, H.M.S. Research, Home Survey. [1021

TRIUMPHS, 1912, F.E. models; £55; immediate delivery from stock; two only left.—Paxman, Tewkesbury. [0471

MOTO-REVE 2h.p. Twin, first rate running order, new Dunlop tyres; £15.—Buchanan, 36, Baldwin St., Bristol. [0739

SINGER, 3½h.p., free engine model, new May last, only ridden 200 miles; £47/10.—Dominy, Jewry St., Winchester. [X1887

1912 F.E. Rover, 1912 F.E. Singer, shop-soiled, guaranteed, never been on road; £50 each.—Moore, Motors, Andover. [X1061

DELIVERIES from stock Bradbury, chain-driven, 2-speed, £58/10; Douglas, Model K., £50.—Gough's Motors, Gloucester. [X1789

IMMEDIATE Delivery of new Rudge motor bicycles, Multi-speed and free engine models.—Willis and Son, Eton, Windsor. [0314

MOTOR BICYCLES FOR SALE.

RUDGE and Bradbury Models, for prompt delivery; trial runs; exchanges entertained; send for lists.—Agent, Barnes, Colnbrook, Bucks. [0003

2½h.p. Rex Lightweight, Bosch, B. and B., spring forks, very low, good running order; £14/10.—North, Wood Lane, Binfield, Berks. [0726

3½h.p. 1911 Brown, with 1912 Kerry clutch, perfect condition, all accessories; a bargain, £28.—Apply, Newbery, Amesbury, Wilts. [X1959

2¾h.p. Minerva, tyres as new, Whittle belt, Bosch magneto, B. and B. carburetter; a bargain, £18.—Fred Boulton, Theatre, Bordon, Hants. [X1591

2h.p. Clarendon, rebushed, new tubes, going order, low, h.b.c., B. and B., £6; Madison engine, unfinished, 15/-.—C. Bennett, 3, Chester St., Oxford. [X1631

1910 5h.p. Rex Speed King, almost as new, £26; would part exchange lower power.—Box L7,317, *The Motor Cycle* Offices, 20, Tudor St., E.C. [1019

3½h.p. Minerva-Chater-Lea, Bosch, B.B., very low frame, absolutely reliable, N.S.U. 2-speed, and free engine.—Bacon, Shinfield, Reading. £22. [X2046

PHŒNIX-MINERVA, 2¾h.p., m.o.v., 2 speeds, free engine, handle starting, low seat, B100 saddle, Hellesen battery; £9/10.—63, Norrey's Av., Oxford. [0821

DOUGLAS, 2¾h.p., Model D., 1911, carefully ridden, in excellent condition, new Palmer back tyre; £25, no offers.—Bishop, Lordon Rd., Waterlooville, Hants. [X1581

3½h.p. Brown, magneto, h.b.c., new studded back tyre, new belt, N'All spring forks, in good order; bargain, £16.—Silverburn, King Edward St., Slough. [0852

DOUGLAS, 1911, 2-speed, footboards, excellent condition, carefully used, new Wood-Milne back, N.A.B.; £36.—Collins, Swindon Rd., Wroughton, Swindon. [0975

NEW 6h.p. Zenith Gradua, 1912 model, absolutely perfect, not run 100 miles, good lamp and horn; £65.—Apply, Lieutenant Fraser, R.N., Royal Naval Barracks, Portsmouth. [0710

£10.—3½h.p., Carlton, Chater frame, fittings, B. and B., h.b.c., P. and H. lamp, enamel, plating, running in good order.—Photo and particulars from Taylor, 45, Cheap St., Newbury. [X1683

5½h.p. Sarolea, Chater-Lea, spring forks, footboards, 1912 B. and B., variable, trembler, new accumulator, Pedley belt, tyres good; £17; particulars, stamp.—38, High St., Aylesbury. [X1827

HARVEY'S Motor Cycle Mart, 58 and 60, Poole Rd. Westbourne, Bournemouth, have, amongst others 2h.p. 1912 lady's Humber, 2h.p. Centaur, 2¾h.p. Douglas 2h.p. F.N., 3½h.p. Triumphs, and others. [0028

3½h.p. Kerry-Abingdon, 1910½, splendid condition, new back tyre and Dunlop belt, adjustable pulley, buying new machine, sole reason for selling; £26, for quick sale.—Painter, Denmark St., Wokingham. [X1701

F.N., 5-6h.p., just completely overhauled, automatic carburetter, central intake, magneto cover, good tyres, splendid condition, complete with lamp, horn, and tools; £25.—Tailby, 18, High St., Buckingham. [X1791

PREMIER, 3½h.p., 1911, brand new; list price £47/10, will take £36 for quick sale, or second-hand machine taken in part exchange.—The Chippenham (Wilts) Motor Works, Ltd. (adjoining G.W.R. Station) [0822

EYLES and Eyles, 113, St. Aldate's, Oxford.—1911 Scott, only soiled, £50; 1910 Scott, £32, 1911 Bat, 7-8h.p., 2-speed, sidecar, £60; 1911 Humber, 2-speed, £35; 1910 Enfield, £28; 1908 Triumph, £26. [X106

ZENITH, 1911, 3½h.p., new late last season, tyres perfect, extra large steel-studded cover on back; open to any examination; had really careful use, tools and accessories; £44.—The Morris Motor Cycle Garage, Oxford. [X93

ENFIELD Passenger Machines.—We can give you the earliest delivery for cash or easy payments.—Sole district agents, The Morris Motor Cycle Garage, Oxford. [X94

DOUGLAS, 1910, splendid condition throughout, extra large saddle, tools, spares, etc.; £25.—The Morris Motor Cycle Garage, Oxford. [X166

HUMBER, 1911, 3½h.p., 2-speed, handle starting, excellent condition throughout, including tyres; bargain, £35.—The Morris Motor Cycle Garage, Oxford. [X95

THE Morris Garage, Oxford, have the largest stock of new machines in the county; immediate deliveries of nearly all makes for cash or easy payments. [X827

TRIUMPH, Oct., 1906, new cylinder Sept., 1911, magneto, Brown and Barlow carburetter, just overhauled and fitted new Dunlop belt, mudguards, free wheel, good running order; £17. — Perrins, Manton, Marlborough. [0779

1909 Triumph, 1911 piston, demonstrate cold start walking pace, accelerate to 50 valuable spares; or 1910 2¾h.p. Jap-Chater-Lea, H.T. magneto, Triumph system control, full of power, low frame, both excellent condition; must sell; ask details.—Owen, Aetrop, Banbury. [0713

FOR Sale, 3½h.p. Triumph, 1909 model, in excellent order, hardly used at all, clutch, new Chancher tyres, good lamp, generator, and speedometer, all tools, etc., complete; price £25, or near offer; owner selling having bought motor car.—A. B. Paget, Cadland, Southampton. [1022

ESTABLISHED 20 YEARS IN THE HEART OF THE TRADE



COLMORE DEPOT
BIRMINGHAM

STOCK

READY FOR IMMEDIATE DELIVERY

FOR CASH OR BY EXCHANGE OR INSTALMENTS.

MATCHLESS, 8 h.p. for sidecar use £73 10

ROYAL ENFIELD, 2¾ h.p. Two-speed model, handy and fast.....£52 10

DOUGLAS 1912 two-speed model £50 0

TRIUMPH, free engine model.....£55 0

PREMIER, 3½ h.p., with three-speed (Armstrong), for sidecar or solo use £58 0

ROYAL ENFIELD, 6 h.p. sidecar combination ..£84 0

PRECISION, 3½ h.p. with best of everything fitted, Bosch, Dunlop, B. & B., Druid, etc.....38 Gns.*

*Note the price.

COLMORE DEPOT,

49, John Bright Street, and 31, Colmore Row,

BIRMINGHAM.

Also at

LIVERPOOL—18, Renshaw Street.

MANCHESTER—261, Deansgate.

LEICESTER—62, High Street.

WALSALL—250, Stafford Street.

CLYNOS in stock at Liverpool, Walsall, and Leicester.

ZENITHS in stock at Leicester, and Walsall.

MOTOR BICYCLES FOR SALE.

CLYNO, 5-6h.p., 1912, new a few weeks since, special gold medal awarded in Oxford Motor Cycling Club's open hill-climb, £60; Rex, 7-9h.p., 1911, demonstration machine, only £40. — Davis and Slingo, 12, Cornmarket, Oxford. [X1681

DOUGLAS, 2-3h.p., model E, clutch, free engine, 2 speeds, Cowey speedometer, King Road lamp, spare inner tube, complete outfit of accessories, Palmer tyres, in perfect running order; £36 cash.—Box L7,302, *The Motor Cycle* Offices, 20, Tudor St., E.C. [0754

A.C. Sociable, late 1911, not done 3,000 miles, and as new, powerful headlight, oil side lights and rear light, Cape hood, screen, side aprons, luggage carrier, horn, pump, and jack, special non-skid rear, Michelin fronts; cost £125, accept £85 for quick sale.—Shearman, St. Malo, Southgate Rd., Winchester. [X2000

HAVING got 1912 model Phelon and Moore, advertiser's specially built and finished 1911 model, Olympia Show machine, is for disposal, perfect condition, little used, car chiefly last season, faultless performer, machine has the following extras: Palmer cord tyres, petrol filter, and h.b. switch.—A. W. Metcalfe.—Price with horn £50. Machine at Messrs. Willway's and Sons, Ltd., Bristol. [X1647

SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

TOTTENHAM.

1912 Models in stock.

CLYNO, 1912, 2-speed model, with sidecar; £85.

1912 Humber 2-speed, Bradbury F.E., A.C. Sociable, this month.

TOTTENHAM.—1911 F.E. Bradbury, £49; slightly soiled Rudge, F.E., £50.

1910 Humber, 2-speed model; £33.

1910 Scott; £34; excellent.

1910 Douglas, 1910 Motosacoche, 1911 Humber 2-speed, £37/10; nearly new 4½h.p. Fafnir, £25; Triumph, 3h.p., £16/10.—Stamford Hill Motor Co., 128, High Rd., Tottenham. Tel.: 1982. [X1656

ARNO Depot.—1912 T.T. model, 3½h.p., in stock; £45.

ARNO Depot.—1912 Tourist model, 3½h.p., in stock; £45.

ARNO Depot.—1912 Tourist, 3½h.p., 3-speed gear, free engine; £55.

ARNO Depot.—1912 Medium, 2¾h.p., in stock; 39 guineas.

ARNO Depot.—1912 lightweight, 2¼h.p., in stock; 36 guineas.

ARNO Depot.—Sidecars, quick detachable joints, from £5/5.

ARNO Depot.—Second-hand machines taken part payment.

ARNO Depot.—Deferred payment system; no extra charge.

ARNO Depot.—5h.p. Indian, 1911, blue, free engine; £40.

ARNO Depot.—3½h.p. Rex, 1910, free engine, speedometer, etc.; £29/10.

ARNO Depot.—5-6h.p. V.S. and sidecar, splendid order; £29/10, or offer.

ARNO Depot.—3½h.p. Humber, Whittle belt, magneto, good tyres; £16/10.

ARNO Depot, 2, The Parade, Kilburn, London. 'Phone: 4807 P.O. Hampstead. [0677

B.S.A. 1912 Motor Cycles; easy payments arranged.—Rivett, Leytonstone.

B.S.A., 1912, free engine models, in stock.—Rivett, Leytonstone.

B.S.A., 1912, fixed engine models, in stock.—Rivett, Leytonstone.

MOTOR Accessories, oils, etc.—Up-to-date stock at Rivett's, 236, High Rd., Leytonstone. [0054

2¾h.p. Douglas, splendid condition; £28.—Taylor, Shipbourne, Tonbridge. [X1790

£13.—3h.p. Clyde, magneto, h.b.c.—Bates, 24, Alexandra Court, Maida Vale [X1824

3½h.p. M.M.C., in good running order; £10 for quick sale.—G. Mitchell, Balcombe. [0721

MOTO-REVE, 1910, 2¾h.p. twin; £18/10.—33, Dorset Rd., West Green Rd., Tottenham. [0940

TRIUMPH, late 1911, perfect order; £45; no exchanges.—Shapland, Ewell, Surrey. [0687

6h.p. Rex Litette, 2-speed, magneto; £23.—Elthham, Stormont, Lime Grove, New Malden. [X1968

3½h.p. Minerva, 1909, h.b.c., in thorough condition; £14.—67, Wellington St., Woolwich. [X1674

2½h.p. J.A.P., h.b.c., good running order; £11/10.—Garaged at 148, Ewell Rd., Surbiton. [0758

THE MOTOR CYCLE

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Overloading.

OUR advice to beginners who frequently ask what horse-power machines they should purchase is that much depends upon the conditions under which the motor cycle has to work and the nature of the country in which that work has to be done. For example, for an unmechanical novice 2 or 2½ h.p. Such a man could probably start away with a 3½ h.p. with perfect safety, but it is better to be on the right side. For the average beginner a 2¾ h.p. twin; for the average individual slightly acquainted with the theory and practice of the pastime a 3½ h.p. single; for the worshipper at the shrine of the goddess speed the twin up to 7-8 h.p.; for those content with a moderate speed in a level country, and who wish to take a companion, the 3½ h.p. with change-speed gear and sidecar; for a married couple who want to climb all hills a powerful twin with change-speed gear and sidecar. All of which we consider to be sound advice based on long experience.

The practice of overloading the willing engine is, however, growing, and it is no uncommon sight to see a 2¾ h.p. twin with a passenger on the carrier, a 3½ h.p. and sidecar (occupied) with a passenger on the carrier, a 7 h.p. twin with a passenger and child in the sidecar, and a passenger on the carrier as well. Doubtless the willing engine makes a brave showing under abnormal loads such as these, and the thoughtful manufacturers have provided a margin of safety which allows the engine just to scrape through under these unfair conditions, but there are parts of the machine in which there is often next to no margin of safety, and this should be obvious to almost anyone. We refer, of course, to tyres and transmission.

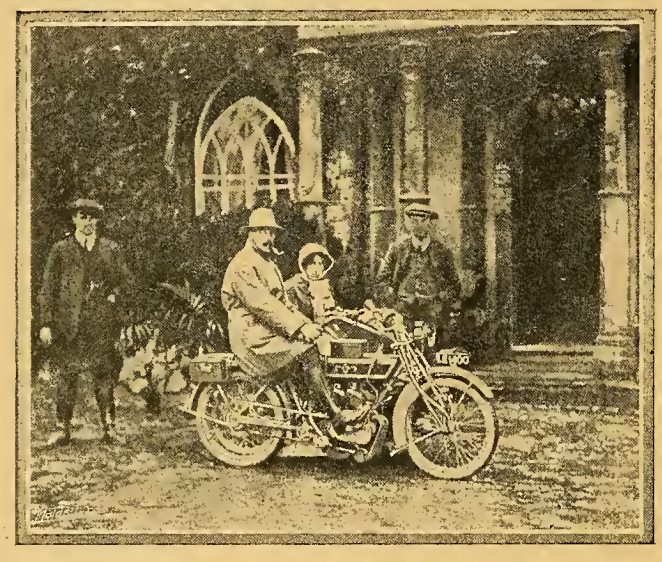
The weight of an extra passenger on the carrier puts a terrific strain on the rear tyre cover, and trouble is sure to ensue if the practice be indulged in continually. The transmission suffers as badly when it has to put up with such usage. Moreover, heavy loads demand a generous throttle opening, and inasmuch as the whole art of driving an air-cooled engine lies in keeping it running on as little gas as possible, overheating and valve troubles are invited. Were the average motor cycle engines water-cooled they would stand more abuse, but as they are not, the rudiments of air-cooled engine driving must be observed. Furthermore, the overloading of sidecar machines puts grossly unfair strains upon the bicycle frame and that of the sidecar and its connections, stresses which they were never intended to bear.

All of this is intended to urge riders to use commonsense in the use of the vehicles which come into their hands. To get the best out of their mounts, the latter must be used fairly and not abused, and it is to be feared that, unless due notice is taken of our warnings, the abuse of overloading will end in some cases in disastrous results. Finally the question of pulling the load is not the only one to be considered. Even more important is that of stopping. Heavy bodies, as our elementary mechanics tell us, acquire tremendous momentum once they are set going, and those who overload their mounts altogether beyond the point for which they have been designed may one day find that the brakes fitted for use under normal conditions will prove inadequate when absurdly heavy loads are carried. It should hardly be necessary for us to point out that failure of the brakes may have very serious consequences.

A.C.U. SIX DAYS' TRIALS.

SUMMARY OF AND COMMENTS ON THE REGULATIONS.

THE regulations for the Six Days' Trials are now issued to the public. The manner in which these are arranged, and the index at the beginning of the pamphlet, reflect great credit upon the secretary of the Auto Cycle Union. Reference has already been made in *The Motor Cycle* to the routes which will be followed through the glorious West



Mr. and Mrs. T. W. Loughborough (8 h.p. Matchless sidecar) outside Clark's Hotel, Taunton. The new A.C.U. secretary has been over the Six Days' Trials route.

Country, and it now remains only to refer to those points in which this year's rules differ from those of last year.

Passenger machines may be motor cycles with sidecars (the latter, by the way, must not be detached during the trial) or cyclecars; and this is the first important trial in which the cyclecar class may compete.

Important Rule regarding Cyclecars.

Cyclecars must be fitted with a free engine and a change speed gear *(controllable from the driver's seat and while the vehicle is running)*, comfortable body, tyres not less than 2½ inches, etc. Every driver of a passenger machine must supply a full-sized waterproof rug for the comfort of the observer.

Competitors must have their machines ready for sealing previous to the beginning of the trial. That is to say, the wires must be in position round the cylinders and frame ready for the seals to be affixed.

The trial is open to genuine tourist machines only. A list of what may and may not be carried in the way of spares is given. Tyre repair outfits, sparking plugs, valve complete, magneto parts, belts, belt fasteners, chains, tyre levers, inner tubes, control wires, and nuts and washers may be taken, but no other spare parts of any description may be carried on the machine or on the person of the competitor or passenger.

A reasonable quantity of tools, including a small soldering outfit if desired, is allowed. This is a generous regulation which imposes no hardship on the private owner who likes his machine to be equipped against any emergency.

The cost of entries is as follows: Trade entries, £5 5s. for the first machine, and £4 4s. for every additional entry, not exceeding three in all; trade entries from agents on their own account, £4 4s. each machine; private owners, £3 3s. each machine; private owners who are members of the Auto Cycle Union or affiliated members, £2 2s. each machine. Manufacturers of tyres may enter them separately. For a report on the tyres on one machine £2 2s. will be charged; for the report on the tyres of any additional machine 10s. 6d. Tyres entered will be marked, and every change of tyre cover or tyre repair made under observation involves a loss of five marks. Entries at ordinary fees close on July 29th; late entries will be accepted up to and including August 3rd at double fees, and should be sent to the Secretary, Auto Cycle Union, 89, Pall Mall, S.W. Machines must be at the official storage depot at Taunton at 10 a.m. on August 11th.

System of Marking.

Each competitor will be credited with 1,000 marks at the beginning of the trial. The schedule time will be calculated on a basis of twenty miles an hour. Any competitor passing any point in the route more than ten minutes in advance of or behind the schedule time for that point will be penalised ten marks for the said ten minutes, and one mark per minute in excess of that period. That is to say, any competitor may be ten minutes late or early of schedule time without loss of marks.

Competitors will be timed over secret sections, and if this proviso be efficiently carried out it should put an end to scorching and waiting outside controls, whereby many riders have secured time for an unpenalised repair or adjustment in past trials.

A competitor arriving late at the end of the morning section may waive part of the luncheon interval of one and a half hours. Twice during the trial the condition of the brakes on the competing machines will be tested, and marks not exceeding ten will be



A 3½ h.p. three-speed Rover climbing Beggar's Roost. This hill, which has a gradient of 1 in 3½ may be included in the Six Days' Trials

A.C.U. Six Days' Trials—



A new view of Porlock Hill between the two bends. The hill is included in the Six Days' Trials route.

deducted for any imperfection. Machines must make a clean ascent of the test hills (pedalling, assisting with feet, or running alongside will not count as a clean ascent), failure to do so involving a loss of fifty marks. As the maximum marks are 1,000, and 950 are required for a gold medal, one hill failure, plus the loss of a single mark for any other cause, will lower a rider to the silver medal class.

Pedalling is only allowed on single-geared lightweights (300 c.c. singles, 350 c.c. twins), and if indulged in will be recorded on the machine's certificate. Passenger machines must ascend the hills with passenger and driver seated in a normal manner. Certain sections of the route will be non-stop sections. Each stop in these sections involves a loss of five marks. This rule is probably framed for two reasons: (1) To prevent cooling and adjustment stops at the foot of test hills; (2) to test the rider's dexterity in handling his machine on unfamiliar sections of an extremely tricky nature.

Condition of Machines at End of Trial.

In arriving at the awards the condition of the machines will be taken into consideration by the judges, and five marks will be deducted for any ascertained defect. A quarter of an hour only each morning will be allowed for adjustments.

Owing to the crowding this period will barely suffice for refilling tanks, and in no case can it suffice for any vital repair or adjustment. Probably most riders will take opportunities of refilling their tanks along the route, and will utilise the morning interval for examining their machines.

The Awards.

Gold medals for 95% of marks obtainable, silver medals for not less than 85%, bronze medals to all who complete the trial within an hour of the schedule time and with machines in good condition, and who have otherwise fulfilled all the conditions of the trial. In addition there will be two team prizes for the best performances by a team of three trade riders and a team of three private owners nominated by an affiliated club, also numerous other special prizes.

Two of the special prizes are earmarked for *slow* hill-climbs, but the regulations at present contain no other mention of slow climbs. Obviously if these prizes are offered for competition on the test hills nobody will deliberately compete, as a failure would spell a loss of 50 marks on the medal score. Presumably the slow climb prizes will be awarded on tests separated from the main trial and outside the time schedule, so that loss of time or failure will not affect a rider's main score. Otherwise nobody will consider these awards unless he has already lost all his medal marks.

Every one of the new regulations represents an urgently needed reform, and the changes have been exceedingly well thought out. They bear the hallmark of a practical organisation in every detail, and reflect great credit on the management. Humanly speaking, they are an assurance to private owners all over the world that a machine which gains an award in the 1912 trials is completely road-worthy, and that duplicate machines are well suited for hard service in any country that possesses roads.

The fact that the secretary, who is a notoriously good organiser, has carefully made arrangements well beforehand, and gone over the whole route on a Matchless motor bicycle and sidecar, should do much towards rendering the trial the success we hope it will be.

TYRE TESTS IN THE SIX DAYS' TRIAL.

We have already commented on the excellent idea, originally suggested in *The Motor Cycle* and adopted by the A.C.U., for the Six Days' Trials to have a separate test of tyres. The difficulty, however, which does not seem to have been realised by the organisers, is that, according to the regulations, there is nothing to prevent manufacturers producing a special tyre for the trials. It is well known that, even by analysis, it is difficult to prove that covers and tubes have been specially made, and outwardly there is no indication of the fact. To prevent doubts arising in connection with this point, we suggest that it would be an excellent plan for the A.C.U. to make arrangements for the purchase of tyres by independent persons from the stock of those manufacturers who desire to enter tyres in the trial.

The organisers have arranged to mark all covers used in the trial, but a check should also be made upon air tubes used in conjunction with the covers, so that they could be penalised if necessary.



Three-speed Hubs and Side-slip.

Nothing is more gratifying to an old variable gear enthusiast like myself than to hear such glowing accounts of riders' experiences with the three-speed hubs. Not every user is familiar with a rather obvious tip in this connection. There is nothing like a low gear ratio to steady a wobblesome machine over a dangerous patch of grease. When I feel my back wheel playing pranks I instantly change down on to the intermediate gear, and if sufficient pace on this gear is uncomfortable, I change right down on to the bottom ratio. It is safe and easy to drive at 20 m.p.h. on bottom gear over surfaces which render slower speeds perilous on either top or middle gears. Of course, such engine-racing should only be indulged in for brief periods or in serious emergencies.

A Tank Suggestion.

Last year the Rudge machine embodied a marked improvement of the simple sort which makes us all ejaculate, "Why did nobody think of this before?" The petrol tank contained a little dam or semi-partition which trapped a few ounces of petrol, so that when the machine began to spit in that irritating fashion which betokens an emptying tank, you had only to lift the front wheel high in the air and let the fluid run over the partition to travel a few miles further. The idea was not well carried out on my machine, as the dam was too low, and the petrol got jerked over it on bad roads, so that on the one occasion when my fuel got low, the remnant behind the dam only carried me two miles. But here is the suggestion. Most tanks hold about 1¼ gallons. Why not construct the tanks in two compartments, each controlled by a separate tap or needle valve; the main tank might hold one gallon precisely, the auxiliary tank the quarter or half gallon, whatever the surplus is. We should then be freed from the annoyance of waiting for a measure at garages, which is a real hindrance in reliability trials with a large entry. The trade would soon learn that the main tank of a 1913 Triumph, Rudge, or Bradbury, holds exactly a gallon, neither more nor less; and the subsidiary tank would be large enough to ensure twenty-five miles running when the main tank ran dry.

Multi-speed Hub Design.

With further reference to my article on "Hub and Counter-shaft Gears," I should explain in reply to correspondents that two arrangements of three-speed hub trains are at present in vogue. These hubs use two reducing sun and planet trains; the Armstrong hub has the solid drive as the middle gear, and takes both top and bottom gears through one train apiece; the Sturmey-Archer hub takes the solid hub as top gear, middle gear reduction through one train, bottom gear reduction through both trains. The conflict of opinion is due to the following considerations. If you make top gear the direct drive, you get a largish engine pulley for all gears, and can get a low bottom gear with a fair-sized engine pulley. If, on the other hand, you make one reduction through both trains, you get double friction on bottom gear. The frictional loss on each separate reduction is probably about 10%. A four-speed hub could be obtained by using one reduction for second and third speeds, and a double reduction for fourth speed. A four-speed hub would thus be very little more complicated or heavy than the existing hubs; it would demand no increase in the number of pinions, but its internal control parts would be a trifle more complex and numerous, and so its size and weight would be increased.

Sidecar Novices.

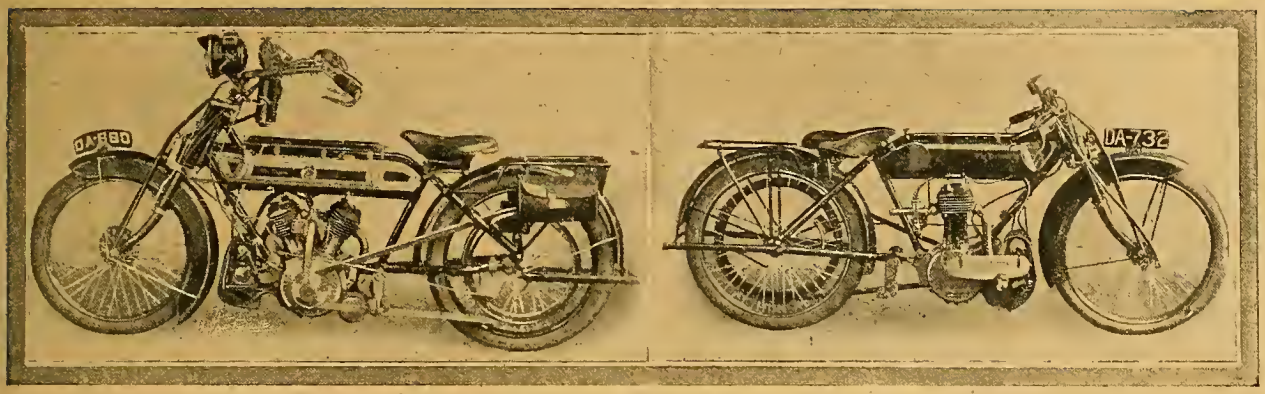
Everybody must learn to drive somewhere and sometime, but I think a protest would be timely against youngsters who have no experience of motor cycling fitting a sidecar as soon as they receive delivery of their machine, and learning to drive a motor and to steer a sidecar simultaneously. Last week there were two or three ugly smashes in my district, all due to novices imagining that it was safe to make their motoring essays with a sidecar, and in all the instances the sidecar appears to have been imperfectly adjusted.

The 1912 novices should clearly understand that some practice is needed before a tyro can escape being a public danger even when he drives a vehicle which steers as naturally and automatically as a motor bicycle: the deceptiveness of speed is a large factor. But when the raw novice endeavours to acquire speed experience on a machine as tricky to steer as a rigid sidecar accidents are bound to follow.

The novice would be well advised not to attempt sidecar work until he has enjoyed about 1,000 miles of solo experience. Otherwise the first emergency will find him either losing his head completely, or concentrating his attention solely upon steering and ignoring his brakes and throttle, or *vice versa*.



ANGLO-SCOTTISH HILL-CLIMB (described last week).
A few of the English team in the hill-climb at Lanton Hill, Jedburgh. Left to right: F. W. Barnes with P. Weatherilt as passenger (Zenith). Standing behind the sidecar is T. Silvor (Quadrant). On the right is H. Berwick (New Hudson and sidecar).

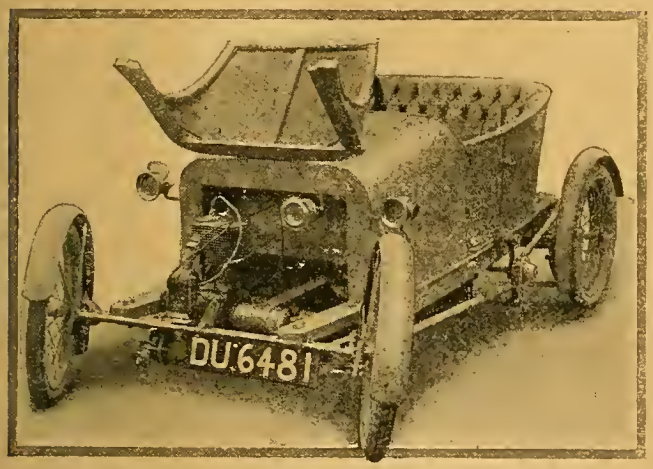


IRELAND SINGLE AND TWIN MACHINES. (See page 672.)

Twin-cylinder Ireland fitted with Blumfield engine. A 4 h.p. single-cylinder Ireland machine.

THE GLOVER CYCLECAR.

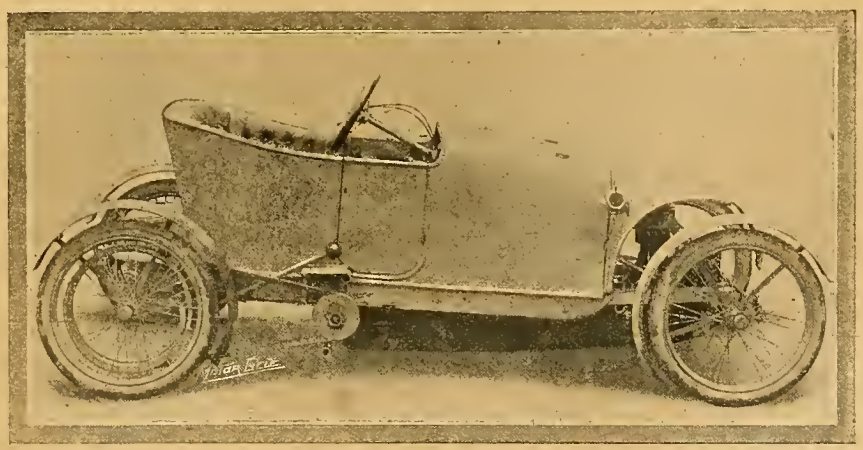
WE have already illustrated the experimental cyclecar built by Glover Bros., and we are now able to illustrate the first of the Glover cyclecars completed for the market. The machine has been altered in detail and much improved in appearance, though the general principle is the same as that described in *The Motor Cycle* of February 8th last. A 4¼ h.p. single-cylinder Precision engine, fitted with an Amac carburetter, supplies the motive power, which is transmitted to the counter-shaft by a broad flat belt. The counter-shaft has been considerably altered, and is now carried on ball bearings between two stout tubular members, the upper of which is pivoted to the frame. By means of this device the V and flat belts pull against one another, and thus adjustment is simplified. One inch Service belts transmit the drive from counter-shaft to the rear wheels.



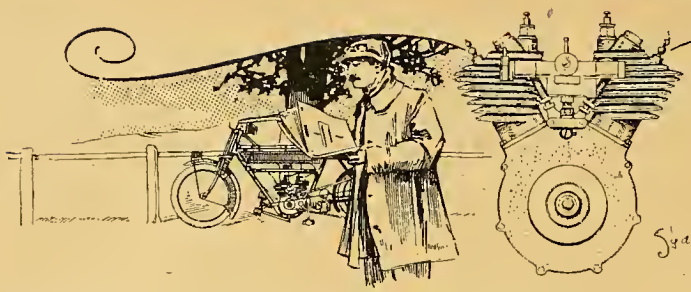
Front view of the Glover cyclecar, showing engine and flat belt drive.

The body is pivoted at the front and carried on a wooden cross-member towards the rear, thus allowing free play to the ash frame. Adjustable pulleys are fitted on both high and low gear sides of the counter-shaft, giving a wide variation of gears. On the occasion of our trial run the gears were 4⅛ to 1 and 7½ to 1. Even with this high ratio it was seldom necessary to drop to the low ratio. The change-speed gear is extremely simple, and is actuated by a side lever through the medium of ball bearing belt shifters. A pedal is also fitted which throws the belt on to the loose pulley, and thus gives free engine when required. Both hand and foot brakes act on the belt rims, and have ample gripping surfaces. The springing of this little vehicle is wonderfully good.

The engine is protected from the elements by a projecting cover, but, being exposed to the air on three sides, showed no signs of overheating on our trip. A large expansion chamber and long exhaust pipe effectively silence the engine. The body is finished in lead grey and upholstered in dark blue, giving a smart and serviceable appearance to this interesting little machine. It may be added that the Glover cyclecar is a real motor cycle four-wheeler, and does not pretend to imitate the big car.



Side view of the latest Glover cyclecar, which has a 4¼ h.p. single-cylinder Precision engine.



THE CARE OF A LIGHTWEIGHT.

THE riders of lightweight motor cycles should remember that they are riding a type of machine which will undoubtedly give satisfaction if used carefully and as intended to be used, but if allowed to run in a neglected state for any length of time the engine may never regain its former efficiency.

We all know that efficient lubrication on any motor cycle engine is essential to good running, and minimum cost of repairs and renewals to engine. Now it may seem strange to some that the lubrication of a lightweight engine is at least three times more important than the lubrication of a heavyweight, and the following reasons will no doubt explain why.

A lightweight under average riding conditions is often driven full throttle, for instance, on most hills and when a good stretch of road is met and a fairly high speed can be enjoyed with safety. The lightweight driven at full speed may not exceed 40 m.p.h., but the heavyweight for a similar speed would be run on half throttle. Thus it will be seen that the lightweight is often driven "all out," and, taking into consideration the low gear necessary on a lightweight, one can easily imagine overheating and the necessity for correct lubrication, and, more important still, the right brand of oil.

The Importance of Lubrication.

I could name certain brands of oil that spell ruin to a lightweight engine, and yet are eminently suitable for a heavyweight. The best plan is to use no other oil than that recommended by the makers of the machine, and not to experiment for yourself, as the makers have done that for the rider's benefit. A fairly thick oil of well-known brands will usually be recommended, and more particularly for small twin engines, as a thin oil is soon lost either past the pistons or out of the crank case joints, thereby making a dirty engine. Little, but very often, is the best way to lubricate a lightweight engine, and by adopting this method the engine will keep its efficiency much longer, and may be run all out for a considerable distance without fear of overheating. Several makers of machines fit very small pumps, a pumpful to be given every three miles. The idea is good, but a small pump is a nuisance in winter. A much better plan is to have a larger pump, which may be filled, say, every ten miles or so, and to discharge the contents a little at a time.

That under-lubrication is the cause of half the troubles of a lightweight I am too well aware. I have even seen an engine with a rimy carbon deposit on the flywheels—flywheels, mark you. That particular engine was never the same, even after a complete overhaul and many replacements, in consequence of the totally inadequate lubrication.

A very good plan for lightweight riders to adopt is this. Before setting out on a fairly long run, start the engine on the stand, and lubricate until it just smokes. Then lubricate in the ordinary way, for if an engine smokes you know it has enough; if it does not smoke, you are in a quandary.

Belts and Pulleys.

Another lightweight bugbear is undoubtedly belts, but even this trouble can be greatly minimised by proper attention.

An adjustable pulley is an undoubted advantage, and it may seem surprising that some makes are not fitted with this. The greatest drawback to many types of adjustable pulleys is the hammering they may be subjected to, and the pulley-shaft of a lightweight will not stand rough treatment. For this very reason, one prominent maker does not fit or recommend an adjustable pulley, but, taking into consideration that there are several types of adjustable pulleys on the market that may be quickly adjusted without the use of any tools, there is no reason why a pulley of this type should not be used with success. Choose one with as little width as possible.

The use of an adjustable pulley will enable a ¾in. belt to be used in place of a ⅝in. belt, and the difference will be surprising. I have at present a well-known make ¾in. rubber belt that has done over a thousand miles, and looks good for another thousand, yet a ⅝in. of the same make rarely lasts a thousand.

A new belt on a fixed pulley gives too high a gear generally. Some leather belts I have used have stood up over $\frac{3}{16}$in. above the pulley, the belt being at fault. With an adjustable pulley this obvious defect may be easily remedied.

A Few Final Hints.

Use as flexible a belt as possible. Certain types of belts, although practically everlasting, take considerable power to drive them, and do the engine no good on account of their stiffness and weight: this I have proved conclusively on the road. Another bad feature of a ⅝in. belt is that it slips badly in wet; this trouble is largely overcome by a ¾in. belt. A leather belt is suitable for any road condition, but most makes of ⅝in. leather belts soon stretch, and in the end are very expensive. On the whole, a good rubber belt is to be preferred. That certain belts absorb considerable power is proved by the following. A certain test hill is climbed easily using a light flexible belt; descending, another belt is fitted, and machine fails to reach the top; descending again, original belt is fitted, when hill is again ascended easily.

The belt rim does not require replacing when using a ¾in. belt in place of an original ⅝in., as a belt

The Care of a Lightweight.—

rim readily accommodates a slightly larger belt. A change from a ⅝in. belt to a ¾in. would, I am sure, prove a blessing to riders who have had belt trouble.

Compression taps on some lightweights have a very small bore, and as some lightweight engines require liberal priming to ensure an easy start, the compression taps should be drilled out larger to allow of spirit entering cylinder easily and without waste.

A lightweight is a pleasant machine on which to tour, but do not put a week's baggage on the carrier, as the machine is not intended as a luggage-carrier.

Drain waste oil out of crank case frequently, as it soon gets dirty and useless.

Should the carburetter be of a type you do not understand, do not interfere with it, or you may wish you had not. It may be taken down for cleaning purposes, but let well alone.

Not a few lightweight engines soot the plugs up frequently. This is best cured by using suitable plugs.

Assist the engine when required: a pedal in time often saves nine.

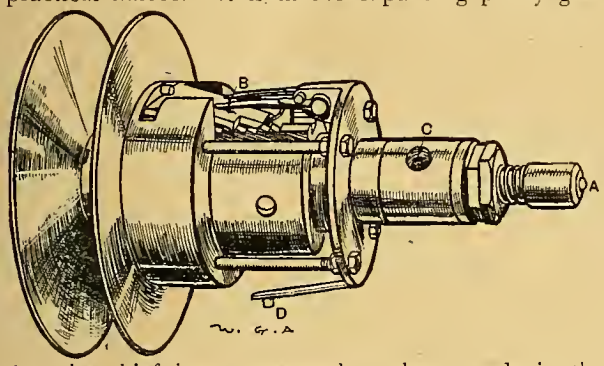
Never fit a very heavy tyre on the back wheel; it is not required. A lightweight is extremely light on tyres, and heavy tyres slow the machine considerably.

Take the cylinders off and clean pistons of deposit and grind valves before it becomes a real necessity to do so. Engine power is much better than l.p.a.

A lightweight used properly is an economical and enjoyable mount, and the pastime may be enjoyed by those to whom a heavyweight is barred. "PILSI."

Improvements in the Brown Midget Bicar.

WE have on several occasions referred to the ingenuity of Mr. J. T. Brown, of Reading, as regards motor cycle design. His machine, the frame of which is of sheet steel supported by wood, is full of interesting points, and is of a thoroughly practical nature. It is in the expanding pulley gear



that the chief improvements have been made in the Midget Bicar. At the beginning of November last year the prototype of the gear we are about to describe first appeared upon the market, and this was designed to be worked by one lever, which controlled the pulley and took up the slack in the belt by pushing back or pulling forward the rear wheel, by means of a backward and forward movement. The chief objection to this system was that in changing down the pressure of the belt would almost invariably force the gear from top to neutral at once, and the intermediate speeds would be left out altogether. To overcome this difficulty Mr. Brown has slightly altered the method of operation by arranging five separate speeds instead of rendering the gear infinitely variable between two points and using a separate lever to alter the belt tension. Fig. 1 shows the expanding pulley, the degree of opening of which is limited by means of five distinct notches, into which the pawl B engages. This pawl may be released either by pulling on the shaft C or by tapping on the inner shaft A, when the gear is lowered one degree for each tap. D is simply a spring which keeps the dust cap (not shown in the illustration) in its place.

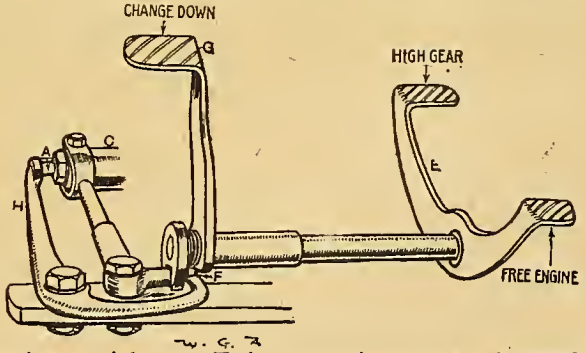
The Controlling Mechanism.

Fig. 2 shows the method of control. The pedal G is responsible for the low gear, and a sharp tap on it with the foot, transmitted through the lever H to the inner shaft A, releases the pawl B (fig. 1) and drops the gear down one notch. Inside the shaft on which this pedal is mounted runs the shaft to which the pedal E is attached, which acts directly on the fork operating the shaft C (fig. 1), by means of which the pawl is held out of engagement from the ratchet during the movement from zero to maximum, or *vice versa*. Pressing this pedal forward works the high gear, which pressure in the reverse direction pulls the pulley open, and low gear is instantly obtained.

The gear ratios obtained are 4, 4¾, 5½, 6¼, and 7 to 1. The advantages of the independent belt tensioning control are obvious, while the fact that the free engine position can be obtained simply by depressing the after heel plate of the rocking pedal E is an excellent point.

On the Road.

While at Mr. Brown's we were given a short demonstration of the working of the gear, which in this case was fitted to a 3½ h.p. Midget bicar to which a sidecar was attached. The machine behaved extremely well on a short steep hill in the vicinity, and the gear at once showed its worth. The first tap brought the gear down the first step and allowed the



engine to pick up. Twice more the gear was lowered, and finally the rest of the hill was taken on second speed. We then took over the driving of the machine, and found the gear quite easy to handle, despite the two pedals and the belt tensioning lever, even in the traffic of Reading, best known for its biscuits and central standards. The gear is really quite sound, and a credit to its designer.

Reliability Trial of the Cape Peninsula M.C.C.

By ARNOLD KEYZER.

AFTER eighteen months of existence the club brought off its first reliability trial on May 16th. The course selected was from Salt River (a suburb three miles distant from Cape Town) *via* Bellville, Somerset West, to the top of Sir Lowry Pass—36½ miles—and back to the starting point.

Competitors had to observe the following average speeds to and from the bottom of the pass: (*a*) Solo machines up to 299 c.c., 16 miles; (*b*) up to 599 c.c., 20 miles; (*c*) up to 1,000 c.c., 24 miles per hour. (*a*) sidecar machines up to 599 c.c., 16 miles; (*b*) up to 1,000 c.c., 20 miles per hour.

Riders ahead or behind their schedule time would lose marks at the following rate: *a*: 8, *b*: 10, and *c*: 12 per minute.

Competitors being allowed watches and speedometers and freedom to stop where it pleased them, it is no small wonder—with the guiding milestones at the roadside—that big losses of marks cannot be recorded.

From Bellville the route led through Knils River with its many good stretches of road, crossing the railway line near Gerste River, through Faure and Firgrove, where again a free crossing of the line was encountered. Hereabouts the belt of W. H. Eastoe's 3½ h.p. Bradbury came off, but was soon replaced.

Half the village seemed present round the control at Somerset-West, where H. S. Olive, who steadily had overtaken the field on his 7 h.p. Indian (he had to maintain a speed of 24 m.p.h.), was one of the first to see his time recorded. He was two minutes behind time, thus losing 24 marks.

A Water-splash to Negotiate.

Another four miles over a very hilly road brought the men to the water-splash at the bottom of the pass. Those behind time dashed through the river and were lucky to evade magneto troubles; others made use of the board which serves as a bridge a few yards away. The competitors were timed on the pass, which hill-climb (on formula) formed part of the reliability trial. Had the latter been a non-stop, hot engines might have accounted for many failures in a 3½ miles climb. No one failed to reach the top bar W. Haslam, whose 3½ h.p New Hudson and sidecar, being geared too highly, came to a dead stop near the hairpin bend. J. Brooke (2¾ Douglas) took the water at the bottom and met with immediate magneto trouble; he changed his plugs in vain, and was in difficulty all the way to the top, only one cylinder firing.

To see such expert riders as Douglas (3½ Triumph) and Thornton (3½ Bradbury) taking the hairpin bend was to many an eye-opener in the art of cornering.

Olive (7 Indian) came up with a tremendous pace but cut out at the bends. He made the fastest ascent in 6m. 4⅗s. W. H. Logeman (3½ Humber) did very well in his initial competition.

The Hottentot Holland Mountains, over which the pass rises, are well-known for their scenery. Far below one watches in the hazy distance the glittering surface of the ocean—motionless on this still day—reflecting the rays of the sun. Nearer by, far below in the deep, a road winds its way through pasture lands, where homesteads speak of the farmer's life, where cattle graze, and horse, mule, and ox supply the labour for the tilling and the ploughing of the soil.

On the return journey many took the water-splash in daring fashion. Through the control at Somerset West the riders went along without any incident, only T. C. L. Smith's 2¾ h.p. Torpedo-Precision came to a stop at Gerste River through the breaking of the exhaust valve; the inserting of a spare one and the rider's subsequent sprinting saw him without loss of marks at the Bellville control.

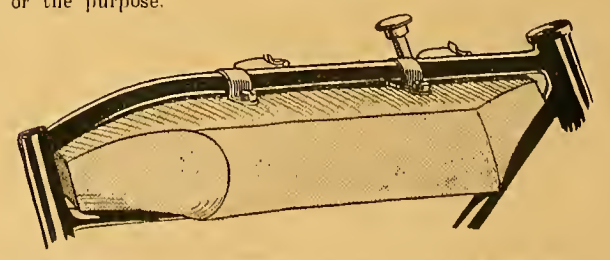
As a club run and subsequent hill-climb the day might have been called a great success; as a reliability trial the writer opines that the factor of reliability, in the sense it is understood in other motor cycling centres, has been conspicuous by its absence.

The maximum number of points to be gained was: For reliability 2,200, hill-climb 400. Result:

Competitor.	Cyl. Capacity.	Marks for Reliability.	Marks for Hill-climb.	Total Marks.	Time Ascending the Pass.
	c.c.				m. s.
1. A. Douglas, 3½ h.p. Triumph	499	2,190	400	2,590	6 31⅘
2. W. H Logeman, 3½ h.p. Humber	499	2,190	330	2,520	8 9⅘
3. W. Boylin, 2¼ h.p. F.N.	249	2,200	304	2,504	12 31⅘
4. S. B. Priston, 3½ h.p. P and M.	465	2 200	302	2,502	10 9
5. J. Thornton, 3½ h.p. Bradbury	554	2,190	302	2,492	7 25⅘
6. E. F. Jenkins, 2¼ h.p. P. and M	256	2,200	290	2,490	13 32

IRELAND SINGLE AND TWIN MACHINES.

A VERY sensibly designed motor cycle is being built by Ireland's Garage, Cleveland Road, Wolverhampton. Three models are constructed, a 3½ h.p. 80×90 mm. single, a 4 h.p. 67×83 mm. twin, and a 5·6 h.p. 67×90 mm. twin. In each case the Blumfield engine is used, and is giving great satisfaction. The frame is on standard lines with a dropped top tube which sweeps down neatly to the line of the back stays. The Bosch magneto is handle-bar controlled, and a B. and B. carburetter is fitted. Saxon spring forks are supplied and the standard finish is in blue with a gold lining giving the machine a very smart appearance. The tank is rounded off at the sides and cut away at the rear so as not to chafe the legs, and the front mudguard has side flaps extending its full length, which very important point we fully appreciated when we came to have a trial run, as it was raining at the time and the roads were in a shocking state. We tried both the 3½ h.p. single and the 4 h.p. twin on the road and found them particularly comfortable. The twin emitted a soft purr and its pick up was wonderful, yet no vibration was felt, although we reached a fair speed on a deserted road. The single has the healthy kick of a moderately high compression engine, though we were absolutely unable to make it knock even running slowly in traffic on a high gear after a warm up in the country. Mr. Ireland does a large amount of motor cycle repair work, and has a well equipped shop for the purpose.



The Ireland tank, which is rounded at the sides and cut away at the rear.

FIRST RELIABILITY TRIAL AT THE CAPE (See opposite page).







(1) W. H. Eastoe (Bradbury) leads the competitors in the descent of the mountain pass.

(2) H. S. Olive (7 h.p. Indian) nearing the top of the pass. The grand scenery in these parts will be noticed from the photographs.

(3) Group of competitors at the luncheon stop.

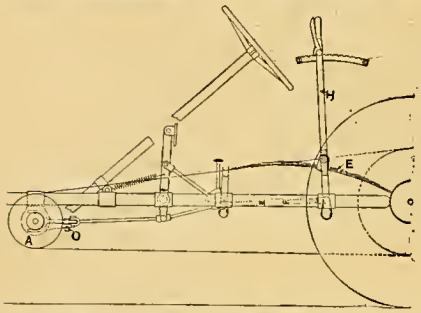
(4) The winner, A. Douglas (3½ h.p. Triumph) negotiating the last bend on the pass in good style.

(5) T. Widdowson (Clyno sidecar) dashing through the watersplash on the homeward journey.

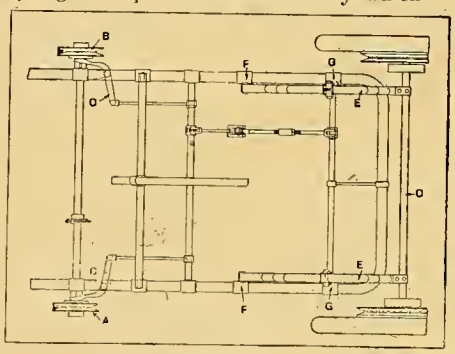
(6) C. E. Scott (Rudge) churning the water at the same point.

The Rollo Transmission.

Variation of gear is effected by the employment of the adjustable belt pulleys A B, which are operated by lever mechanism C. Belt slack is



compensated by moving the back axle D, which is mounted upon springs E, carried by sliding members F G. Upon one spring E is pivoted a lever H by which

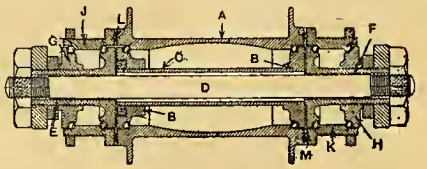


PATENTS by Eric W. Walford A.C.I.P.A.

the axle is moved and this lever is also connected to the pulley operating mechanism C, so that the pulleys A B and rear axle D work in unison. Various detail features of this gear are described in the specification.—J. D. Rowland, and Warne, Wright and Rowland, Ltd., No. 14,313, 1911.

A Detachable Wheel.

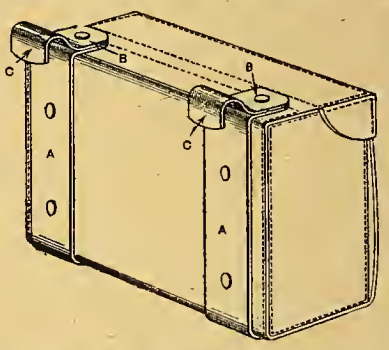
By this invention it is possible to remove the central wheel-carrying part of the hub from the frame, leaving the



pedalling free-wheel and engine pulley-carrying members in place. The hub barrel A is mounted upon ball bearings B on a sleeve C, through which passes the usual fixed spindle D. Around the spindle D, on either side of the barrel B, are mounted sleeves E F, these sleeves being secured in the fork ends, and carrying ball bearings G H, upon which run supplementary hubs J K, adapted to carry the free-wheel and belt pulley respectively. The hubs J K are provided with dog clutches at L M, engaging corresponding clutches on the barrel A. To remove the wheel the spindle D is removed. This allows the forks to spring open, disengaging the dog clutches L M, and allowing the barrel A to fall clear, the supplementary hubs J K remaining in place together with the driving members carried by them.—J. M. Lamb, No. 17,241, 1911.

Toolbag Attachment.

With a view of affording better support to toolbags which are hung on the side of the carrier, the metal strips A, instead of merely running along the side



of the bag, are turned over as at B, and then turned back upon themselves to form the hooks C.—E. Lycett, No. 17,865, 1911.

Sidecar Mats.

Brown Bros. are marketing a cocoanut fibre mat, fourteen inches square, and made specially thick. This is a comfortable addition to the sidecar.

Free Garages.

H. Holt and Co., 68a, Regent Street, Leamington, have made arrangements whereby they are now offering free garage to all motor cyclists.

Cyclecars of 1912.

Readers who desire to compare the different types of cyclecar now on the market, can obtain a list of these vehicles from Harrods, Ltd., Brompton Road, S.W., who have organised a special cyclecar department.

A Good Insurance Scheme.

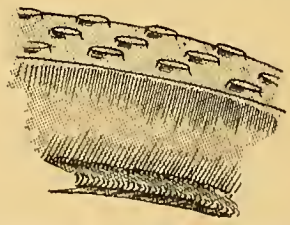
A new A.C.U. insurance policy, known as the Union Unlimited Policy, is issued by special arrangement with the Liverpool Victoria Insurance Corporation, Ltd. The premiums are divided up according to the horse-power, and are based on the total value of the machine and accessories. Contrary to most other policies, it covers claims arising whilst the insured is taking part in any event run under the A.C.U. rules, such as hill-climbs, reliability trials, consumption tests, and speed-judging, but excludes actual racing. The leaflet setting forth this policy has been got out by Mr. A. H. Priestley, insurance manager of the A.C.U., and Mr. T. W. Loughborough, the secretary. Anyone who takes out one of these policies becomes a touring member of the A.C.U. without extra payment.

SPARKLETS



A Good Belt.

At the request of the Roberts Motor Tyre Co. we have been testing a Roberts rubber and canvas belt on one of our machines, and it has behaved splendidly. The belt is flexible and even when quite slack it appears to grip sufficiently to transmit the power of a 2¾ h.p. twin. There are no cracks on the surface of the belt, which is a common fault, and the fastener ends of the belt are not bared of their rubber, which is a familiar sight on most machines. Roberts belts are sold by the Roberts Motor Tyre Co., of Gripwell Works, St. Mary's Row, Birmingham.



The new Englebert rubber studded cover with beaded edge, which is being sold by Englebert Tyres Ltd., 200, Great Portland Street, W.

Hill-climbing.

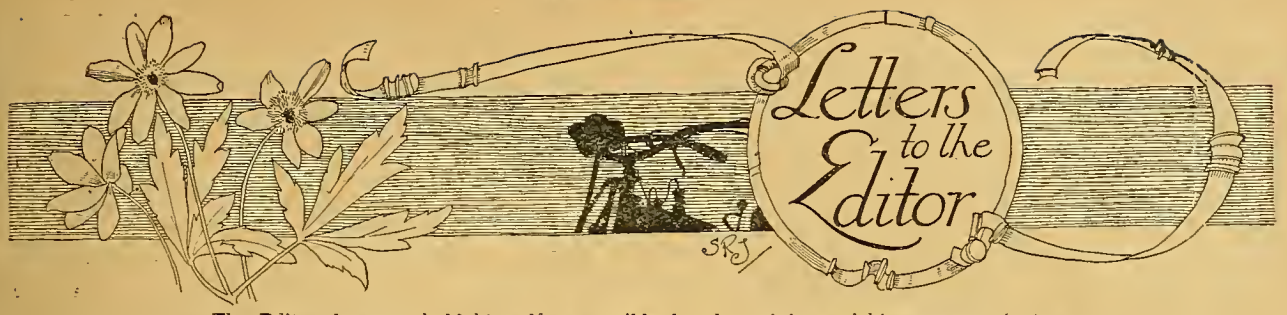
Returning from Edinburgh, J. Chater-Lea, jun., journeyed *via* the Lake District, taking the opportunity to visit some of the famous test hills, including Red Bank, Grasmere, and Kirkstone Pass. These hills were climbed successfully on standard gears, viz., 3⅞ to 1 top, 5¾ to 1 second, and 8¾ to 1 low, with heavy sidecar, passenger, and touring outfit, and after the machine had been run some 600 miles without adjustment.

Strength of Sidecar Axles.

One of the sidecar gold medallists in the London-Edinburgh Run, A. Sudfeldt, used a Millford-Cabrio, and during the journey the wheel of a passing van struck the axle of the sidecar wheel. Examination afterwards proved that only the mudguard was bent, which is a striking testimony to the strength and reliability of Mills-Fulford sidecars.

A Useful Pocket Book.

"The Autocar Log Book," obtainable from Chas. Letts and Co., Southwark Bridge Buildings, S.E., and *The Autocar*, 20, Tudor-Street, E.C., is a most useful pocket book both for the automobilist and motor cyclist. It contains a host of information, not the least useful being a table showing the speed per hour and the time for a furlong, quarter, half or one mile, which is most useful for checking the alleged speeds over measured distances. There is a chapter on motor car law, a chart showing at a glance the weekly mileage run, a list of towns and their hotels and repairers, a cost of maintenance table, a mileage register, and also a record for tours.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Hub and Counter-shaft Gears.

Sir,—With reference to "Ixion's" article in your issue of June 6th, why complicate a hub gear by incorporating the clutch in the hub? The place for a clutch, if not on the engine-shaft, is on the counter-shaft, where it can be made of ample strength for the work required of it, and where a kick starter can be easily fitted. This would dispense with another relic of the pedal bicycle, viz., the pedalling chain. The drive from the counter-shaft could then be by either chain or belt. A.G.

Sir,—Referring to the letter from the James Cycle Co., Ltd., in which they sum up the imperfect points in motor cycle hub gears:

"(1.) The restricted space in which they have to be carried entails the lightest possible form of construction, with consequence of occasional breakages.

(2.) The clutch working at slow speeds is usually very little over its work, consequently clutch slip is not rare.

(3.) Extra weight in the back wheel must slow the machine, and always interferes with the comfort of riding owing to the increase in road vibration from the back wheel. A heavy back is also productive of side-slip."

The best reply we can give to the James Cycle Co., Ltd., is that in the Junior T.T. Race last year, machines fitted with the Armstrong gear were first, second, third, and fourth.

THE ARMSTRONG TRIPLEX THREE-SPEED CO., LTD.

The Trade and the T.T.

Sir,—We think that everyone connected with the motor cycle industry should do whatever they can to keep up the wave of enthusiasm which is now being shown for motor cycling generally. A good deal of the interest in the pastime comes from having something to do and somewhere to go to, and therefore competitions and reliability trials, etc., serve a very good purpose.

As many of the manufacturers have this year decided not to support the T.T. races, may we appeal to some of the larger and more influential motor cycle agents that they themselves should enter a rider for these races?

We ourselves thought of sending a donation to the A.C.U. fund, but decided that perhaps it would serve the trade and pastime better if we entered a rider, and this we have done in the person of S. L. Bailey, who, it will be remembered, on his first ride with the Douglas machine which we supplied to him, put up the phenomenal feat of riding over fifty-six miles in the hour.

It may savour of impudence, but we have also entered Mr. Bailey on a 2¾ h.p. Douglas to ride in the Senior T.T. Race. This, we think, will provide a valuable lesson, and the comparison of the speeds of the machines will no doubt prove very interesting.

Another suggestion we have to make is that the more important clubs, who are all units of the A.C.U., should themselves be responsible for entering a rider in the T.T. Race; that each club vote from their fund, or subscribe voluntarily from among their members, a sufficient sum to enter one of their members in the T.T. Race. They could pick the best man, pay his expenses, and no doubt the A.C.U. could make a rule to fit the case.

THE COLMORE MOTOR CYCLE DEPOT.

[The above suggestion is an excellent one. It may interest the writer of the above letter to know that in 1907 the Coventry and Warwickshire Motor Club entered a member for the T.T. Race.—ED.]

Salisbury to Exeter.

Sir,—As one who has traversed the main roads in Devon and Somerset with great frequency, I should like to reply to the letter by "Wessex" on "Salisbury to Exeter" a recent issue, and strongly advise readers not to take the route suggested. I am entirely with your correspondent as far as Sparkford, but thereafter should suggest Ilchester, Ilminster, Ham, Honiton, and Exeter. This road is generally in splendid condition, and has no really bad hills; the scenery is also good. The only objection worth notice is the twisty nature of the route through Ilminster. It is also one of the most direct roads.

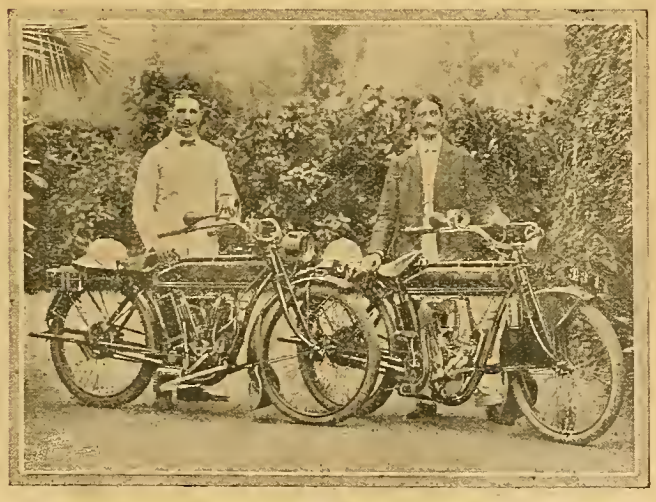
As regards "Wessex's" route, the road between Langport and Taunton is often poor, and thence to Exeter is uninteresting. There is a steep hill going either way near Wellington, and the surface through the town, especially in the wet, better left unexpressed. Between this town and Cullompton there is generally a lot of traction engine traffic which ruins the road, and the surface of it through Cullompton is regularly such as would disgrace a by-lane. In wet weather too, the grease from Cullompton to Exeter is truly appalling. I often go miles out of my way to avoid this. By Ilminster and Honiton the surface is flint, which is never greasy, interspersed with stretches of tar; the road is also wide and for the most part straight. T 585

The Motor Cycle in India.

Sir,—Enclosed please find a photograph of two Indian cycles, which are thriving exceedingly well in India. One is a 5 h.p. twin, and the other a 4 h.p. single (1911 models).

There is a good number of motor bicycles here now, and they are steadily increasing, but unfortunately there are no organised clubs or competitions of any kind. Triumphs and Rudges are mostly in evidence, but there are also Douglas, Enfield, Rover, Singer, Bat, Indian, Rex, Bradbury, F.N., and N.S.U. motor cycles on the road here.

Calcutta. K. EDMARK.



Calcutta riders of Indian motor cycles. Illustration referred to by K. Edmark in his letter on this page.

The Problem of the Automatic Carburetter.

Sir,—*Re* automatic carburetters, no mention has yet been made of the N.S.U. 1912 standard, as fitted to all their machines. This is a very good carburetter, and very flexible, but does not develop the power expected. So for experiment (and thanks to your suggestion) I had the Bowden extra air inlet fitted behind, and parallel with, the gas throttle. The improvement is immense, so much so that I feel other N.S.U. riders ought to know. It may or may not equal the power obtained from a B. and B., but it is a comparatively inexpensive fitment, well worth adopting. I am sorry to hear that the company is not prepared to supply the extra-heavy N.S.U. two-speed gear; this knowledge will doubtless be disappointing to many besides myself. HEILBRONN.

Holyhead Road.

Sir,—Readers will be interested to know that the road between Corwen and Cerry-y-Druidion is being well repaired, and should soon be in good condition. A few places are now covered with loose metal, and some corners require careful negotiating, but the road has good surface elsewhere.

At Conway Bridge, whoever wishes to view the river before passing over must keep one eye on the machine. I was fortunate to spy my James and sidecar being wheeled over to Conway. Chasing the purloiner (who turned out to be the toll-collector, not in uniform), I strongly protested, and demanded an explanation, and called a police officer. They informed me that because we were on Bridge property, and had not yet arrived at the tollgate, the collector had a right, in my absence, to arrest my machine to prevent us going away without paying the 3d. toll, which had not been demanded, and I was unaware that it would be required until the bridge had been crossed, no notice being seen to that effect

W.H.E.

Should Ladies Race?

Sir,—As one of the lady motor cyclists who does race, I think this matter should be left entirely to us. Any sporting club who has a ladies' class may be sure of my support (club secretaries, please note). We are not going to be frightened just because one or two of our number have had one or two falls. We have quite as much pluck, judgment, and nerve as you men.

(Mrs.) KATHLEEN H. SIMPSON.

Sir,—I cannot help thinking that Miss Walker is doing a grave injustice to the memory of the original Mr. Stiggins when she implies that the author of your leaderette on the desirability of allowing ladies to race is a fit and proper person to perpetuate his name and opinions. Surely it would grieve that well-meaning if mistaken gentleman to think that his name was associated with an article which strongly advocates reliability trials for ladies, particularly as that article appears in a journal which for the last six or seven years has always been ready and willing to give publicity to their successes as motor cyclists. Then fancy likening trial riding to perambulator pushing. Surely she knows, as a sportswoman, that the modern motor cycle requires to be driven rather than led.

In conclusion, I note that several ladies have written to you on this subject. Some of them are famous in the motor cycling world; very nearly all of them are well-known. They all disagree with your leaderette, but Miss Walker is the only one who has taken offence at it, and who has seen fit to call its author names. D. S. HOLMES.

Speedometers and Wheel Sizes.

Sir,—Is it not time that speedometer manufacturers realised the fact that the actual size of a tyre is less than the nominal size? My Cowey, which is an excellent instrument in other respects, was three per cent. fast last year with an Avon 26in. × 2in. tyre, and is nearly seven per cent. fast this year with a Palmer 26in. × 2½in. tyre. The error increases as the studs wear down, and I suggest that the makers should gear their instruments for a wheel about five per cent. smaller than the nominal size.

Ten years ago this matter was taken up with the Veeder Co., when it was found that a 27½in. Veeder cyclometer was more accurate than the standard 28in. size. After the matter was ventilated, the Veeder Co. geared their cyclometers for a smaller wheel. C. R. WOOLLEY.

The Danger of Uncontrolled Dogs.

Sir,—In reference to the correspondence regarding dangerous dogs. The exact reading of the law on this subject is: "It must be proved that the owner of a dog knows of its propensities." There you have the whole situation in a nutshell. I have studied the law as regards dogs carefully, and decisions from time to time in reference to the subject. You may know that a dog is a public danger. The police may know also, but unless you can prove the owner knows there is no redress. There is only one way out of the difficulty, and that is by means of "The Dogs' Black List," an idea instituted about two years ago, and which has only just lately struck road users as being a step in the right direction.

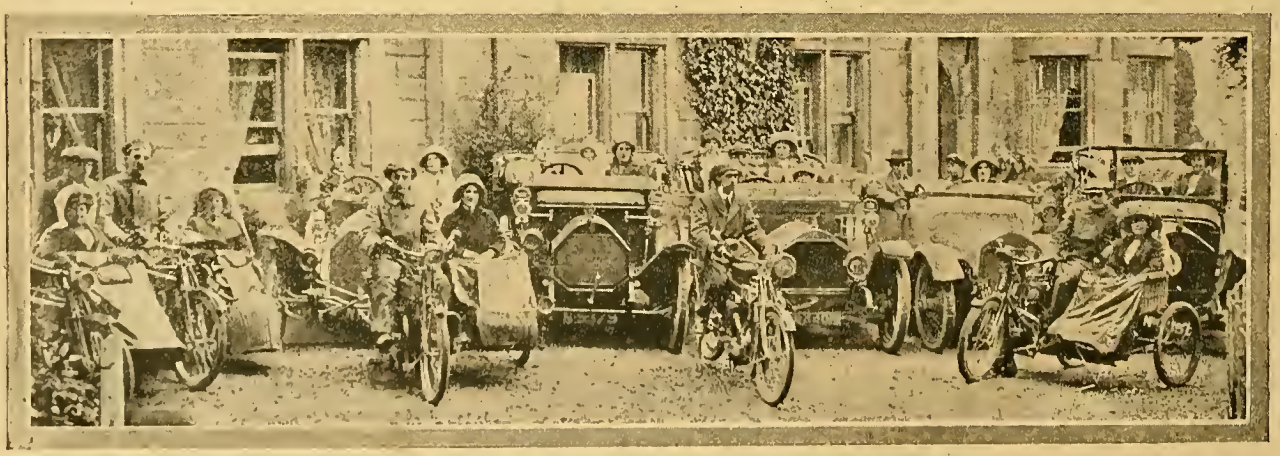
If any cyclist, or motor cyclist, who is attacked by a dog (the dog may not necessarily be vicious to be dangerous) will report the matter to me, and let me have a description of the dog and full name and address of the owner, I will take the necessary steps.

On a dog being reported full details are entered in the Dogs' Black List, a registered letter is sent to the owner, and the local police also asked officially to warn the owner. Should this dog offend again it is a simple matter to prove the owner knows of his dog's propensities.

If it is not possible to prove that an owner knows of his dog's propensities for running at or attacking cyclists or motor cyclists, it is a sheer waste of money, as the law at present stands, to take legal action.

Would you, therefore, in the interests of your numerous readers insert this letter on the subject in your next issue. I may add that under no circumstances is the name of the informer betrayed.

L. C. WILKS (C.T.C.)



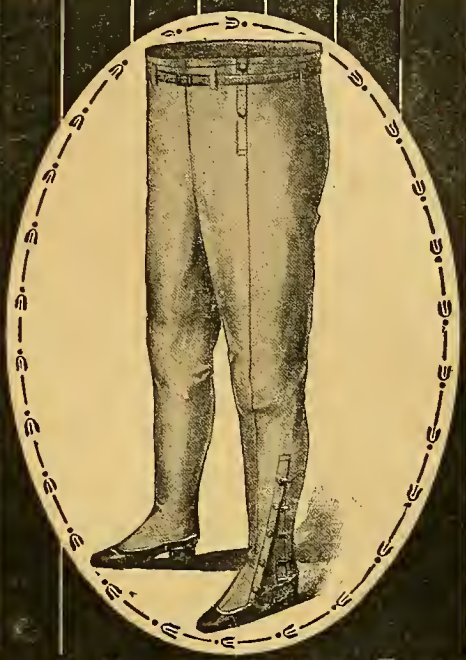
ANOTHER NEW MANCHESTER CLUB. Car owners and motor cyclists assembled outside the Hotel Rudyard, at Rudyard Lake, on the occasion of the first run of the Manchester Hundred Motor Club.



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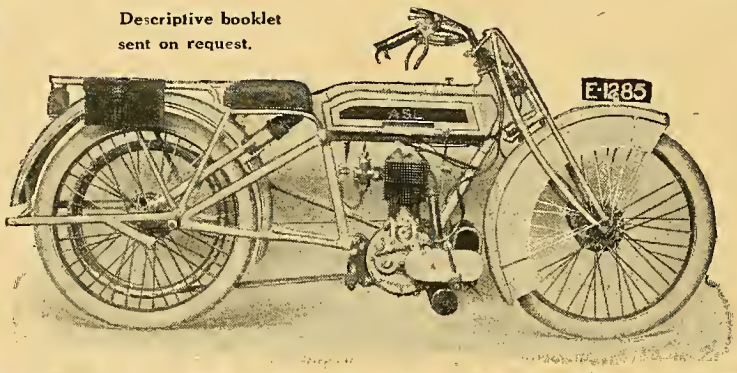
Complete Ladies Outfit for Sidecaring. Raglan Coat and Skirt. Price £2-12-0

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THE NEW MODEL A. S. L.

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Descriptive booklet sent on request.



is admittedly the motor cycle de luxe. Made in two models, viz.: 3½ h.p. single cylinder, and 5-6 h.p. twin cylinder, both with standard 26in. tyres, and fitted with the famous A.S.L. air spring suspension.

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Manufactured of Double Texture Fawn Waterproof Paramatta. Worn over the ordinary trousers, fastening round waist with leather strap and buckle. The construction affords great protection to the stomach. Impossible for rain dust and dirt to drive in on the rider's trousers as with the ordinary leggings. Strengthened at fork, spat feet, fastening at side with patent clips.

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THE "ALL-WEATHER" SUIT.

A Reliable Outfit at a Popular Price.



Manufactured in double texture fawn water-proof material. Coat, double-breasted, wind and rain cuffs, storm collar, throat tab, ventilated under arms, two side pockets with flaps. Leggings manufactured of the same material to match, with straps for attaching to brace buttons, spat feet. Stock sizes: Coat, length 36in., chest 40, 42, 44in. (size taken over coat) Leggings, full length 34in., length inside leg 29in.

Price of suit complete £1 5 0.
Coat only .. £0 17 6
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No. 2. " " " " 45 " " " 33 "
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100 pp. Motor Cycle Accessory Catalogue post free.

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Manufactured in double texture fawn Paramatta. Cut very full in the skirt. A new design for 1912. Double-breasted; wind and rain-proof sleeves. Breast pocket, storm collar, throat tab. Stock sizes: Length 39in., chest 40, 42, 44 and 46in. (size taken over coat)

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Coat—Manufactured of double texture fawn Paramatta, storm collar, throat tab, storm sleeves two outside pockets with flaps, ventilated under arms; proofing guaranteed. Stock sizes: Coat, length 36in., chest 40, 42, 44in. (size taken over coat).

Leggings to match the above, fitted with straps for attaching to brace buttons, spat feet, patent press buttons at side. Stocked in two sizes, *i.e.*,—
Men's No. 1, length over all 31in., length inside leg 28in.
Men's No. 2, length over all 33in., length inside leg 29in.

Price, quality A1—
Coat, single-breasted **£1 1 0**
" double-breasted **1 7 6**
Leggings .. per pair **0 10 0**



Post free.

In answering these advertisements is desirable to mention "The Motor Cycle."

Succombes Hill, near Caterham.

Sir,—I notice from last week's issue that Succombes Hill has just been re-discovered and climbed by a T.T. Douglas.

I think most of the riders in this neighbourhood have been up it at some time or another; Mr. E. M. Oliver climbed it on a Triumph several years ago, when I had the pleasure of photographing him in flight, which photograph was reproduced in *The Motor Cycle*. I myself was successful on a 2½ A.J.S. a few weeks ago. On the top bend, where the gradient is about 1 in 4 (I don't believe it is 1 in 3), there is a track about a foot wide in rideable condition, the rest being loose flints. But for the surface, Succombes would not offer much difficulty to a good modern machine, as it could be rushed easily but for the need for caution.

My first shot at the hill failed solely because I ran among these stones, then on to the footpath, and off again amongst the stones; after which I judged it time to shut off!

SYDNEY J. TAYLER,
Hon. Sec. Purley and District M.C.C.

Dangerous Driving.

Sir,—In reply to a letter signed "Within the Twenty-mile Limit," in your issue of June 13th, it is such riders as the writer of this letter, and such letters and complaints generally, which, to my mind, somewhat spoil the sport of motor cycling. I own a 1912 P. and M. on which I rode from Barnsley to Manchester on the Saturday immediately preceding Whit-Sunday, and from Manchester to Llandudno *viâ* Chester, and it is on that part of the road of which your correspondent complains, namely, Northwich to Chester, that I am summoned for driving to the danger of the public and for exceeding the speed limit by 6⅔ m.p.h., viz., 26⅔ m.p.h. In the first place the road is more than conducive to fast riding, but it may interest your readers to know that it is now possible to pull a machine up in a very few yards and also to pick up very quickly, and unless he was actually at the "blind" part of the corner he would not perceive the slowing of a machine. On the Saturday above mentioned the only traffic was motor traffic, and all, without exception, going in the same southerly direction.

I shall be glad if you will publish this letter as a reminder to other riders that Cheshire is still a very dangerous county. C 5546.

The M.C.C. London-Edinburgh Run.

Sir,—In connection with this year's awards there seems to be some misunderstanding as to the error from schedule of the various cup winners. It should be explained that the various winners' times given as 0 or zero meant that that particular competitor had made the least error from schedule. It seems to be popularly supposed that the competitors credited with 0 or zero did not make a second's error from schedule—a thing which is obviously impossible to anyone who has the most elementary knowledge of running to time.

I understand that the winners' times were not published to avoid any bickering over the awards, but from what I hear this arrangement has had quite the contrary effect. It seems to me in common fairness to those who were close up to the winners in this arduous trial that the winners' times should be published. What does the committee say?

SIXTY-FIVE SECONDS.

[With reference to the above letter, we have received an official intimation from the trials hon. secretary, Mr. Harry G. Bell, that in connection with the winners of the M.C.C. Cup and Clark and Wells Cups, the zero marks were only used to represent the best performances, as it was obviously almost impossible for anyone to accomplish the distance from London to Edinburgh and back without losing some time at the many checking places on the route. In the aggregate, the better of the two winners made an error of several minutes.—ED.]

Petrol Consumption.

Sir,—I have read your editorial remarks and the various letters from your readers in reply to my first communication, and I am afraid they are not very helpful. I only referred to the up-to-date 3½ h.p. machine, and I notice there are only six letters from riders of such a motor cycle, and their average consumption works out at a little over ninety miles per gallon. I further observe that you state that 100 m.p.g. is "not uncommon," which is a very different thing from being customary. I can only state that I take every opportunity of consulting riders on this important point, and from the information thus gathered, I am satisfied that the ordinary rider does not average over 80 m.p.g. I should be very pleased to obtain that result.

The knowledge that would be of benefit to myself, and no doubt many other riders, would be that from experienced riders who can give definite information as to how consumption is affected by gear ratio, patent jets, fans in the induction pipe, special arrangements of air tubes, and other economisers. Doubtless there are many who can give such experiences, which would be very useful to that large body of riders who have hitherto failed to obtain the desired result in the way of mileage to the gallon. ENQUIRER.

The Price of Petrol.

Sir,—At the Conference on the petrol supply, held at the Royal Automobile Club, a speaker, dealing with the present high prices of petrol, said that retailers all over the country had been robbing motorists during the past two months by charging from 2s. to 5s. per gallon. The same speaker pertinently enquired why, if there were directions in which retailers were controlled, they should not in like manner be prevented from sending the price of petrol up an unlimited scale?

The obvious reply (which, clear enough to those in the trade, is not so clear to others) is that organisations of weight and power are so extremely busy in keeping prices up, that they have no time (even if they have the inclination) to do the other thing, and protect the consumer from extortionate prices.

It will be within the memory of all that Gamages suffered the extreme punishment of expulsion from the leading motor society for selling a certain proprietary tyre under the list price. This being possible, can the public expect any such body to be interested in keeping down the prices of motor necessities? The remedy is in the hands of the consumers themselves. If they will only refuse to buy price-maintained articles, and will only do business with those houses which have always endeavoured to serve them well, even to the point of fighting manufacturers in the courts of law, they will soon find that such an inflated price as that of petrol will be impossible. A. W. GAMAGE, LTD.

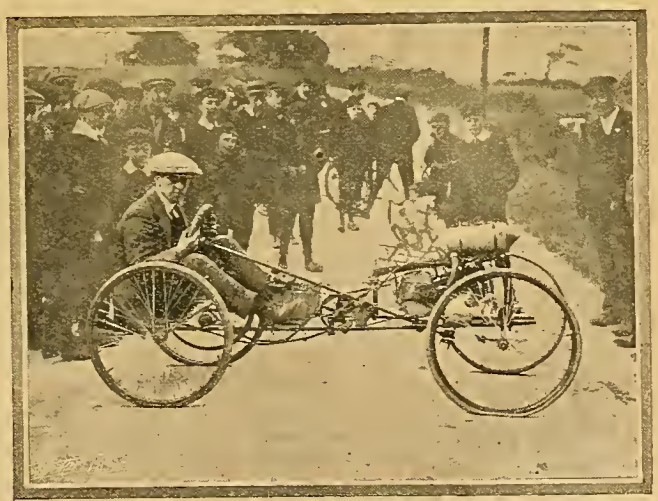
SUMMARY OF CORRESPONDENCE.

Will J. Summers send his full postal address to the Editor, as two or three communications are waiting for him?

Will G. Wakefield, who recently wrote to the A.A. and M.U., send his full postal address to the secretary?

Readers who have constructed their own cyclecars are requested to communicate with L. V. James, c/o the Editor.

We are asked to state that the letter signed Sydney R. Axford and published on page 647 of last issue had been unavoidably held over, and was a reply to Alex Rogers, whose letter was published a few weeks previously. In consequence the introduction was slightly amended.—ED.



A PUSHCYCLECAR. A real spider quad built by the driver, W. Garsides, of Brombledene, Pontefract. Bicycle tyres had been fitted but none were left after the Pontefract hill climb. The power is supplied by a 2¾ h.p. M.M.C. engine.

M.C.C. TEAM TRIAL FOR



"THE MOTOR CYCLE" CHALLENGE CUP

THERE was probably the biggest assembly of motor cyclists ever gathered together in England at the ninth inter-club team trial for *The Motor Cycle* 50 guinea challenge cup, which took place on Saturday last. With twenty-five teams taking part, representing 150 riders, and the big majority of the teams being accompanied by reserve men and supporters, the impressiveness of the sight of such a long line of motor cyclists can be imagined. Daventry (Northants) was the meeting point, the Motor Cycling Club's headquarters being at the Wheatsheaf Hotel. All roads led to Daventry on Saturday, and from early morning competitors began to arrive from such distant points as Sheffield, Yarmouth, Liverpool, Manchester, and Bristol. Naturally, the hotel accommodation was taxed to the utmost. It would appear that one of the reasons for the early assembly at Daventry was the belief that Newnham Hill would be included in the secret course, for nearly all morning practising was in progress on this noted acclivity.

The Club Championship.

The M.C.C. team trial carries with it the club championship, for the team trial organised by the A.C.U. the last two years was abandoned. There was never any doubt about the popularity of the M.C.C. trial, and a *résumé* of the results during the last nine years may be of interest. The cup-holders to date have been:

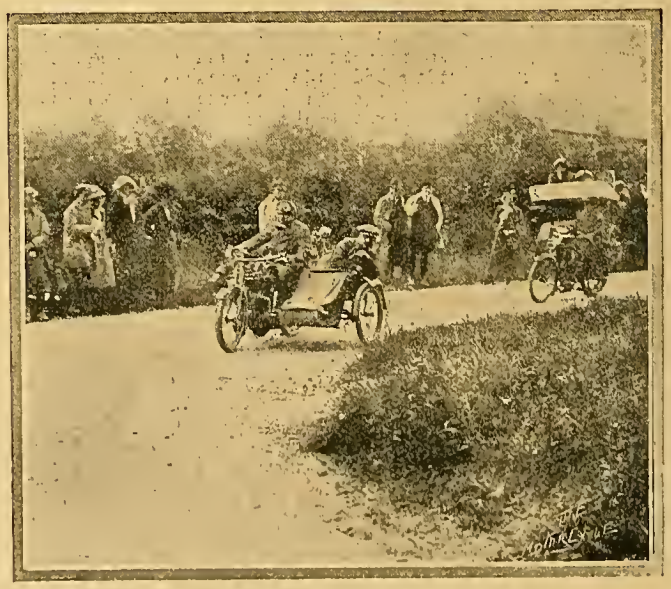
1904.—Coventry M.C.C.
1905.—M.C.C. walked over.
1906.—M.C.C.
1907.—Coventry M.C.
1908.—Coventry M.C. won old trophy outright.
1909.—M.C.C.
1910.—Coventry and Warwickshire M.C.
1911.—Derby and District M.C.C.
1912.—Nottingham and District M.C.C.

It was not until 1909 that a complete team of six finished the 100 miles course without a stop, but ever since that date the number of non-stop teams has increased, which, in view of the progress made in motor cycle construction, will cause no surprise.

Praiseworthy Organisation.

The start was at 1 p.m., and here we should interpose with a remark regarding the excellent organisation. The M.C.C. have had sufficient experience of the organisation of big events to ensure a trial passing off smoothly. For a long stretch before the starting point the positions of the clubs were clearly defined by cards on the grass by the roadside, and as every competitor had had a programme giving the starting times, there was a total absence of confusion. Numbers for the machines had been doled out by Mr. F. J. Jenkins, the trials hon. sec., an hour before the start. Just before 1 p.m. the chief marshal, Mr. R. H. Head, marshalled the men, and exactly at 1 p.m. Mr. F. T. Bidlake, the timekeeper, sent them off at intervals of twenty seconds.

The teams were despatched in alphabetical order according to the name of the club, the cup-holders, the Derby and District M.C.C., having pride of place. Only one team scratched, the Streatham and District M.C.C. Five complete teams had been got away before there was an incident to record, the Coventry and Warwickshire M.C.—the most successful club in the contest—losing a man at the start. H. Williamson, driving an 8 h.p. sidecar of that name, was unable to get away on being given the word to start, despite two attempts, and it was subsequently found that it was due to a broken clutch spring. The Coventry Club had two reserve sidecars at hand, but as Williamson had crossed the starting line he could not be withdrawn. This club, therefore, had virtually five representatives, who all made non-stops. F. C. Jones (Mersey M.C.) was unlucky at the start. His Bradbury had a choked carburetter jet, and he failed to get going. He returned to the start, and was allowed another attempt, but again the engine would not fire, and he appealed to the judges, pointing out that he should have been allowed two minutes. The rule, however, is that "a fresh start will be allowed any competitor returning



A. E. Lole (8 h.p. Campion-Jap sidecar), of the winning team, rounding the right angle bend near the starting point.



The tea stop on the third round.

to the starting point within two minutes of starting." The judges, Messrs. Brooker, Grew, and Dr. O'Rafferty, therefore decided that a third attempt was not permissible. A choked jet also put P. P. Syvret (Rex), Liverpool, out of the running almost at the start.

The Route.

This year's route started one mile from Daventry on the Banbury Road, and immediately after the start a right turn was taken for Staverton. After this village there was a gradual rise to Shuckburgh, followed by a descent to Southam. Just before the entrance to the village of Southam a lane to the left called Welsh Road led to Priors Hardwick, and a short stiff hill after the fork roads leading to the latter village caught five or six competitors napping. After Priors Hardwick the course followed through Upper Boddington, where a left turn was taken for Byfield, joining the Daventry and Banbury Road at this place. From Byfield to the finish the surface was excellent, the only other hill that called for extra throttle opening being the one at Badby.

We deplore the fact that the course was not more severe, as the contestants would have been weeded out so much more effectually. As it was, the run was a mere jaunt, and the last two rounds somewhat tedious.

Punctures depleted the ranks of many of the teams. R. W. Duke (Zenith), Birmingham M.C.C., was unfortunate in the first six miles, and he was joined by Brook (Precision), secretary of the same club. Further on, Durant (Norton), Sheffield, stopped mysteriously, his machine at once restarting in its usual style. R. C. Davis (Chater-Lea), Oxford, punctured, as also did F. E. Pither (Enfield), North Middlesex, and F. S. Bowles (Indian), Leicester.



Glyn Rowden (Triumph) N.W. London M.C.C. leading competitors down the hill near Badby.

Members of the South Birmingham M.C.C. running regularly. This team finished complete.

M.C.C. Team Trial.—

The passenger machine is usually the weak spot in the team trial, and Saturday's contest was no exception to the rule. No less than six clubs could boast of non-stop runs throughout the motor bicycles, but not so with their passenger machines, which is interesting and instructive reading.

The Derby Club men were anxious to retain possession of the trophy, and set out with machines perfect to the last degree. Unfortunately, two of their men ran off the well marked course, which entailed disqualification.

And so the afternoon progressed, trifling troubles gradually thinning the ranks. The villagers turned out in their hundreds to watch the long line of riders file past, the boys having quite a memorable day throwing their hats at the machines. We saw some of the competitors making a collection of caps, and as a lesson to some of the rascals Sam Wright caught two or three and carried them two complete laps before returning them to the owners. This action had the desired effect.

Several droves of cattle hindered the riders, and a heifer which ran almost wild, and attempted to race one bunch of competitors, helped to vary the monotony.

An Appreciated Change.

This year a change was made in the order of starting the riders. Each team was sent off complete, so that friends rode together, instead of a Bristol man finding himself with a total stranger from Liverpool, for instance, as was the case in previous years. Besides, it was easier to tell how many teams were still in the running, and there was a big crowd of interested motor cyclists watching the proceedings.

Once again a new club scored a success, though seven complete teams recorded non-stops throughout, if we include the Derby and District M.C.C.

The Nottingham men annexed the trophy by regular running, beating the next club by 7m. 1s. There was great jubilation in their ranks when the results were announced the same evening; in fact, they scored a popular win.

Below we give the composition of the six teams of riders who completed the trial with full scores in the order in which they finished.

Winners of "The Motor Cycle" Challenge Cup.

FIRST.—NOTTINGHAM AND DISTRICT M.C.C.

	Time error m. s.
N. O. Soresby (3½ Rudge)	15 11
J. Farnsworth (3½ Rover)	16 54
C. R. Smith (4½ C.C.R.)	5 30
J. Richards (3½ Sun)	6 15
J. R. Sylvester (3½ New Hudson)	9 7
A. E. Lole (8 Campion-Jap sc.)	8 23
Total error ...	61 20

SECOND.—BEDFORD AND DISTRICT M.C.C.

S. Crawley (3½ Triumph)	10 45
E. Murkett (3½ B.S.A.)	11 4
S. Savage (3½ Triumph)	11 20
G. Crawley (3½ Trinmph)	11 36
F. Waring (2¾ Enfield)	11 46
L. Kell (3½ New Hudson sc.)	11 50
Total error ...	68 21

THIRD.—SOUTH BIRMINGHAM M.C.C.

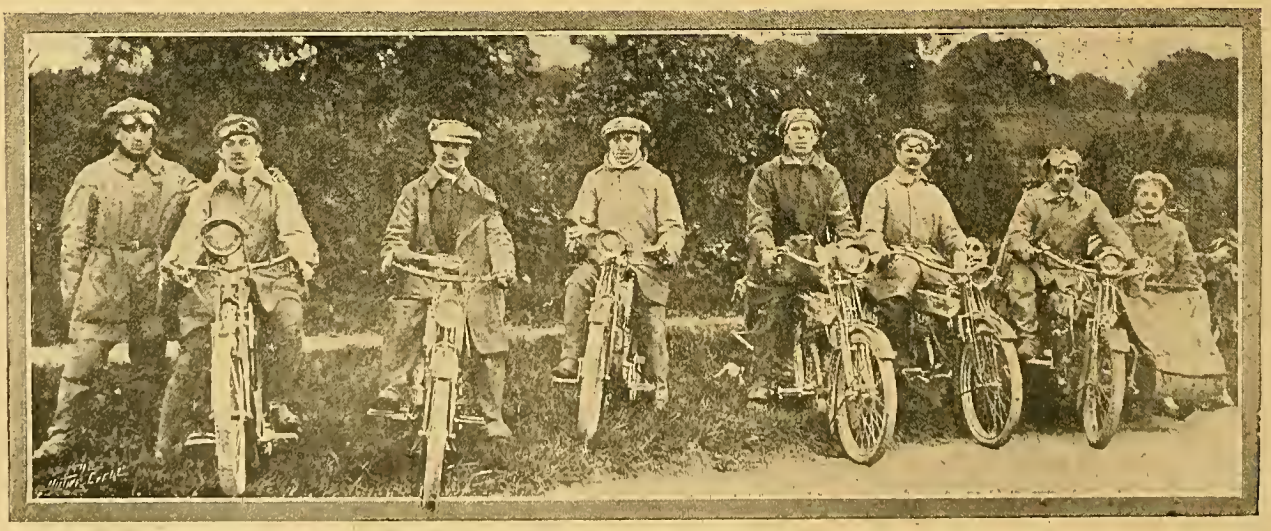
J. H. Percox (3½ Alldays)	11 35
L. Poole (3½ B.S.A.)	10 19
S. A. Rowlandson (3½ Rudge)	11 2
L. Bees (3½ L.M.C.)	12 8
J. J. Woodgate (3½ Singer)	12 42
T. W. Atkin (6 Enfield sc.)	11 50
Total error	69 36

FOURTH.—MOTOR CYCLING CLUB.

W. Pratt (3½ P. and M.)	12 12
H. Karslake (3½ Rover)	12 10
E. Pond (3½ Rudge)	12 30
R. M. Brice (3½ Brown)	12 44
P. Moffatt (2¾ Douglas)	12 50
W. Chater-Lea (7 Chater-Lea sc.)	12 57
Total error ...	75 23

FIFTH.—BRISTOL M.C.C.

F. C. Wasley (2¾ Douglas)	13 19
P. Phillips (2¾ Douglas)	13 34
— Keelan (3½ B.S.A.)	13 28
Eli Clark (2¾ Douglas)	14 18
F. P. Davies (3½ Rudge)	10 37
W. W. Douglas (8 Williamson sc.)	14 31
Total error ...	79 47



THE NOTTINGHAM AND DISTRICT MOTOR CYCLE CLUB TEAM, WINNERS OF "THE MOTOR CYCLE" CHALLENGE CUP.
Left to right—N. O. Soresby (3½ h.p. Rudge), J. R. Sylvester (3½ h.p. New Hudson), C. R. Smith (4½ h.p. C.C.R.), J. Farnsworth (3½ h.p. Rover), J. Richards (3½ h.p. Sun), and A. E. Lole (8 h.p. Campion-Jap sidecar).

M.C.C. Team Trial.—

SIXTH.—WALTHAMSTOW M.C.

	Time error. m. s.
J. H. Kerr (3½ N.S.U.)	12 3
F. W. Applebee (2¾ Centaur)	8 9
A. E. Ufflеman (3½ Rudge)	29 0
A. G. Peppercorn (3½ Bradbury)	9 9
W. Wilson (2¼ S.I.A.M.T.)	11 39
G. West (8 Chater-Lea sc.)	12 0
Total error ...	82 0

The following accomplished non-stop runs:

COVENTRY AND WARWICKSHIRE M.C.—A. Elson (3½ Singer). W. F. Newsome (3½ Triumph), A. N. Barrett (3½ Rudge), S. Wright (3½ Humber), and Geoffrey Smith (3½ Rover).

LIVERPOOL AUTO CYCLE CLUB.—N. Brown (7 Indian), W. Heaton (A.J.S.), C. Hobbs (Humber), J. H. Fox (3½ Rudge), and S. W. Philpott (Humber).

LUTON AND SOUTH BEDS. M.C.C.—S. W. Brown (3½ Bradbury), G. Bone (3½ Triumph), C. Dickinson (3½ Rudge), R. P. Terry (3½ New Hudson), R. C. Deacon (3½ Rudge).

NORTHAMPTONSHIRE M.C.C.—A. E. Catt (3½ Triumph), W. Barratt (3½ Rudge), W. Lees (3½ Triumph), H. H. Saddington (3½ James), and C. H. Jolley (3½ Triumph).

OXFORD M.C.C.—H. G. Hill (3½ Bradbury), W. A. Matthews (3½ Triumph), G. F. Cooper (3½ Triumph), H. Askew (3½ Triumph), H. G. R. Slingo (5-6 Clyno and sc.).

SUTTON COLDFIELD AND MID-WARWICKSHIRE A.C.—Seymour Smith (3½ Norton), R. Holloway (3½ Premier), V. Busby (2¾ Humber), T. Pollock (James and sc.), and F. Whitworth (2¾ Douglas).

WOLVERHAMPTON M.C.C.—T. H. Haddock (2½ A.J.S.), Reg. Tonks' (3½ Rudge), G. Hill (3½ Rudge), J. T. Ireland (3½ Ireland), and A. J. Stevens (5 A.J.S. and sc.).

DERBY AND DISTRICT M.C.C.—A. Ainsworth (3½ Rudge), A. B. Bennett (6 Brough), H. Baker (3½ Triumph), and E. Russell (3½ Bradbury).

BIRMINGHAM M.C.C.—A. D. Arter (3½ James), H. Newey (3½ Ariel), W. H. Egginton (3½ New Hudson), and Dr. B. Fawssett (8 Chater-Lea Jap and sc.).

ESSEX MOTOR CLUB.—G. T. Gray (3½ Rudge), H. C. Hemy (3½ Service), J. A. Campbell (3½ Rudge), and A. Hill (7 Indian).

HERTS. COUNTY AUTO AND AERO CLUB.—E. A. Colliver (3½ Zenith), Norman Gutteridge (3½ Rudge), A. H. Colliver (3½ Zenith), and Maurice Down (7 Indian and sc.).

LEICESTER AND DISTRICT M.C.C.—A. L. Barker (3½ Singer), E. Folwell (3½ B.S.A.), E. Nedham (3½ Campion-Jap), —. Yates (3½ Rudge), and Mrs. Simpson (3½ Rudge).

NORFOLK M.C.C.—A. Adcock (5-6 F.N.), E. M. Wood (3 N.S.U.), G. Boswell (3½ Ariel), H. Collins (8 Matchless).

NORTH MIDDLESEX M.C.C.—G. L. Fletcher (2¾ Douglas), C. Q. Roberts (3½ Rover), D. H. Noble (3½ Rover), and H. C. Mills (3½ Premier).

BRISTOL BICYCLE AND MOTOR CLUB.—S. J. Fair (B.S.A.), —. Hinton (Douglas), and L. E. Scammell (Rex).

N.-W. LONDON M.C.C.—E. Rose (3½ P. and M.), Glyn Rowden (3½ Triumph), and W. Cooper (3½ Bradbury).

NORWICH AND DISTRICT M.C.C.—H. Chapman (3½ Triumph), F. Brighty (3 Jap), and G. Pope (3½ Triumph).

SHEFFIELD AND HALLAMSHIRE M.C.C.—J. Haslam (6 Zenith), S. Sawer (3½ Premier), and M. Neill (8 Zenith sc.).

MERSEY MOTOR CLUB.—F. Rees (3½ Rudge), T. Moore (3½ Triumph), and W. E. Smith (6 Zenith sc.)



The five motor bicyclists of the Coventry and Warwickshire M.C. team nearing Staverton. All made non-stop runs.

SAILINGS TO AND FROM THE ISLE OF MAN.

The following table shows the times of sailings between England and the Isle of Man on the more important days of the T.T. Race Week. Particulars of charges for motor cycles on the steamers between Liverpool and Douglas, and *vice versa*, and porters' charges at Douglas, are also included.

FROM LIVERPOOL.	FROM DOUGLAS.
THURSDAY, June 27th: 10.30 a.m., 2.45 p.m., and 12.50 night (a).	THURSDAY, June 27th: 9 a.m. and 4 p.m.
FRIDAY, June 28th: 10.30 a.m., 2.45 p.m., and 12.50 night.	FRIDAY, June 28th: 9 a.m. and 4 p.m.
SATURDAY, June 29th: 10.30 a.m., 2.45 p.m., 5.30 p.m., and 12.50 night.	SATURDAY, June 29th: 9 a.m. and 4 p.m.
MONDAY, July 1st: 1 a.m. (Sunday night), 10.30 a.m., and 2.45 p.m.	MONDAY, July 1st: 12.30 a.m. (Sunday night), 9 a.m., 4 p.m., and 12.30 night.

(a) Cargo and passenger steamer "Douglas" or "Fenella."

On MONDAY, July 1st, there will be an excursion at 1 a.m. (Sunday night), available to return from Douglas same day at 4 p.m. or 12.30 night. Steerage, 4/-; Saloon, 6/-.

FOUR DAYS EXCURSION TICKETS will be issued on FRIDAY, June 28th, by steamers leaving LIVERPOOL at 12.50 a.m. (Thursday night), 10.30 a.m., 2.45 p.m., and 12.50 night; also by Saturday's steamers, available until the following Monday or Tuesday. Steerage, 6/-; Saloon, 9/-.

FLEETWOOD AND DOUGLAS: From Fleetwood, every weekday, 10.30 a.m.; from Douglas, every weekday, 4 p.m. Extra Services: Fridays, Saturdays, and Mondays, commencing June 28th—From Fleetwood, after arrival of through trains due about 3.30 p.m.; from Douglas, 8.30 a.m.

The following charges are made for motor cycles when accompanied by passenger, single journey in each case.

MOTOR BICYCLE, 2/6; with sidecar, 5/-. MOTOR TRICYCLE, 5/-; if more than one seat 2/- per seat extra. Petrol tanks must be emptied before going on board.

PORTERS CHARGES AT DOUGLAS: Motor cycle—for conveying same from steamer's deck to pier, or *vice versa*, each porter, 6d.; for a porter assisting a person in charge thereof by conveying same to the pier, or *vice versa*, 9d.

Midland Railway Service: Daily from June 21st to the 29th. From Heysham 10.0 a.m. and 3.0 p.m. From Douglas 9.30 a.m. and 4.0 p.m.



IMPROVEMENTS TO THE T.T. COURSE.

The Quarter Bridge, which is now about twice as wide as it was last year. The new corner near Mr. Hall Caine's house. The car in the background is on the old part.

CURRENT CHAT

TIME TO LIGHT LAMPS.

June 20th	...	...	9.18 p.m.
,, 22nd	...	...	9.19 ,,
,, 24th	...	...	9.19 ,,
,, 26th	...	...	9.19 ,,

New Saucer Track in America.

A new saucer track banked to an angle of fifty-three degrees instead of the usual fifty degrees will be opened at Coney Island, New York, on Saturday next.

Road Agent's Assistance.

Near Barnet last week-end we saw one of the R.A.C. road guides rendering valuable assistance to a rider of a Douglas motor bicycle. The A.A. and M.U. scouts also helped a competitor in the M.C.C. team trial, who was in sad trouble with his tyres last Saturday on the London-Daventry Road.

A Late Entry.

The holder of the Tourist Trophy, O. C. Godfrey, will defend his title on a twin Indian of 497 c.c. capacity, bore and stroke 70×64.5 mm. It has been reported that he would not ride in the Isle of Man. Godfrey's entry brings the Senior T.T. entries to 49. There are 25 competitors in the Junior race.

An American Trial.

A Six Days' Trade Trial is to be held in the States shortly, and we understand that a Pinkerton detective will guard the machines each night of the trials. The Chicago Motor Cycle Club is the organising body.

Another Successful Ascent of Tow Top.

We are informed that a party of Southport motor cyclists made a journey to Tow Top on the 9th inst. Among those who succeeded in reaching the summit were two riders of Scott machines, Hugh Gibson (3½ Bradbury sidecar, Sturmey Archer gear) and G. Wray (3½ Bradbury sidecar, chain drive, Wray two-speed gear). The two latter had passengers in the sidecars. Mr. Fairhurst (two speed Clyno) had rather hard luck as he stopped on the S bend owing to the back wheel slipping in the loose surface.

French Grand Prix Cancelled.

The A.C.F. have decided to cancel the Grand Prix Road Race, which was to have taken place on the 30th inst. and will replace it by kilometre and mile speed tests in September. These road records will be divided into classes as follow: Single-cylinder motor cycles fitted with engines of 250 c.c., 350 c.c., and 500 c.c. Twin-cylinders, 350 c.c. and 500 c.c. Tricars and sidecars, singles, 350 c.c. and 500 c.c.; twins, 350 c.c. and 500 c.c. Cyclecars, singles, 760 c.c.; twins, 1,004 c.c.

Trip to the Isle of Man.

Mr. E. G. Young, Nottingham, who has in previous years organised a party to see the T.T. races, is again making similar preparations, but instead of travelling by rail the party will travel by road, leaving Trent Bridge on Sunday morning, the 30th inst., at 11 a.m., and returning by a convenient boat after the race on Monday, July 1st. The motor cycles will be garaged in Liverpool and picked up again on the return journey. Riders who do not reside in Nottingham will be welcome and should write to Mr. E. G. Young, The Bentinck Motor Co., Trent Bridge, Nottingham.

FUTURE EVENTS

June 28.—JUNIOR TOURIST TROPHY RACE.
July 1.—SENIOR TOURIST TROPHY RACE.
,, 6.—Dublin M.C.C. Open Hill-climb.
,, 15.—Irish Open End-to-end Reliability Trial.
,, 20.—B.M.C.R.C. Race Meeting.
,, 20.—Liverpool A.C.C. Open Speed Trials.
,, 20.—South Wales A.C., and Cardiff M.C.C. Open Speed Trials at Porthcawl.

SPECIAL FEATURES.

TOURIST TROPHY MODELS.
THE TEAM TRIAL.
THE SIX DAYS' TRIALS REGULATIONS.

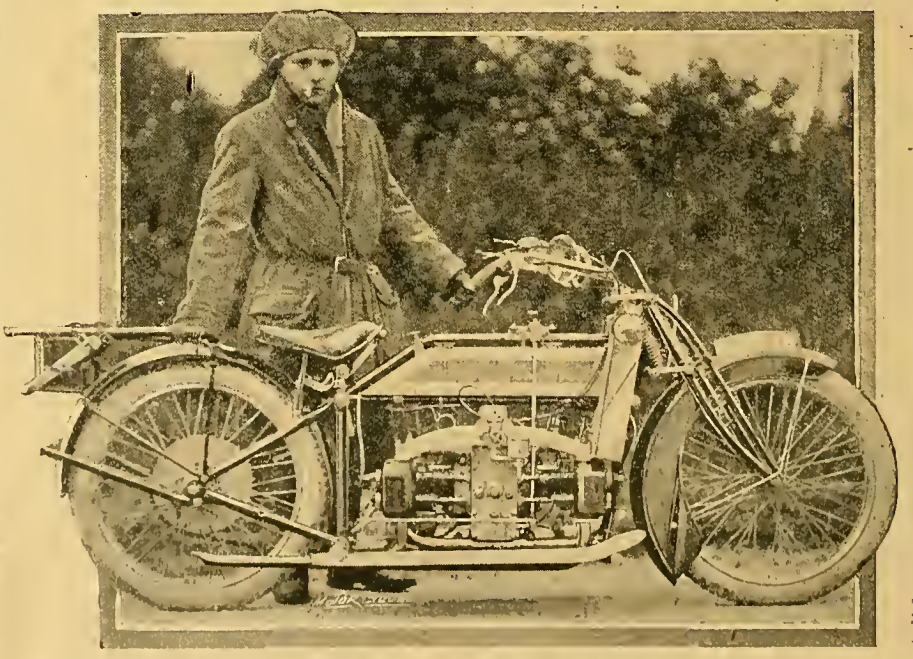
Next Week's Issue.

Next week's issue will be specially enlarged. Appearing on the eve of the Tourist Trophy Races, it will contain details of the competitors' machines, photographs of the practising, and latest information in connection with the races.

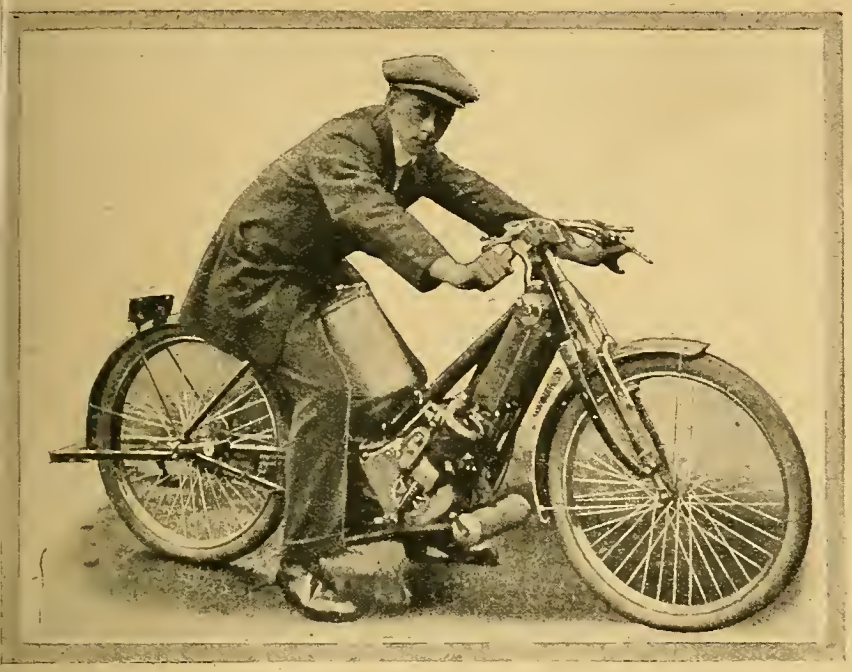
A number of other special articles will be included in this T.T. and Summer Number, and illustrations will be a feature.

Dinas Mawddwy the Attraction.

On the 16th inst. two Rudge multi-riders—F. J. Clarke and Stanley Heales, of Coventry—journeyed over to Dinas Mawddwy in order to try Bwlch-y-Groes, and there found A. Stewart Lloyd and Marcus Glasgow, on T.T. Triumphs, attempting the climb. Mr. Lloyd is the writer of the letter which appeared in our last issue. All were successful in climbing the pass, so the number of successes on motor bicycles to date is six. A week hence we have no doubt a sidecarist will have proved successful.



The first of the 8 h.p. water-cooled Williamson motor cycles. This machine has a horizontal engine and two-speed gear. It was seen at Daventry on the occasion of the Team Trial.



F. A. Applebee on his 1912 T.T. Scott.

Hill-climbing and Reliability Trial.

A course, which included Cudham Church, Toys, and Brasted hills, was used by the Brookdale Club last Saturday for a reliability trial with the following result: First, F. G. Kennard (Matchless), error 42s.; second, E. M. Oliver (Triumph), 102s.; third, H. A. Cooper (Bradbury), 104s.

New Cyclecar Record.

44 miles 1,650 yards were covered in one hour at Brooklands last week by J. T. Wood driving an 8 h.p. G.W.K. cyclecar. This interesting machine it will be remembered has a friction drive. The distance covered is a record for its type, the previous best being 43 miles 1,034 yards by a Bedelia.

Police Traps.

A trap is in operation in Richmond Park, starting about two hundred yards from the main Richmond Gate on the road to Kingston. Motor cyclists are recommended to exercise caution everywhere in the park.

Riders should exercise care in the near future in Ashton, Mottram, and Hollingworth, which are in the district of Stalybridge, and particularly in Mottram Road, Stalybridge.

Illuminating the Identification Plate.

Two Whitstable motor cyclists were summoned at Canterbury on Saturday last for failing properly to illuminate their identification plates. The solicitor for the defence said they were stopped under a powerful street lamp of 250 c.p., and their lamps, which were of 60 c.p., had no chance of showing their illuminating power under such circumstances. The magistrates' opinion was that the manufacturers were at fault; defendants had good lamps, and the identification plates were in order, but the light did not illuminate the plate. The cases were dismissed on payment of costs.

NEXT THURSDAY.

THE MOTOR CYCLE

T.T. and Summer Number

Motor Cyclists and the C.T.C.

At a meeting of the motor cyclist members of the C.T.C. resident in the Manchester district it was decided to form a motor cycle section.

A Change of Mounts.

W. Creyton, the old Triumph rider, who was first home on a single-cylinder machine two years ago, will ride a Junior T.T. Humber next week.

English-Dutch Trial.

Owing to extreme pressure on our space we are obliged to hold over an article concerning the Dutch International Trial until next week. There are now plenty of Dutchmen entered for the event, and the difficulty of the organising club, the Dutch M.C.C., is to choose a representative team.

M.C.C. Team Trial.

Donald S. Parsons, who was picked as a reserve in the Essex M.C. team, and whose presence was sought for last Saturday at Daventry, his place being finally filled by W. H. Wells, has sent us particulars of the reason he failed to reach the rendezvous in time. Tyre troubles dogged his footsteps from the start, and although he fitted new wheels, tyres, and tubes he only succeeded in reaching Daventry at 6.10 p.m., although he left home (Romford) about half-past six the same morning.

Of the South Birmingham team, J. H. Percox (Alldays) had water in the petrol, and L. Poole (B.S.A.) had his one-gallon spare petrol tank come loose, and carried it under his arm for forty miles, then his stand fell, and he kicked it up innumerable times until S. A. Rowlandson, riding behind, closed the spring by kicking it up against the back tyre. Considering the above, the South Birmingham Club's performance in being placed third is an excellent one.



THREE SINGER T.T. RIDERS. H. Petty, R. G. Mundy, and D. R. O'Donovan, who will ride Singer machines in the T.T. Races.

TOURIST TROPHY RACES.

News from the Island. Improvements to the Course. Advance Details of T.T. Models.

Tuesday, June 18th.

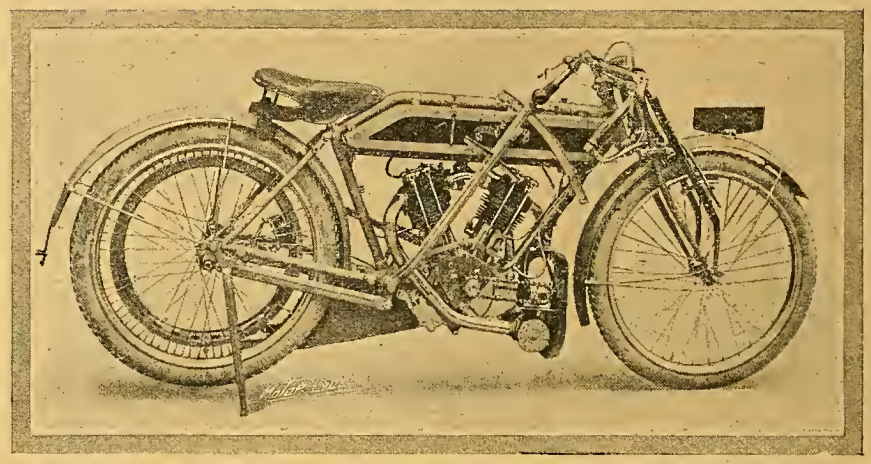
Practising for the T.T. Races begins on the course to-morrow (Wednesday). A few riders are in the island already, and by to-morrow the greater proportion of them will be on the roads. The two Manx riders, D. M. Brown on his twin Humber and Smith on his Triumph, fitted with a Sturmey-Archer gear, arrived on Sunday from Coventry.

Indignation is felt in the island by the action of the Auto Cycle Union in disqualifying Woodman because he has only one leg. Woodman has lived in England three years purposely to ride in the T.T. Races, and this year he was to have ridden a Humber. He has a good reputation as a rider on the island, where he has made his home for some time. This year's rule that competitors must not use their machines during the daytime is also causing annoyance, and some of the competitors have had to cancel their apartments at the country hotels along the course. The rule was made to prevent riders annoying country people by travelling fast at all hours of the day. The police have instructions to proceed against all riders who drive in any way to the danger of the public. Most of the competitors are stopping in Douglas, and the A.C.U. headquarters are again at the Hotel Selton on the promenade. The Triumphs and the Scotts will be at the Prince of Wales Hotel, Ramsey, and over a dozen are going to stop at Glen Helen, and several at the hotels in Peel.

Great improvements have been made to the Quarter Bridge corner (see illustration page 68), where the road has been widened considerably. Care at this corner will, however, be necessary as of yore. The corner near Mr. Hall Caine's residence has also been widened, and now is an "all out" curve.

Triumphs.

The Triumph machines to be ridden by J. R. Haswell and Ivan B. Hart-Davies possess no radical alterations from standard T.T. practice, with the exception that Sturmer-Archer gears are fitted, not with three ratios, but two only, for which the Triumph Co. have made a new gear operating mechanism. With three ratios one must find the right notch, but with the Triumph adaptation it is "high" or "low," and so simplicity itself in changing, no matter how hurriedly.



Valve side of the new T.T. twin Matchless, showing gear changing lever, etc.



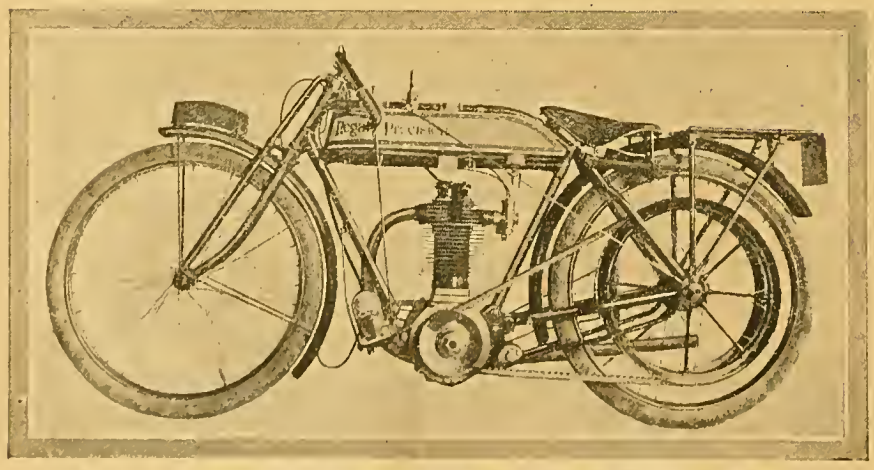
E. B. Ware, who will ride a Zenith in the T.T., with the new 493 c.c. J.A.P. engine.

Alcyon.

N. D. Slatter is not quite sure which of the two machines he has at present he will use in the Junior Race. Of these, one is fitted with a standard type of engine, 348 c.c., Mabon gear, and side by side valves. The other, which has not yet arrived from France, has also practically the same cylinder capacity. The engine, however, is interesting in that it has four overhead valves, one at each corner. The valves are set at an angle of 45°. The transmission is by chain, and the two-speed gear is the Rivière.

The Matchless T.T. Machines.

The 1912 T.T. Matchless machines differ in but minor details from those which were run last year. The variable gear is retained, but this has been improved considerably so far as handiness in practical use is concerned. The engine is a 3½ h.p. twin-Jap, constructed specially for the Matchless machines, and has a bore of 70 mm. and a stroke of 64.5 mm., the cubic capacity is thus 496 c.c. The valves are of the usual overhead Jap type, all mechanically operated. For its power output the engine is very light, turning the scale at 40 lbs. all on. In comparison with the size of the cylinders, the flywheels appear to be rather on the small size, but in this connection it must be pointed out that the engine is purposely designed to turn over at a very considerable speed. It is in order to keep up the revolutions and so have at command the utmost reserve of power that a special engine is being used rather than employ one of last year's pattern, 76 mm. bore, with the stroke sufficiently reduced to come within the 500 c.c. limit. With the same idea in view, the gear has this year been arranged to give the comparatively low ratios of from 3¼ to 1 to 7 to 1.



The 3½ h.p. T.T. Regal machine fitted with the new air-cooled overhead valve Precision engine. This machine has a Sturmey-Archer three-speed gear.

Tourist Trophy Models.—

Singer.

Of the four riders who have chosen Singer machines, three will ride the 2½ h.p. model with Sturmey-Archer gears, while H. Petty will also ride a 3½ h.p. fitted with the same gear. With the exception of foot-controlled oil pumps the owners will rely on practically standard T.T. models.

The Twin Humbers.

On a recent visit to the Humber works we were lucky enough to find four owners about to take delivery of their new T.T. mounts. They were P. J. Evans, Douglas Brown, J. T. Bashall, and W. Creyton. All were in the best of spirits, and appeared delighted with their machines. The little 2¾ h.p. twins have not been greatly altered for the 1912 race. The most striking change is the large tank, which is elliptical in section and fits neatly into the frame, where it is fastened by three steel bands. Armstrong three-speed hubs are fitted, as also are Amac carburetters and a neat form of handle-bar magneto control. The foot brake is supplied with a heel-operated pedal on each side of the frame, which should be a great convenience, especially for corner work. The machine in our illustration belongs to D. Brown, who has had the standard horned handle grips replaced by Rough-rider grips.

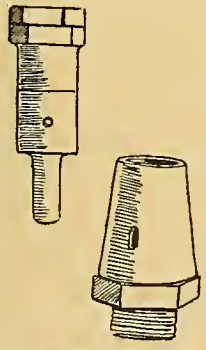


New Humber magneto control operated from the handle-bar.

Precision.

A call on Mr. F. E. Baker produced some interesting facts, for besides his usual and competition models he has three new types on the stocks, all of which will most likely be seen in the Isle of Man.

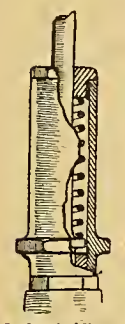
Firstly, there is the new 85 × 88 mm. overhead valve engine. This engine is more or less experimental, though it has given good results on the road. The valves open directly into the cylinder head, and may be detached, with their springs and seatings complete, in an extremely short time. One of the most noticeable features of this engine is the size of the radiating fins, which are very large where they encircle the cylinder head and gradually taper away towards the base.



Adjustable tappet and guide of the 2½ h.p. Precision.

A neat enclosed spring holds the long tappet rods down.

This is an extremely interesting engine, and its performances will be watched with great interest. Next comes the new long stroke 2½ h.p. engine, 70 × 90 mm. This engine is on the standard 2½ h.p. Precision lines throughout, however it differs in the size of its valves, the exhaust being considerably larger than the inlet. The usual Precision oil catcher on the pulley side, which has been so extensively copied, is fitted to this engine.



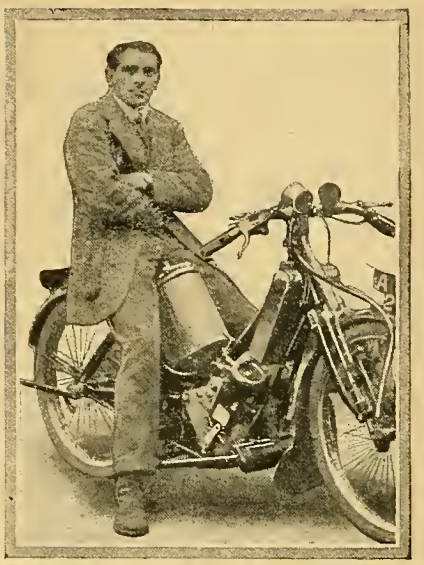
Spring holding down tappet of overhead valve

Mr. Baker tells us that his new 2½ h.p. model shows greater efficiency on test than his 3½ h.p. pattern of two years ago, surely a fine example of the progress of the industry.

Lastly, we were shown the Green water-cooled engine, 85 × 88 mm. in a state bordering on completion. F. E. Baker, Ltd., will shortly market this engine in several types suitable for motor bicycle or cycle-car work. Many of our readers will remember this engine, but for the benefit of those who do not we may say that the cylinder has overhead valves, and below these is fitted a water jacket and radiator combined, thus giving what is probably the neatest and lightest possible form of water-cooling.

Regal-Precision.

The two types of T.T. Regal Precisions are two of the most interesting machines we have seen. Jack Woodhouse will use the 85×88 mm. overhead valve air-cooled engine, out of which we hear he has been getting good results. It is fitted with a Sturmey-Archer three-speed. Both brakes are foot operated on the rear wheel, one by each foot. H. C. Mills and S. F. Garrett will probably ride the two new water-cooled Green engined machines, which are fitted with the Brampton gear. Both air and water-cooled machines will be used in the T.T. with 28in. × 2¼in. Hutchinson tyres, rigid forks, dropped top tube, large tanks with baffle plates, and a sump for collecting foreign matter. Best and Lloyd semi-automatic lubricator, special Amac carburetter, and Bosch enclosed magneto are also features of these well thought out machines. The Regal have a very businesslike appearance, and are not unlikely to be conspicuous in the race.

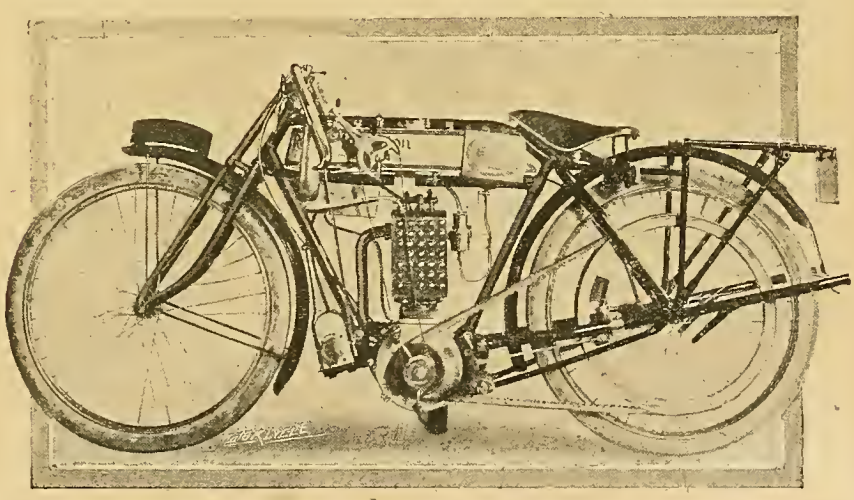


Frank Philipp with his new Scott racer. It will be remembered that this rider accomplished the fastest lap in the Senior T.T. last year.

Messrs. Smith and Woodhouse, the manufacturers of this machine, tell us that, though they are doing well with their 2½ and 3½ h.p. touring models, there is a particularly big demand for the 4½ single with variable gear for sidecar work.

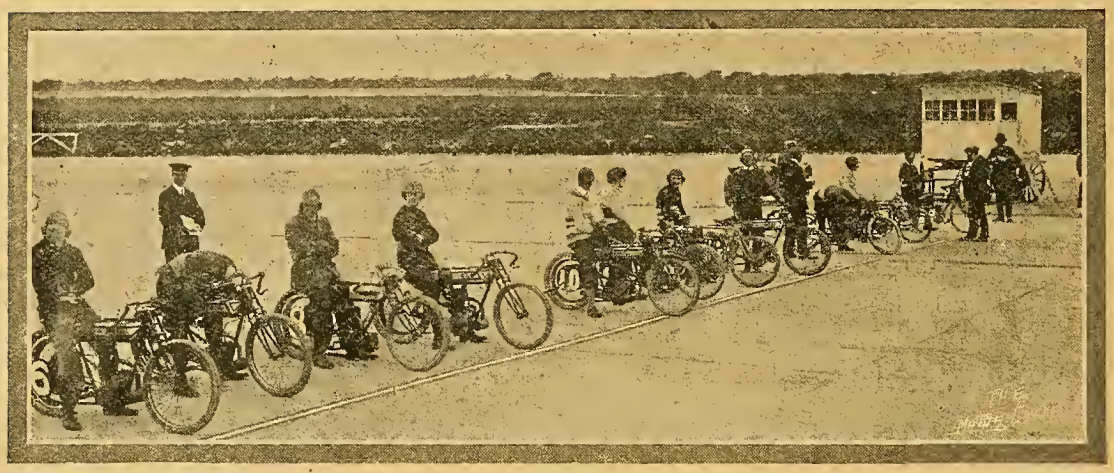
Two-stroke Scott.

The Scott machines supplied for this year's T.T. have a few striking alterations. The engine, 2¾in. × 2½in., is water jacketed round the cylinder only and not round the head. The distributer valve is now operated by a train of gear wheels arranged so as to be easily accessible. Two plugs are set in each cylinder head, and two long pipes extend rearwards from the silencers. 26in. × 2¼in. beaded edge tyres will be used, and also a powerful type of Crabbe brake on the rear wheel. The gear ratios will be 3—1 and 4.8—1, and the two gallon tank around the seat tube is fitted with an exceptionally large filler.



AN ENTIRELY NEW MOUNT. A 3½ h.p. T.T. water-cooled Regal-Precision, fitted with Brampton variable gear. J. W. Woodhouse will ride this machine, which is considered to have a splendid chance in the race.

B.A.R.C. JUNE MEETING.



Lined up for the start of the 8th Long Motor Cycle Handicap.

THOSE who helped to form the very fair crowd of spectators at Brooklands last Saturday saw some excellent racing, as several motor cycle events and more than one car race provided some very close finishes. The first motor cycle race was the second event on the programme—the ninth short motor cycle handicap. Distance, about 5¾ miles; fork start. First prize, £10 or cup; second prize £5 or cup; third prize £3 or cup. The weather was fairly fine, but a very strong wind was blowing. Martin's machine had a force feed petrol system fitted, which consists of a small bore pipe from the exhaust, the pipe is coiled round the outside of the main air intake and enters the carburetter behind the jet, the exhaust helping to vaporise the petrol and increase the air draught.

Edmond (2 h.p. Humber), the limit man, made a good start, while Kickham (2¾ Douglas) got away in excellent style. Edmond's diminutive Humber both in this and the next handicap race performed marvellously well. The order at the end of the first lap was—Edmond, Slatter (Alcyon), Kickham, Walker (Rudge), Manners-Smith (Rudge), Martin (Martin), Dewar (Triumph), Elce (Rudge), Timson (Rudge), Mundy (Singer), South (Rudge), Taylor (Rudge), and Luce (Bat). Luce had his belt come adrift, and Whitlark (Rex), whose engine had seized just before the race, could not start owing to sooted plugs, due to over-oiling. Edmond won by about half a mile. Winning speed, 46 m.p.h. Results:

Rider and machine.	Bore and stroke.	c.c.	Start. m. s.
1. F. G. Edmond (1 Humber) ...	60 × 70 ...	198 ...	2 32
2. E. Kickham (2 Douglas) ...	61 × 60 ...	350 ...	1 6
3. W. H. Elce (1 Rudge)	85 × 88 ...	499 ...	0 20

The others finished in the following order: H. Martin (Martin), 268 c.c., 44s.; Vernon Taylor (Rudge), 499 c.c., 20s.; N. D. Slatter (Alcyon), 247 c.c., 1m. 44s.; W. D. South (Rudge), 499 c.c., 32s.; S. Timson (Rudge), 499 c.c., 32s.; W. Dewar (Triumph), 499 c.c., 32s.; J. A. Manners-Smith (Rudge), 499 c.c., 44s.; A. G. Walker (Rudge), 499 c.c., 32s.; and R. G. Mundy (Singer), 294 c.c., 56s.

Stanley, who broke an inlet valve, is now probably of the opinion that the number 13 which he bore is an unlucky one.

Eighth Long Handicap.

The next motor cycle event was the Eighth Long Motor Cycle Handicap. Distance, about 8½ miles; fork start. Prizes as in the preceding event. Whitlark's belt came off just after he had pushed off, and Mundy failed to start owing to plug trouble. The first lap order was—Edmond, Slatter, Kickham, Martin, Manners-Smith (Triumph), Fowler (Rudge), Timson, South, Dewar, Elce, Taylor, and Stanley. The second lap order was—Edmond, Slatter, Kickham, Elce, Manners-Smith, Timson, Stanley, Fowler, Dewar, and Taylor. Edmond again won easily by about a kilometre. His speed was 48 m.p.h., which is a wonderful performance for so small an engine. Result

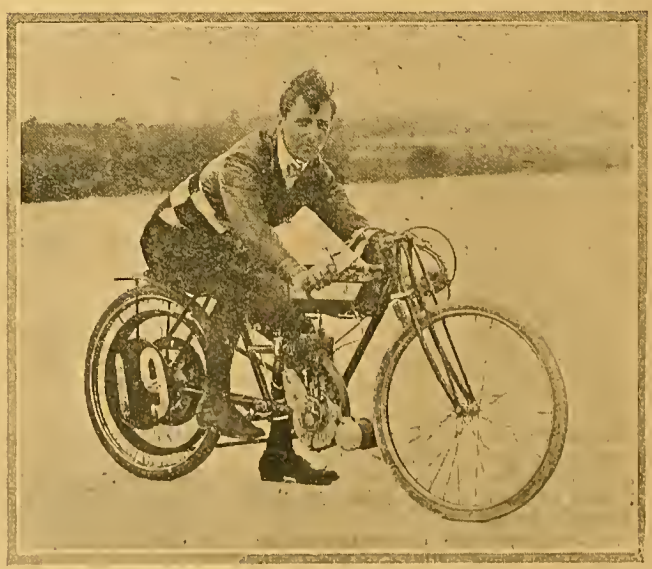
Rider and machine.	Bore and stroke.	c.c.	Start. m. s.
1. F. G. Edmond (1 Humber) ...	60 × 70 ...	198 ...	4 0
2. G. E. Stanley (1 Singer) ...	85 × 88 ...	499 ...	0 39
3. E. Kickham (2 Douglas) ...	61 × 60 ...	351 ...	2 15

The positions of the others were: N. D. Slatter (Alcyon), 247 c.c., handicap 3m. 12s.; S. Timson (Rudge), 499 c.c., 1m. 24s.; W. Dewar (Triumph), 499 c.c., 1m. 24s.; V. Taylor (Rudge), 499 c.c., 1m. 6s.; W. G. Fowler (Rudge), 499 c.c., 1m. 42s.

An Innovation—One Design Races.

The one design sprint races were an excellent innovation, the idea, it is said, of Mr. F. P. Armstrong, whose experience in yacht racing doubtless prompted him to urge the adoption of a similar series of races for motor cycles. Mr. Armstrong is a prominent member of the Royal Motor Yacht Club, and a steward and a member of the B.A.R.C. committee.

The event was divided into three races—Race A for 2½ h.p. Singers, 69 × 80 mm.; Race B for 3½ h.p. Rudges, 85 × 88 mm.; Race C for twin Zeniths with sidecars, engines not exceeding 1,000 c.c. In Race A, O'Donovan and Petty were riding the machines they will use in the Junior T.T. race.



F. G. Edmond (2 h.p. Humber), winner of the Ninth Short and Eighth Long Motor Cycle Handicaps at Brooklands last Saturday. He averaged no less than 48 m.p.h.

The B.A.R.C. June Meeting.—

The distance of these sprint handicaps was about two miles, extending from the starting point adjacent to the railway and finishing at the long finishing line opposite the paddock.

Race A (the Singer handicap) was won by two lengths, and provided quite an exciting finish. Results :

	Handicap.		Handicap.
1. W. A. Jacobs ...	28s.	4. G. E. Stanley ...	scr.
2. J. P. le Grand ...	28s.	5. H. Petty ...	28s.
3. R. G. Mundy ...	28s.	6. D. R. O'Donovan	28s.

The winner's speed was 48 m.p.h. During the race the adjustable pulley locking nut became loose, and so, we are informed, the gear ratio worked itself up to 3½ to 1.

The Rudge race was won by about ten lengths. Winner's speed, 55 m.p.h. Result :

	Handicap.		Handicap.
1. A. G. Walker ...	14s.	11. W. D. South ...	6s.
2. M. G. Flemming	28s.	12. S. Timson ...	14s.
3. A. A. Woodington	22s.	13. W. H. Edwards	28s.
4. B. C. Remington	18s.	14. E. Heis ...	18s.
5. C. Pressland ...	22s.	15. V. Taylor ...	6s.
6. S. R. Cooke ...	18s.	16. V. Leggatt ...	22s.
7. C. Pattison ...	18s.	17. Basil Collier ...	18s.
8. W. Gordon Fowler	14s.	18. C. Janicker ...	10s.
9. F. G. Picken ...	24s.	19. R. T. Wood ...	18s.
10. H. C. Vine ...	18s.	20. H. W. Farmer ...	28s.

The Twin Zenith Sidecar Race was the first sidecar event at a B.A.R.C. meeting and was quite interesting. Charlesworth, whose speed was 47¼ miles an hour, won easily, and about a length separated the second and third. Result :

	Hcp. c.c.	Hcp. s.		Hcp. c.c.	Hcp. s.
1. R. Charlesworth	771	55	8. H. H. Huckle...	771	55
2. W. Moore ...	771	60	9. W. G. Bower...	771	50
3. H. Luxford ...	771	60	10. W. J. Marshall	771	60
4. E. B. Ware ...	494	65	11. F. W. Barnes	990	scr.
5. L. P. Openshaw	964	37	12. G. F. Hunter...	990	5
6. P. Weatherilt...	744	35	13. A. J. Luce ...	771	55
7. H. Jepson ...	771	45	14. M. L. Ainslie...	771	50

Barnes and Hunter had an exciting struggle at the finish. Ware rode his T.T. Zenith. F. R. Tillman gave up owing to a broken carburetter control wire. We have previously advocated "one design" races in *The Motor Cycle*, and trust the idea will be further developed. To render a "one design" race a success every machine should be identical as regards equipment even to the most minute detail.

A KNOTTY PROBLEM.

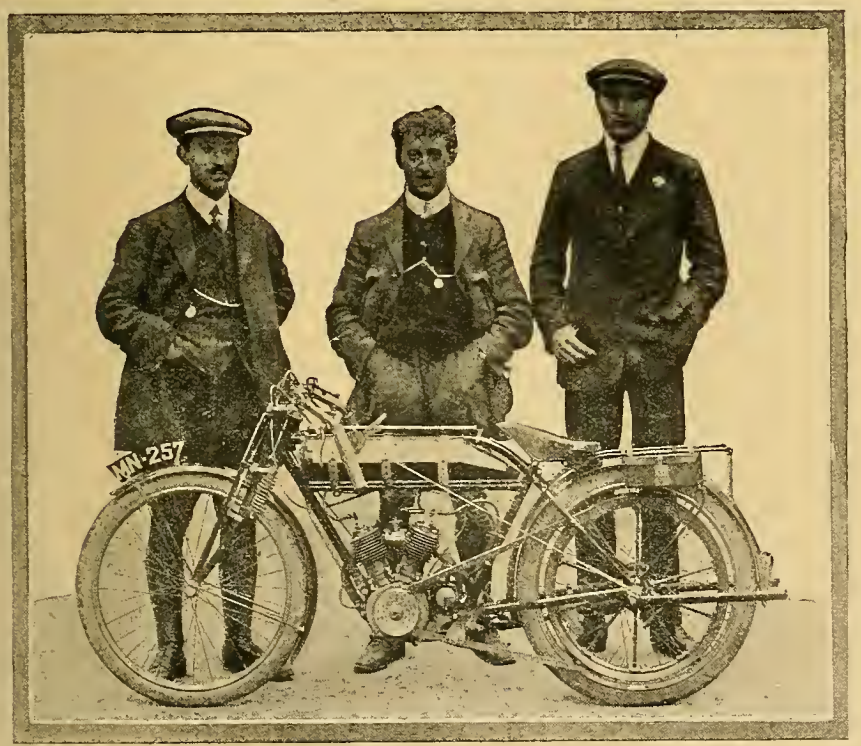
In response to the paragraph in our issue of May 30th asking readers who felt capable of tackling a difficult problem in connection with a Catford rider's motor bicycle to communicate with the owner, quite a number of replies have been received for "Perplexed."

DUBLIN AND DISTRICT M.C.C. ALL-DAY OPEN TRIAL.

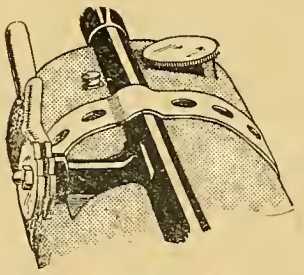
The Dublin and District Motor Cycle Club held a twenty-four hours' reliability trial on the 14th and 15th inst., over a course of 420 miles, with the usual regulations. The weather was very disagreeable for the greater portion of the time, and consequently the trial proved a particularly strenuous one. The start took place at 6 p.m. from Dublin, when the following were despatched at one minute intervals, there being but one absentee from the sixteen entrants : W. F. Parker (3½ Humber, 2-speed), J. Browne (3½ New Hudson, 3-speed), J. Doleman (3½ Triumph), J. H. Taylor (3½ Rudge), T. Woods (3½ Bradbury, 3-speed), C. E. Murphy (3½ Triumph), J. L. Walshe (6 Enfield sc.), T. E. Greene (3½ Rudge), Hugh Gibson (3½ Bradbury sc.), T. J. Dunphy (7 Indian), J. Healy (3½ Rudge), G. Roche (3½ Rover), O. G. Price (3½ Rudge, free engine), C. P. Kirk (3½ T.T. Triumph), and C. Magennis (3½ Rudge, free engine).

Rough Weather Throughout.

The journey to Belfast and Derry through the night was a very severe test, as much rain was experienced in the north; but the real trial came in Donegal, where it rained in torrents for several successive hours. Indeed, the riders did not get out of the rain belt until Cavan was reached on Saturday afternoon on the return journey. The ascent of Glengesh on Saturday was the deciding part of the ride. This hill is generally regarded as the worst in Ireland. It has a gradient of 1 in 7, but its worst features are its hairpin bends.



A TRIO OF JUNIOR T.T. COMPETITORS. P. J. Evans (present holder of the Junior Tourist Trophy), Douglas Brown and J. T. Basball, who will all ride 2¾ h.p. twin Humbers in next week's Isle of Man race



Front end of the 2¾ h.p. T.T. Humber torpedo tank, showing change-speed lever fixing.

There was a scale of penalties for failure, based on horse-power and gear ratio. The only riders to make clean ascents were Greene (Rudge), Roche (Rover), and Healy (Rudge). All these were on single-geared machines, the Rover being geared 6½ to 1, and the two Rudges 6¼ to 1.

Taylor, Woods, Murphy, Greene, Gibson, Healy, Roche, and Kirk completed the journey to schedule time.

CUB NEWS



Manchester Wednesday M. and C.C.

The first hill-climb of the season was held at Heydon Bridge, near Woodhead, on the 12th inst. Results: 1, J. Smith (T.T. Triumph); 2, J. Ives (Triumph).

Belfast and District M.C.

The annual reliability run for the Jaffe Cup was held on the 8th inst. from Belfast to Enniskillen (200 miles). Results: 1, Wm. Kearney (3½ Rudge with sidecar and passenger), lost two marks; 2, Tom Mallon (3½ Premier), lost three marks; 3, James McBride (3½ Premier), lost four marks.

Pontefract M.C.

The annual hill-climb was run off on the 13th inst. at Castle Syke Hill, near Ackworth. The members' class was run off first, but the times were not recorded owing to the electrical timing not working. The knock-out class provided good sport and ended in a tie, the brothers Finn, riding the same machine (6 h.p. Enfield), being in the final. An attempt was made to run the members' class later on in the afternoon, but shortly after the start an accident occurred which unfortunately ended the day's sport.

Motor Cycle Union of Ireland (Ulster Centre).

A further series of open speed trials were held at Magilligan Strand on Saturday afternoon. There was a very good entry, and keen contests were the order of the day. The results were:

FOUR MILES SCRATCH (for machines not exceeding 600 c.c.).

		M.	S.
1.	F. W. Adams (3½ B.S.A. T.T.)	4	11
2.	W. J. Chambers (3½ B.S.A. T.T.) ...	4	22
3.	J. Stewart (3½ Triumph T.T.)	4	28

TEN MILES HANDICAP.

		Hcp. S.	Nett time. M.	S.
1.	J. Lavery (3½ Ariel)	54 ...	12	48
2.	C. Pyper (3½ Zenith-Gradua) ...	scr. ...	13	34
3.	B. D. Capper (3½ Triumph T.T.)	24 ...	13	39

FIFTY MILES HANDICAP.

1.	B. D. Capper (3½ Triumph T.T.)	7 ...	62	18
2.	J. R. Thompson (3½ B.S.A. T.T.)	6 ...	62	21
3.	J. Lavery (3½ Ariel T.T.) ...	9½ ...	65.55	

Wigan M.C.

The following are the results of the Wigan M.C. 200 miles reliability run to Coventry and back on Wednesday, the 12th inst: First, J. Baker (3¾ Scott), 1½m. error; second, E. Sankey (3½ Triumph), 2m. error; third, R. King (7 Indian), 4m. error. Time schedule four and a half hours each journey, including half-hour control stop at Stone.

Scarborough M.C.

The Scarborough Motor Club held their annual gymkhana on the 15th inst. on the new Marine Drive, Scarborough. The weather being fine, the event was a great success. The following were the results:

Event 1.—Slow Race: 1, Dan Bradbury; 2, H. Frain; 3, J. Tranmer.

Needle-threading Race.—1, Bringham; 2, J. W. F. Tranmer; 3, S. Clay.

Lifebelt Race.—1, Vernon Gash; 2, S. Clay; 3, J. Tranmer.

Bomb Race.—1, Atkinson; 2, S. Clay.

Academy Stakes (Drawing Race).—1, Dan Bradbury; 2, H. Frain; 3, J. Dent. This event proved most amusing.

Blackpool and Fylde M.C.C.

A petrol consumption trial was held over a course from Blackpool to Ingleton, a distance of forty-five miles. The results, which were worked out on formula, were as follows:

	Rider and machine.	Miles per gal.	Fig. of merit.
1.	C. C. Humber (2¾ Douglas) ...	200	812
2.	F. Naylor (7-9 Indian and sidecar)	85.20	603
3.	T. Bull (8 Matchless and sidecar) ...	83.72	555

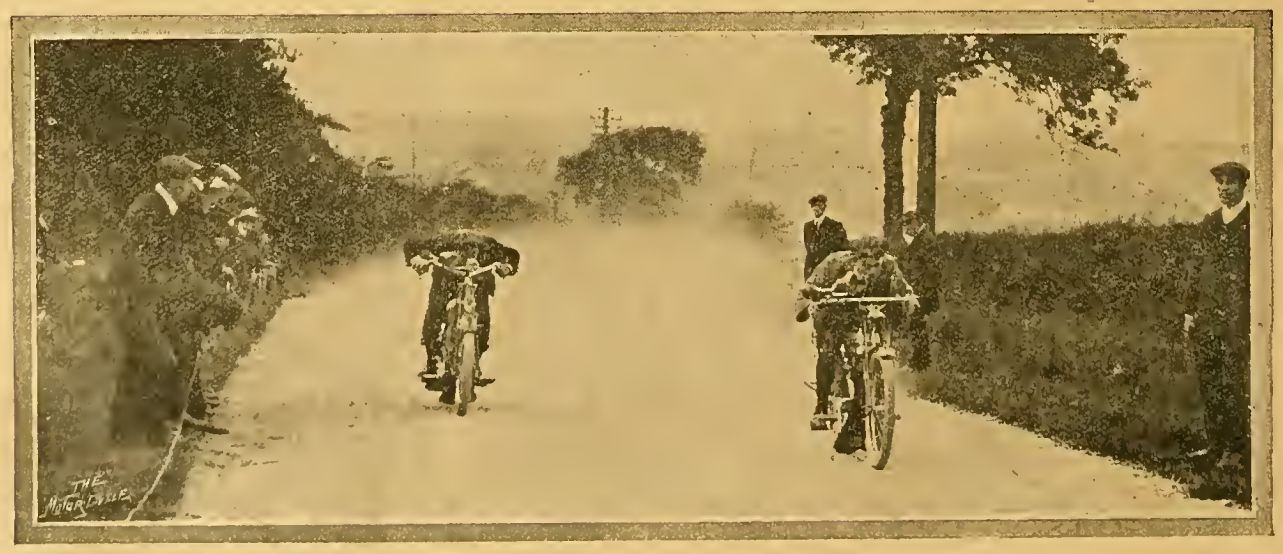
Westmorland M.C.C.

A reliability run held on the 2nd inst. to Chester and back for the Lonsdale Challenge Cup resulted in five competitors finishing equal. The results of the ensuing re-run were: 1, L. Pierce (N.S.U); 2, L. Pennington (Scott); 3, W. Hutchinson (Zenith).

The following were the results of the hill-climb held up Orton Scar for the President's prizes on June 15th:

Single-cylinder.—1, G. W. Braithwaite (Zenith); 2, B. Jefferys (Triumph); 3, L. Pierce (Corah).

Twin-cylinder.—1, L. S. Parker (Scott); 2, R. Shaw (Scott); 3, A. J. Moffat (Zenith).



Final of the Pontefract M.C. hill-climb. A Triumph and Enfield rider at full speed. The latter afterwards ran off the course.

Club News.—



Some of the competitors in the Wigan M.C. 200 miles reliability trial at the turning point—Coventry.

Putney and District M.C.C.

A hill-climb will be held on the 22nd inst. Members will meet at the Green Man, Putney Heath, at 2.15.

Stockport and District M.C.C.

The first reliability run is to be held on the 23rd inst. A hill-climb took place on the 19th ult. The fastest time of the day was made by H. Marsden (7 Matchless). Results :

CLASS I.

Rider and machine.	Formula.	Time.
		M. S.
1. E. Woods (2¼ Levis)	120.6 ...	2 33⅘
2. R. Rivett (2¾ Enfield) ...	149.9 ...	2 6⅘
CLASS II.		
1. H. J. Scale (3½ Triumph) ...	131.1 ...	1 35⅖
2. E. Abram (3½ Matchless) ...	155.1 ...	1 46
CLASS III.		
1. H. Marsden (7 Matchless) ...	181.2 ...	1 17⅖
2. F. Sirett (7 Indian)	196.9 ...	1 18⅖
3. J. McCann (7 Indian)	198.3 ...	1 22⅖
CLASS IV.		
1. Joe Woodrow (6 Chater-Lea)...	151.3 ...	2 29⅕
2. H. Greenhalgh (8 Matchless)...	160.4 ...	2 1⅕

Wansbeck M.C.C.

There was a large assembly of motorists at Morpeth on the 9th inst. for the annual reliability trial to Penrith and back.

Result : 1, W. Cookson, error 72s. ; 2, L. W. Hall, error 77s. ; 3, J. Main, error 85s.

South Birmingham M.C.C.

A reliability trial will be held on the 22nd inst. The start will be from the Horse Shoes, Hall Green, at 2.30 p.m., and the route *viâ* Stratford-on-Avon, Sunrising Hill, Kineton, Wellesbourne Hastings (tea), returning in the opposite direction up Edge Hill. The two test hills will be observed.

Purley and District M.C.C.

The night trial on the 8th inst. to Battle and back (111 miles) was won by S. J. Tayler (2½ A.J.S.), V. Tomkins (Rover) being second, and E. M. Oliver (Triumph) third.

There were seventeen entries and fifteen starters. Thick, white fog and greasy roads characterised the outward journey, but the conditions on the return were very pleasant.

Rotherham and District M.C.C.

A most successful hill-climb was held at Ulley on the evening of the 7th inst. The hill was of a winding nature with a stiff gradient, and one-third of a mile long. Results :

SINGLES.—E. Cross (3½ Bradbury), 33⅕s. ; L. Shepherd (3½ Triumph), 35⅖s. ; J. Baker (3½ Rudge), 35⅗s. ; — Watson (3½ Premier), 35⅗s.

TWINS.—H. Redge Garnet (6 Matchless), 30⅘s. ; G. Randeson (6 Matchless), 36s. ; M. Newbould (6 Rex), 39s.

PASSENGER MACHINES.—Dr. W. Land Debb (6 Rex sc.), 49s. ; E. Cross (6 Matchless sc.), 50⅗s. ; Dr. McDonald (8 Bat sc.), 57⅖s.

Wishaw and District M. and M.C.C.

In connection with the reliability trial, Mr. W. H. Cox, of the Automobile Association, has now made his awards as follows : 1, George Brown (3½ Triumph), marks lost 11 ; 2, John Adams (3½ Zenith), 20 ; 3, Walter Marshall (3 Clarendon), 27.

Middlesbrough and District M.C.C.

Notwithstanding the unfavourable weather there was a good muster on Wednesday evening, the 5th inst., for the reliability trial promoted by the Middlesbrough and District M.C.C. Eight sidecars and four solo machines competed on a circular course of about 22½ miles, which had to be traversed twice at a speed of 20 m.p.h. The result was as follows : 1, Challons (3½ Premier), lost 5 marks ; 2, Armstrong (3½ James and sc.), lost 7½ marks ; 3, Sproates (3½ Triumph and sc.), lost 10½ marks.

Cumberland County M.C.C.

A knock-out hill-climb was held on Fang's Brow, Loweswater, on the 8th inst. The semi-finals were as under :

Main (6 T.T. Rex) beat Barron (3½ T.T. Singer), Hilton Robinson (3½ T.T. B.S.A.) beat Beck (3½ T. T. Triumph). Final : Main beat Robinson. Robinson was leading by twenty yards, but when thirty yards from the finish his engine stopped firing for no apparent reason.

A slow climb was got up on the spot with the following result : Brownrigg (6 Zenith) beat Beck (T.T. Triumph), W. B. Robinson (3½ B.S.A. two-speed) beat Iredale (3¾ Scott). Final : Robinson beat Brownrigg.

Haverstock M.C.C.

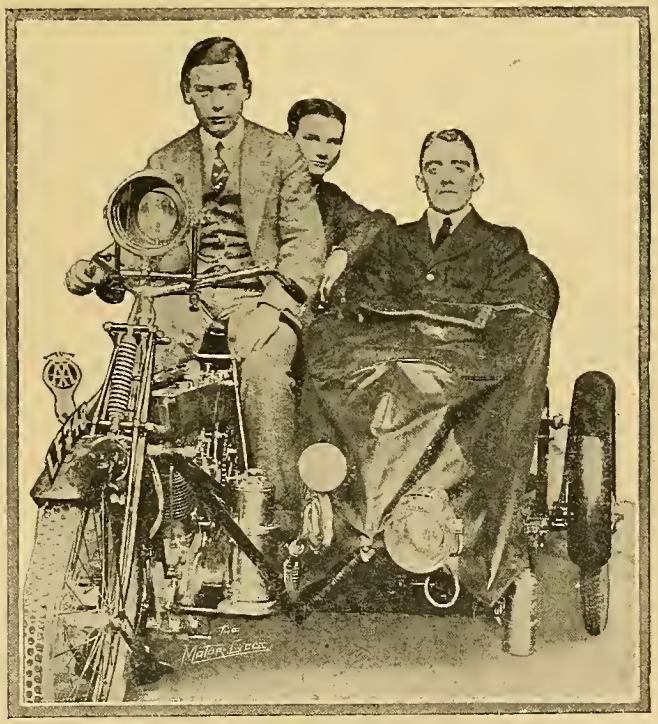
A hundred miles reliability trial was held on the 9th inst., and the following received awards :

Gold Medals : W. Bishop (2½ Brown), full marks 100 ; A. Lunnon (2½ Brown), 100 ; H. Moliver (3½ Rudge Multi), 100.

Silver Medals : W. Brown (3½ Zenith and sc.), 87 marks ; D. Ackland (3½ Rudge Multi and sc.), 83.

There will be another competition on the 7th July, round a course of about fifty miles.

The course will be kept secret until the morning of the trial, and each competitor will have to keep to a schedule speed. Full particulars can be obtained of the hon. secretary, Mr. H. Moliver, 81, Prince of Wales Road, N.W.



A HEAVY LOAD.

The photograph reproduced above shows how F. E. Pither journeyed from Edinburgh to London on a 6 h.p. Enfield sidecar combination. He believes that this is the longest distance covered in the manner illustrated.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Cardiff to Harrogate.

Will you please give me the best route for motor cycle and sidecar from Cardiff to Harrogate (avoiding towns as much as possible) and the distance?—J.P.

Your best route would be as follows: Cardiff, Newport, Chepstow, Gloucester, Tewkesbury, Evesham, Stratford-on-Avon, Warwick, Coventry, Loughborough, Nottingham (turning right at Trent Bridge), Newark, Tuxford, Retford, Doncaster, Ferrybridge, Aherford, Wetherby, Spofforth, to Harrogate. This is rather a long way round, but it misses all the big towns. The distance is approximately 270 miles.

A Stiff Engine.

My machine is in first-class condition in every respect, but the engine is so stiff that I cannot revolve the pedals on the stand, and have to run with machine 100 yards at least before engine will fire. Now it is not due to want of lubrication or over-lubrication, as it has been thoroughly washed out with paraffin, and, though starting easier, the next day it was as stiff as ever.—NOVICE.

The matter is one which should be looked into carefully. Either it is due to too thick an oil being used, to a tight bearing, to the piston being too tight in the cylinder, or to the valve lifter not releasing compression. We should be inclined to think that the first is the fault.

Wanted, Slow Speeds.

I have invested in a 5-6 h.p. twin Rex motor cycle converted from an accumulator to a magneto and B. and B. carburetter (No. 32 jet), gear 4½ to 1. It is a grand goer at 15 m.p.h. or over, but it does not fire at all evenly at a lower speed which makes it extremely awkward on bad roads and through traffic. How would you advise me to rectify this fault? Would a smaller jet make it slower, if so, what size jet do you recomend?—J.W.M.

The trouble may be (1) that the automatic inlet valves have too strong springs, but if you weaken them you will lose somewhat in efficiency at high speeds, (2) that the carburetter does not give sufficiently strong a mixture at slow speeds, or (3) that the ignition is too far advanced. All machines with automatic inlet valves are difficult to control at low speeds. You might try a No. 28 jet.

Variable Compression.

(1.) Would a variable compression device take the place of a change speed gear? (2.) Does a lower compression enable a machine to climb a hill which a high compression engine would refuse? Or does the lower gear allowable on a lower compression motor account for this?—A.K. (Chicago).

(1.) A variable compression device would not give the same advantages as a change speed gear. (2.) A low compression is of some assistance to hill-climbing. It enables the engine to climb longer without knocking, and as you say, it admits of a lower gear without overheating. In other words, no matter what gear ratio is used, a low compression engine will run further without overheating than a high compression engine. It cannot, however, by any means take the place of a change speed gear.

Excessive Consumption.

A short time ago I purchased a second-hand motor cycle fitted with a 3 h.p. a.o.i.v. engine. The ignition is by coil (plain) and battery. Gear, 6½ to 1. I soon found out that I could not get more than 30 m.p.g., and thinking that the carburetter was at fault had a Senspray fitted. There was no improvement. The engine takes very little air, and if I push the air lever further away than the gas lever misfiring results. The battery (Hellesen) registers 4.25 by voltmeter. It has occurred to me that the fault may be with the coil, but I am quite at a loss to prove this. There is no leak of petrol when the machine is on the stand nor, as far as I am aware, when travelling. The inlet valve has an opening of ⅛in., and the spring is fairly weak for easy starting. Is there any means of testing the coil? What strength of spring is suitable for the engine (inlet valve)? I am having an adjustable pulley fitted, and this ought to enable me to get about 45 m.p.g. I have no fault to find with the machine other than the excessive petrol consumption. Any suggestions to put me on the right track would be appreciated by "TROUBLED."

It is difficult to say for what reason the engine is so extravagant, unless there is a leak in the petrol tank or petrol pipe union. We should not say that the extravagance is due to the coil. You can get the coil tested by any manufacturer of electrical appliances. In gauging the capacity of dry batteries you must not go by the voltage, but by the ampèrage. The inlet valve spring, if sufficiently strong, ought not to open freely when the valve is shaken violently by the hand. With the 3 h.p. machine you should get between 90 and 100 miles to the gallon.

Woking to Brenzett, Dungeness.

I should be much obliged if you would inform me: (1.) The best and shortest route from Woking to Brenzett, near Romney, Dungeness? (2.) The total distance? (3.) Are there any bad hills? —R.A.B.

Your best route would be as follows: Woking, Ripley, Ockham, Effingham, Dorking, Reigate, Redhill, Oxted, Westerham, Crockham Hill, Tonbridge, Goudhurst, Cranbrook, Tenterden, Appledore, to Brenzett. The distance is approximately seventy-six miles. There are numerous steep hills between Effingham and Dorking, and Dorking and Westerham, and at Crockham Hill, but nothing which should worry a modern motor bicycle.

Magneto.

I have bought a second-hand 2¾ h.p. motor cycle with Bosch DA I magneto. I have tried several plugs, but only get a very small spark when I revolve the back wheel round at a fair rate. I should like to know the principle on which magnetos work. Could you recommend any books on the subject? How far should the contact screws separate? Would I get any better results if I connected a wire from the drain plug screw in the crank case to the base of the magneto?—J.C.

The principle of the magneto machine is too large a subject to explain by letter, and we would advise you to get a copy of "Motor Cycles and How to Manage Them," which explains all details. Speaking broadly, the current is induced by rapidly cutting the lines of force in a magnetic field. The contact points should be flat and clean (the makers supply a gauge to test the gap) and separate by about ½ mm. With the type of magneto you speak of the hottest spark occurs in the fully advanced position of the contact breaker. There is no necessity to fit a wire such as you describe; the magneto machine is a self-contained piece of mechanism which does not require any separate earth connection.

Kettering to Petersfield.

Could you kindly advise me the best route from Kettering to Petersfield (in Hampshire), avoiding London, and, if possible, the suburbs; also about what distance it would be? My machine is a 3½ Zenith-Gradua.—J.H.G.

We should advise you to go from Kettering to Petersfield *viâ* Wellingborough, Olney, Newport Pagnell, Woburn, then make for the main Birmingham to London Road, continuing along that as far as Dunstable, then turn to the right for Tring, over the Chilterns to Amersham, Beaconsfield, Slough, Windsor, then either *viâ* Ascot or Egham on to the London-Basingstoke Road—the latter is the better road and the easier to find. If you go by Egham, at that town you will have to turn back on your tracks and follow the London-Basingstoke Road as far as Bagshot, go straight on up the hill and keep to the left at the Jolly Farmer, through Frimley to Aldershot, Farnham, and Petersfield. The distance would be approximately 110 miles.

Extra Air Inlets.

(1.) What would be the correct size jet to use on a 1912 Amac lightweight carburetter, my machine being a 1911 2¾ two-speed Enfield? I have five jets, Nos. 24, 25, 26, 27, and 28. Also, which of these is largest and which smallest? (2.) As I find that the machine, when going on about quarter throttle, will take all the air the carburetter will allow of, I am afraid that in case I was driving on three-quarter throttle, or climbing hills, it would take more air if it could be given, and also keep the engine cooler. Would the gauze fitted to the Amac have the effect of lessening the air, and would it be advisable to take it off? Also, are the extra air inlets fitted to induction pipes useful in cases like mine, and for cooling purposes? (3.) Are the chemicals you see advertised for removing carbon deposit on cylinder and piston without removing cylinder satisfactory?—J.W.

(1.) We should advise the use of the smallest jet, No. 24. (2.) When once under way this carburetter can be used practically automatically with the air wide open, except when slowing for corners. Of course the gauze retards the air to some extent, especially if clogged. It is important to keep it quite clean, but we should not remove it unless absolutely necessary. An extra air inlet would be of service, if you are not getting enough air. (3.) We have had no actual experience of the chemical decarbonisers. The Cyclean process is excellent.

Connecting Rod Touching Flywheels.

I have been troubled lately by a kind of knocking in my 3½ h.p. 1908 single-cylinder, and have found that the connecting rod is marked up the sides and has evidently been fouling the flywheels. The marks are on the rear of the rod to the valve side and on the front of the rod to the pulley side. I had new bushes, crank-pin, and gudgeon-pin fitted not long ago, and there is no wear on them, though the connecting rod has a little side swing and the piston has side play, but of course some such play is necessary. The ball bearings on main shaft have no play either up and down or endwise. The knocking noise was absent until some time after the new bearings had been fitted; it started almost imperceptibly, and has gradually got worse; it occurs most when accelerating on the level or when climbing any hill, however easy; in fact, it is caused when there is any increase in the explosion pressure on the piston. It is most certainly caused by the connecting rod, and is not merely the result of pre-ignition. I shall be much obliged if you will tell me: (1.) Any possible reasons for the connecting rod hitting the flywheels. (2.) Can the connecting rod have become warped? If it were bent, would there not be wear only on one side? (3.) Do you think a new rod would improve matters? I have found that there is slightly more distance between the flywheels at one point than another, but this difference is almost imperceptible. Would this be sufficient to cause the trouble?—D.C.W.

(1.) Some possible reasons for your connecting rod fouling the flywheels are: (*a*) Connecting rod may be bent; (*b*) crank pin may have been put in on the cross; (*c*) piston may have got turned round slightly in the cylinder, and owing to expansion under heat the cylinder may not be quite round when the engine is working, and thus the piston may be held with the gudgeon pin slightly on the cross. (2.) The connecting rod might quite possibly become bent by such an occurrence as a backfire, for instance, when running at some speed. (3.) If the connecting rod is bent or does not lie at right-angles to its bearings, a new rod ought to improve matters, but the fact that you have found slightly more distance between the flywheels at one point than another makes it rather appear that the crank pin has not been put into the flywheels dead true, for with a small clearance between connecting rod and flywheels this might be quite sufficient to give trouble.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

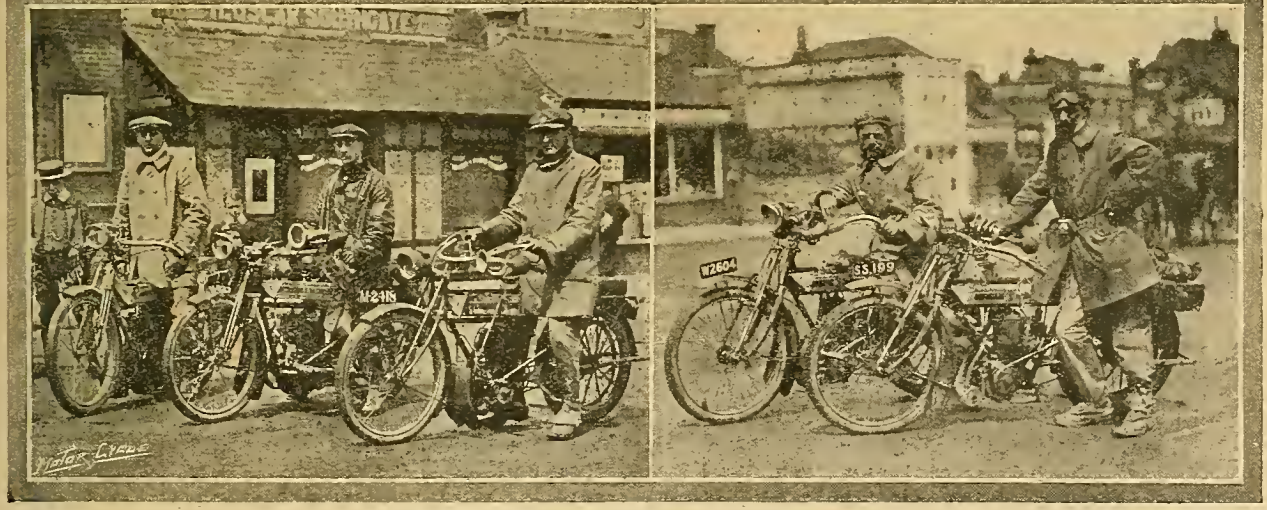
"J.S." (Keighley).—5-6 h.p. T.M.C.

"B.L.K." (Old Trafford).—5-6 h.p. F.N. for solo work. Average tyre mileage.

"G.H.B." (Easingwold).—3½ h.p. 1911 Humber. 5-6 h.p. 1911 F.N. for sidecar work, reliability, and economy.

"W.L." (Gateshead).—1912 2½ h.p. A.J.S. two-speed, particularly as regards hill-climbing, reliability, speed, and petro consumption.

"A.G." (Glasgow).—Bowden and N.S.U two-speed gears for twin and sidecar.

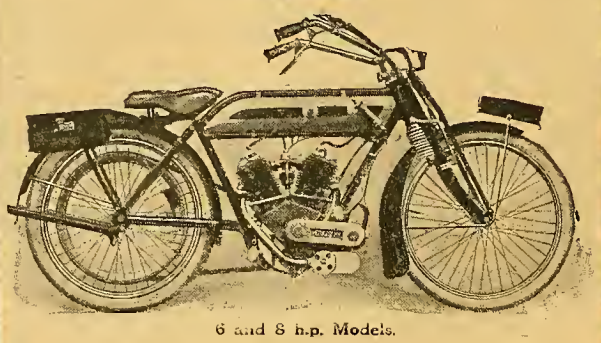


THE SECOND MOBILISATION TEST AT MAIDENHEAD.

(1) Getting ready to leave Maidenhead. A. Stubbs (3½ h.p. Dot), J. J. Darlow (3½ h.p. Rex), and C. R. Sprague (3½ h.p. Triumph), who came from Winsford, Chester (173 miles), and started at 4.45 a.m. (2) F. Dover and S. Sawer (3½ h.p. Premiers), who rode from Sheffield, arrived dead on time, and were awarded *The Motor Cycle* silver cigarette cases.

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The finest machine in the World for

Design, Workmanship, & Finish

OAKAMOOR HILL CLIMB.
1 DOT entered, awarded 2 Silver Cups.
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THE SEATLESS GAITER TROUSERS.

Fawn Drill Double Breasted Dust Jackets, 11/6.

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Price 6/6 per pair.

Leggings, 5/6 per pair.

Ditto Super Quality Double Breasted Jackets, 17/6.

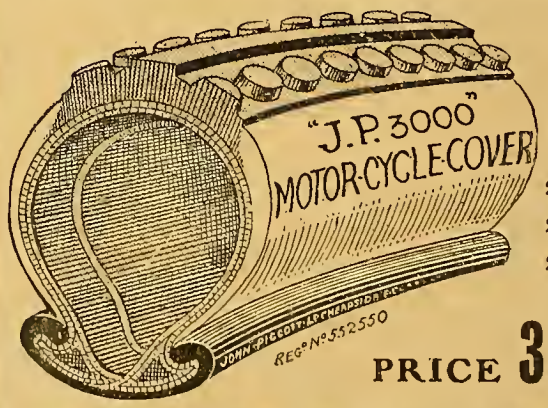
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Ditto Leggings, 7/6.

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Give size round chest on Jackets. Round waist and length of inside leg for Trousers.

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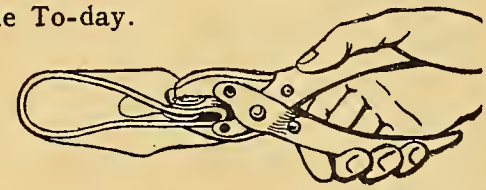
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In tuning up,

GAS TIGHTNESS

of valves is of first importance. The face and seating must be perfect. This applies as much for general riding as for competitions.

The writer of these notes recently discovered that our Cycle Lamp Oil is wonderful stuff for valve grinding. The improvement is most marked.

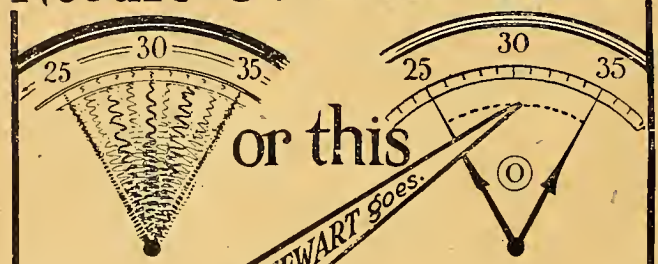
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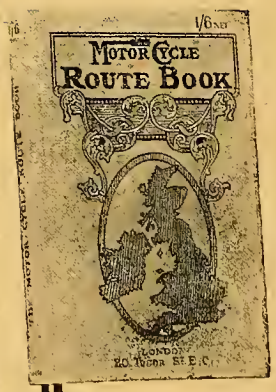
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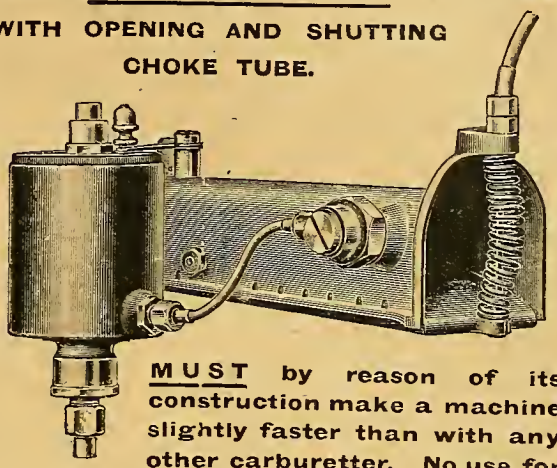
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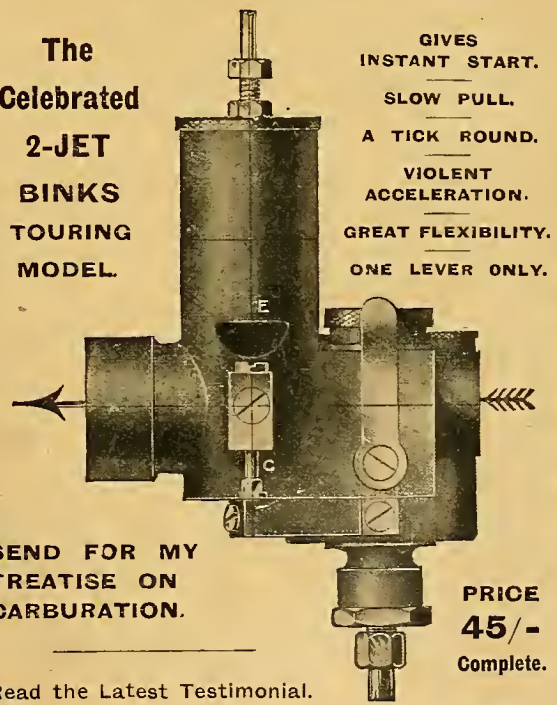


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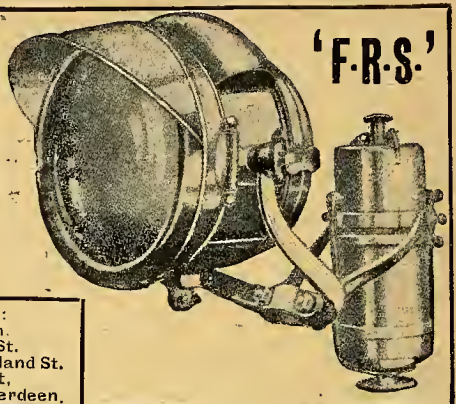
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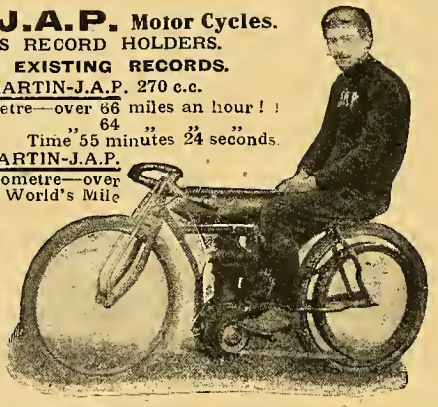
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Our stock of Second-hand Motor Cycles is fairly small to what it was, but we want it to be smaller. There are exactly fifty-three machines left at the time of writing. Now, you want one of our Lists of these fifty-three, so that you can have a packet. If we can't sell them at our price, we are prepared to try and sell them at your price, but sell them we must, and, what is more, sell them we will! If you cannot pay for one in full, you shall have one by paying a deposit, and clearing off the balance by instalments. If you are a CASH BUYER, we will be pleased to put you one in at the right price, and we desire your firm offer. Our place is being filled up with new machines, which are rolling in daily. At the present moment Morgans, A.C.'s, G.W.K.'s, or Turner Cars are either in or coming in. As you know, we have only a small place, and it is soon filled up; therefore let us have your cash or deferred terms for any machine that we are Agents for, and Remember, we are Agents for everything WORTH HAVING, such as Scotts, P. and M.'s, Bradbury, Zenith, Humber, Matchless, Bat-Jap, Douglas, Premier, Clyno, Morgan Runabouts, A.C. Tricars, Motosacoche, Lincoln Elk, etc., etc., etc. We have a great many more of these machines coming in than we can find room for at any time, and as we want to have as many here as possible, please help us to shift the second-hand machines out of the road, then we shall be able to place in their stead fifty new machines. In addition to the new machines we have coming in daily, we have machines standing at different stations in various parts of the country awaiting our order.

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As we were the leading firm in previous years in the Swapping Trade, so we intend to be the LEADING FIRM in the Deferred Payment Trade. Our motto is, "There's plenty of room at the top; the bottom is generally crowded, as now." You will find that we are ready for business when you are ready to place your orders. Our deals can be put through in a simpler manner than is the case with many other firms. Write at once and state the amount you can pay down; what class of machine you want—mention one or two if you have no particular fancy—and we will write or 'phone you immediately.

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If you are in the Trade, our Accessories and Second-hand Motor Cycle List, less trade discount, will fix you up cheaper than you can buy from anywhere else.

If you are in the Trade, and have customers for new machines, our commission is satisfactory. You can have machines by coming down here, or have them sent through. Remember, we buy all our things right, and are therefore in a position to sell them RIGHT. You know the old saw, "Money makes the mare to go." If a firm can't buy right for want of capital, how can they expect to sell right. We know many are short of the filthy lucre at the moment.

We shall be pleased at all times for our friends to call in and see us. By the by, we would casually remark that we have stated for the last three or four months that we are selling off, and we would respectfully draw the attention of the bhoys to the fact that "selling off" does not mean "giving things away." This Whitsuntide a great number have blown in, and from the offers they have made us, we certainly think they have misinterpreted our advertisements, as we can hardly consider £25 a satisfactory price for a 1911 free-engine Triumph, neither do we feel interested in the innocent's calling in and telling us that he will give us 1/6 for a pair of Wool-lined Gloves, which are exceptionally cheap at our cut price of 4/3½.

We get a great number of letters, some of them from the knuts. This sounds interesting, when, after reading through a four-paged letter, you find that the gentleman innocently asks whether we guarantee a Motor-Cycle and Sidecar to pass his pal, who is the Captain of the "Sloppy-by-the-Sea" Cycling Club; as, if so, he will give us £8 to £10 for the combination. You feel tempted to wire, offering him a prominent position on the Staff of Buyers, or give him a Bath free of charge from the Pier Head! Kind friends, please note we are not able to do these idiotic things any more than anyone else, but we can sell you a superior Motor Cycle at a price very much less than anyone else can, for the simple reason that we want to be out, as we want the room for something else. You now have it from us, and we look forward to seeing your postcard for a list.

We have close upon 200 pairs of tyres, which are brand new, and made specially for us by a first-class firm. We have been selling them at 15/11½, 19/11½, and 24/11½. To make a move on them, you can have them at 2/- per cover discount, and we make you an exceptionally good offer. If when you get the cover you do not think same worth the money, send it back at once, and we will refund the money in full. There is also a matter of 120 tubes, white and red ones. The former we have been selling at 4/11½ and the latter 8/11½. You can take 1/- off the white tubes and 2/- off the red ones. There is also a matter of fifty or sixty butt-ended tubes, which are our usual 13/11½ line. Whilst they last you can take a couple of shillings off these.

Hitchen's, Ltd., Morecambe.

MOTOR CYCLES BY EASY PAYMENTS

Whiteleys are prepared to supply ANY MAKE OF MOTOR CYCLE or CYCLE-CAR on the EASIEST OF EASY TERMS

Interest Charge from 2 per cent.

A TEN POUND NOTE

secures delivery, and you can pay the balance afterwards by twelve monthly instalments.

WHY WAIT 6 WEEKS WHEN WE HAVE IN STOCK

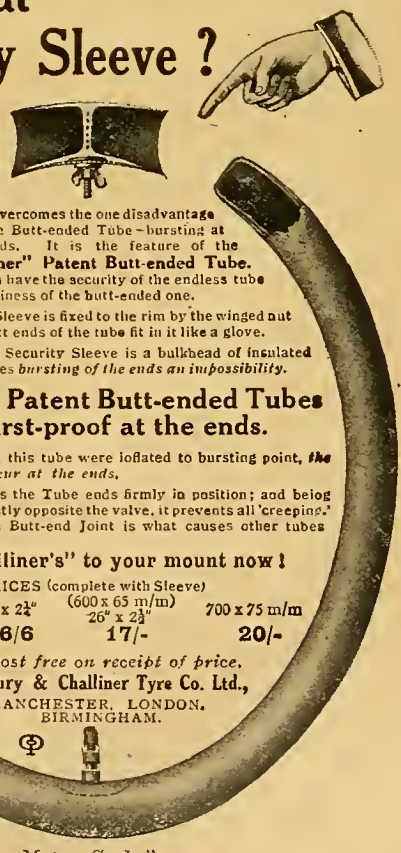
Premiers	Alcyons	Bats
Bradburys	New Hudsons	Zeniths
Triumphs	Calthorpes	Swifts
Indians	James	Clynos
Douglas	Singers	P. & M. s.
Rex-Japs	Rudges	Duo-Cars

Carriage Paid to any Station in the United Kingdom.

WHITELEYS

——QUEEN'S ROAD, LONDON, W.——

See that Security Sleeve?



It overcomes the one disadvantage of the Butt-ended Tube—bursting at the ends. It is the feature of the **"Challiner" Patent Butt-ended Tube.** With it you have the security of the endless tube and the handiness of the butt-ended one.

The Security Sleeve is fixed to the rim by the winged nut and bolt; the butt ends of the tube fit in it like a glove.

The centre of the Security Sleeve is a bulkhead of insulated canvas which makes *bursting of the ends an impossibility.*

'Challiner' Patent Butt-ended Tubes are burst-proof at the ends.

If a tyre fitted with this tube were inflated to bursting point, *the burst could not occur at the ends.*

The bulkhead keeps the Tube ends firmly in position; and being fixed to the rim directly opposite the valve, it prevents all 'creeping.' "Creeping" of the Butt-end Joint is what causes other tubes to burst.

Fit "Challiner's" to your mount now!

PRICES (complete with Sleeve)

26" x 2"	26" x 2¼"	(600 x 65 m/m) 26" x 2½"	700 x 75 m/m
15/-	16/6	17/-	20/-

Sent post free on receipt of price.

Shrewsbury & Challiner Tyre Co. Ltd.,
MANCHESTER, LONDON, BIRMINGHAM.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII.
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION IX.
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

DIFFICULTIES DISAPPEAR.

No difficulties of choice, for we can show you every make; no difficulties of delivery, for we hold the largest stock in the kingdom; and no difficulty in use, for we sell machines fitted with every up-to-date improvement, by which all difficulties disappear



IF YOU BUY AT

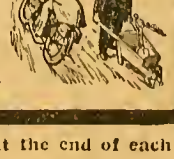
WAUCHOPE'S

OUR TO-DAY'S BARGAIN LIST INCLUDES

5424.	3½ h.p. 1912 free engine	**BRADBURY**	£45	0
5540.	8 h.p. 1911 2-speed	**MATCHLESS** and sidecar	£65	0
5588.	2¾ h.p. 1911 2-speed	**DOUGLAS,** Model E	£36	10
5569.	3½ h.p. 1910	**KERRY ABINGDON**	£32	10
5603.	5-6 h.p. 1911 4-cylinder	**F.N.**	£33	10
5606.	5-6 h.p. 1908 2-speed 4-cyl.	**F.N.**	£25	0
5609.	6 h.p. twin	**BUCHET** and sidecar	£27	10
5612.	3½ h.p. 1909 tourist	**REX**	£22	10
5613.	3½ h.p. 1908	**MATCHLESS-J.A.P.**	£18	0
5614.	2¾ h.p. 1912 Model K	**DOUGLAS**	£50	0
5615.	3½ h.p. 1912 2-speed	**HUMBER**	£48	0
5616.	7 h.p. 1909 2-sp.	**V.S.** and sidecar	£35	0
5617.	2¾ h.p. 1911 2-speed	**DOUGLAS,** Model D	£35	0
5618.	3½ h.p. 1911	**BAT-J.A.P.**	£33	10
5621.	2¾ h.p. 1912 3-speed	**HUMBER**	£48	0
5566.	3½ h.p. 1909	**TRIUMPH**	£31	0
5571.	2¾ h.p.	**HUMBER**	£15	0
5573.	3½ h.p. 1909	**TRIUMPH**	£30	0
5586.	3½ h.p. 1911 standard	**BAT**	£35	0
5587.	9 h.p. 1908	**BAT-J.A.P.**	£27	10
4260.	2½ h.p.	**BRADBURY**	£8	10
5158.	3½ h.p. 1908 2-speed	**N.S.U.** and sidecar	£25	0
5169.	5 h.p. 1908 twin	**G.B.**	£20	0
3331.	5 h.p. 1910 tourist	**REX**	£30	0
5504.	3½ h.p. 1910	**PREMIER,** Mabon free engine	£24	0
5506.	2¾ h.p. 1911 Twin	**CAMPION**	£27	10
5519.	3½ h.p. 1910 Standard	**TRIUMPH**	£33	0
5532.	6 h.p. 1912	**REX** Sidette	£60	0
5542.	3½ h.p.	**QUADRANT**	£17	10
5543.	3½ h.p. 1911 3-sp. Lady's	**HOBART**	£36	0
5547.	6 h.p. 1911	**ZENITH GRADUA** and sidecar	£63	0
5559.	3½ h.p. 1908	**TRIUMPH**	£29	0
5560.	2½ h.p. 1912 Standard	**PREMIER**	£30	0
5562.	2¾ h.p. 1909	**DOUGLAS,** Roc 2-sp.	£29	0
5036.	2½ h.p. 1911	**MOTOSACOCHE**	£27	0
5009.	3½ h.p. 1911 T.T.	**BRADBURY**	£32	0
5055.	3½ h.p. 1911	**L.M.C.,** variable gear	£35	0
5287.	2¾ h.p. 1911	**DOUGLAS**	£28	0
5006.	3½ h.p. 1910 T.T.	**TRIUMPH**	£34	0
5066.	3½ h.p. 1911	**BRADBURY,** Mabon cl.	£37	10
5332.	5-6 h.p. 1911 4-cyl.	**F.N.**	£33	10
5358.	2¾ h.p. 1912 2-speed	**ENFIELD**	£47	0
5441.	3½ h.p. 1911	**BRADBURY**	£35	0
5468.	3½ h.p. 1911	**BRADBURY**	£35	0
5327.	7 h.p. 1911 2-speed	**REX DE LUXE**	£45	0
5285.	2 h.p. 1910	**MOTO-REVE**	£20	0
4863.	3½ h.p. 1911	**CHATER-J.A.P.**	£32	0
5420.	2¾ h.p. 1911 2-speed	**ENFIELD**	£40	0
5460.	2½ h.p. 1910 2-speed	**F.N.**	£27	10
5471.	3½ h.p. 1911 F.B.	**BRADBURY**	£38	0
5293.	2¾ h.p. 1911	**ENFIELD**	£40	0
4865.	2½ h.p. 1911	**HANDY HOBART**	£25	0

LIST SENT FREE.

OVER 300 NEWEST 1912 MODELS AND SECOND-HAND MOTOR CYCLES ON SHOW. LOWEST PRICES FOR CASH OR USED MACHINES TAKEN IN PART PAYMENT OF NEW.



9, SHOE LANE, FLEET STREET,
LONDON, E.C.

'Phone: Holborn, 5777.
Wires: "Opificer, London."

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office When this is desired, 2d. will be charged for registration and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o. 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

SCOTT, April, 1912, as new, ride 50 to purchaser; makers' guarantee.—Motorist, Ormathwaite, Keswick. [X2160

2¾h.p. Enfield, new 1911, 2-speed, free, chain drive, lamp; cost 50 gns., lowest £30.—Dinsmore, 9, Argyll St., Sunderland. [X2151

DARLINGTON.—Cannot take delivery. £50/8 lady's Hobart, 2½h.p., 3-speed, sacrifice £42/10.—No. 773, *The Motor Cycle* Offices, Coventry. [X2778

CHATER-LEA-WELLER Motor Cycle, 2½h.p., low built, complete with spares; £8/10, or offers; photo.—Thompson, Keld Head, Stainton, Penrith. [X2750

SECTION II.

York and Lancashire.

HITCHINGS, Ltd.

HITCHINGS, Ltd., Liverpool.

HITCHINGS, Ltd., 74, Bold St., Liverpool.

HITCHINGS, Ltd., for twin Matchless, in stock.

HITCHINGS, Ltd., for 3-speed single Matchless, in stock.

HITCHINGS, Ltd., for Triumphs, clutch and standard, in stock.

HITCHINGS, Ltd., for Montgomery and Gloria sidecars.

HITCHINGS, Ltd., for guaranteed second-hand machines.

HITCHINGS, Ltd., for courtesy and dependability.

YOUR Enquiries are solicited by Hitchings, Ltd. Established 1880.—74, Bold St., Liverpool.

TRIUMPH, 1911, clutch model, complete, £43; and 1912 9 guinea Montgomery sidecar, £6, or together £48.—Hitchings, Ltd., 74, Bold St., Liverpool. [X2740

CARRS.—Rudge and B.S.A. free engine models, for exchange.—Knowsley St., Bury. [X2848

CARRS.—1911 2-speed Humber, excellent order, £36; 1911 Zenith, 3½h.p., £38; both exceptional bargains; exchanges entertained.

1912 A.C. Sociable, the Mighty Atom, delivery in a few days, secure it now.—Below.

CLYNOS.—For quick delivery and absolute satisfaction, try Potter, Leicester Grove, Leeds. Tel.: 4046. [X2935

1912 5h.p. T.T. Matchless, unscratched, too fast for owner; £56, offers.—Rudd, Yeadon, Leeds. [X2918

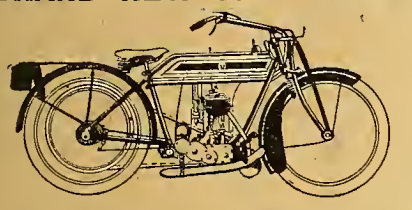
The Halifax Motor Exchange

Largest Rex Dealers,

16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams, "Perfection."

BRAND NEW 1911 REXES.



	Makers' price.	Ours.
3½ h.p. Rex Tourist	43 guineas	**34 guineas**
3½ h.p. Free-engine	48 guineas	**39 guineas**
3½ h.p. 2-speed De Luxe	57 guineas	**46 guineas**
5 h.p. 2-speed De Luxe	60 guineas	**51 guineas**

All new and guaranteed. Exchanges liberally dealt with.

SPECIAL.—Easy payments at 5% extra. Low deposits, twelve monthly payments.

£3 to £5 DOWN

and 5/- weekly secures prompt despatch of

2½ h.p. **J.A.P.,** Clement-Garrard frame	£8 10
Twin magneto **MOTO-REVE,** Druids	£15 0
3 h.p. **QUADRANT**	£10 10
2¾ h.p. **KERRY**	£10 10
2¾ h.p. **BAT,** spring frame	£10 10
3½ h.p. light, low **REX,** very smart	£12 10
2¾ h.p. **DE DION**	£10 10
2½ h.p. **J.A.P.,** spring frame, h.b. control	£9 10
2 h.p. **F.N.,** 26in. wheels, V. belt	£6 10
3½ h.p. **M.M.C.,** torpedo tank	£10 10

1912 DE LUXE SIDECAR

£6 6s.



"Exchange," with Continental motor cycle tyre	£5 5 0
"De Luxe," with best tyre, apron, footmat	£6 6 0
Ditto, with reversible child's seat	£7 0 0
Ditto, with best coach-built body	£7 12 6

Improved Quick Detachable Joints, cranked extra strong back axle and spindle, tip-up body, and caged ball races to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

Discount to trade. Exchanges entertained.

GUARANTEED IN RUNNING ORDER.

1912 **MULTI-RUDGE,** nearly new	£52 10
New 1912 3½ h.p. 3-speed **BRADBURY**	£58 0
New 1912 twin **REX** Sidette	£75 0
1911 3½ b.p. 2 speed **N.S.U.** and new sidecar	£39 10
New 1912 2-speed **REX** Junior. Liberal exchange	£45 0
1911 3½ h.p. tourist **REX,** done 100 miles	£32 10
SCOTT 2-speed. Aug., 1910	£37 10
1911 3½ h.p. **REX,** clutch model, as new	£34 10
1911 5 h.p. 2-speed **REX DE LUXE**	£47 10
1910 7 h.p. twin **REX.** HOT STUFF	£37 10
1910 2-speed twin **REX DE LUXE**	£38 10
1910 5 h.p. **REX,** very fast. Special machine	£29 10
1911 2-speed twin **REX DE LUXE,** soiled only	49 Gns
3 h.p. magneto **TRIUMPH,** spring forks	£23 10
3½ h.p. magneto **REX,** spring forks	£19 19
3½ h.p. **REX,** h.b. control, 26in. wheels	£12 10
Twin **MOTO-REVE,** magneto, Druids	£15 0
5½ h.p. 2-speed twin **REX,** good and reliable	£34 10
3 h.p. **QUADRANT,** low frame	£10 10
2¾ h.p. **KERRY**	£10 10

Easy Payments at Special Rates.

£7

deposit and **10/-** weekly secures—

2¾ h.p. Mag. **MINERVA,** chain drive	£16 10
2¾ h.p. **R. and P.,** magneto	£14 10
3 h.p. Magneto **TRIUMPH**	£23 10
3½ h.p. Magneto **REX**	£19 19
2½ h.p. **REX** Magneto Lightweight	£16 10

SUNDRIES.

Nearly new Whittle belts, ¾in., **2/3**; 1in., **2/9** per foot.

3½ h.p. M.M.C.	£2 2
Myer's Motor Cycle Stands	3/-
New Cane Sidecar Body	17/8
28 x 2½ New Calmon Covers	17/8
26 x 2 Continental Covers	15/8

MOTOR BICYCLES FOR SALE.

TRIUMPH, 3½h.p., 1908, Albion free engine clutch, excellent condition, £25; Farrar sidecar, nearly new, £3/15.—Kelvey, 194, Oxford Rd., Manchester. [X2923

1912 J.A.P. and Precision Machines.—Finest machine in the market at the price, £38/18; send for list; sidecar, £5/5.—Blackburn, Atlas Lane, Brighouse. [X2738

HUMBER, 3½h.p., 1911½, 2-speed, free engine, perfect condition, £35/10; extra strong Millford sidecar, £6/10.—Rayner, Newlay Wood, Horsforth, Leeds. [X2816

NEW 1911 Motor Cycles, free engine or 2 speeds, at reduced prices. Easy payments from £10 deposit, balance in 12 monthly payments. Write at once.—Halifax Motor Exchange, Westgate, Halifax. [1307

1912 2-speed Free Engine Rudge, latest model, with Senspray carburetter, just delivered, not done 200 miles, perfect; first £50 secures.—Cowsill, Lawrence Rd., Chorley. [1159

ZENITH, 1912, 6h.p., new, in crate; accept £65 (listed £70/7); consider magneto machine part; private; bought car.—Box 779, *The Motor Cycle* Offices, Coventry. [X2874

LOOK.—3½h.p. 2-speed model N.S.U., new end 1910, overhauled, etc., perfect; £26/10; exchange combination, or single speed and little cash.—40, Andover St., Sheffield [X925

PARISH, Preston, Bradbury and Douglas agent.—Bradbury, 2-speed, free engine, in stock; few second-hand; exchanges a speciality; sidecar builder; tyres, belts, spares. [X2933

1912 4h.p. L.M.C. Motor Cycle, 2-speed and free, complete, with sidecar, like new, £65; 1911 3½ h.p. free engine Rover, like new, £35.—Woolley Bros., 23, Roundhay Rd., Leeds. [X2572

5h.p. 1906 Twin Rex, 1912 B. and B., spring forks, Cantilever spring saddle, new Stanley, Whittles, good sidecar machine; £13/10.—Riley, c/o Stevens, Wellington Rd., Dewsbury. [X2698

1908 Minerva Motor Cycle, 2¾h.p., £10; also a talking machine and 24 records, 12in., £4; exchange both and cash for sidecar combination.—Wardle, Abbeyford Rd., Woodlesford. [X2701

TWO Bradbury 1912 2-speed Models, like new, bargain, £40 each; 3½h.p. Ariel, in good order, and cheap, £10.—H. Thompson, Motor Garage, Levenshulme, Tel.: 338 Heaton Moor. [X2682

F.N., 5-6h.p., 4-cyls., new tyres, lamp, footboards, magneto, grand condition; £18, or offers; particulars; first cheque secures; buying lightweight. — Oaklands, Castleton, Manchester. [X2656

1912 3½h.p. Zenith Gradua, splendid condition, Autoclipse lamp, hora, Garner exhaust whistle, spares, £50, or near offer; also Millford rigid sidecar, £4/10. —Frain, Snainton, Yorks. [X2877

1911 Royal Enfield, 2¾h.p., chain drive, footboards, lamp, horn, tools, winner 2 hill-climbs, perfect condition, unscratched; £34, or offer.—Hy. Haworth, 141, Duckworth St., Darwen. [X2774

3h.p. N.S.U., 1911, Bosch magneto, 1911 B. and B. carburetter, good tyres, splendid condition; price £13, or best offer accepted.—H. Forshaw, grocer, Roby Mill, Appley Bridge, near Wigan. [1082

N.S.U., 3h.p., span new June, 1911, overhead valve magneto, spring forks, carrier, footrests, spares, etc., excellent condition, handy machine; any trial here; no exchange; £26.—Rostron, Bullfield, Bolton. [X2843

1912 Quadrant, 4½h.p., Armstrong 3-speed, new May 28th, 1912, ridden 30 miles, perfect, Lucas lamp, horn, Whittle, belt case, overalls, tools, plugs, spare belt; giving up; £51.—Coupe, 27, Pilot St., Accrington. [X2614

MOTOSACOCHE, 1908, Simms magneto, Whittle, footrests, Dunlop, Moseley motor tyres, tubes, Brooks B130, engine and machine good condition, used daily; accept reasonable offer, bargain.—Garner, Hapton. [X2712

1912 Scott, in stock, also Matchless, 54gns.; Douglas, £41; James, Armstrong 3-speed, trial runs only, £53; Bradbury, £48; Zenith single, 53gns.; variety of sidecars, etc.—W.F. and Co., 5, Cheltenham Parade, Harrogate. [X2764

1912 James, 2 speeds, chain drive, only delivered June 6th, cost £59/10, will accept £49/10, or with Lucas lamp and Cowey speedometer, £54/10, no offers; owner buying car.—Nightingale, Melbreak, Cadley, Preston. [1227

SCOTT, 1911, new August, perfect condition throughout, tyres as new, complete with 2 Brooks' bags, Lucas lamp, horn, spares, tools, etc.; £48; any trial or examination; seen any time.—Jesse Baker, 2, Acton Terrace, Wigan. Tel.: 457. [1174

PREMIER, 3½h.p., 2 special machines, slightly differing from standard, but absolutely new, and equal to a 1912 model, Druid forks, Dunlops tyres, etc., etc.; sacrifice for £39 each, quick sale; full guarantee.—Colmore Depot, 261, Deansgate, Manchester. [X2960

1909 7h.p. Rex, Mabon, Bosch, B. and B., spring forks, etc., every modern improvement, specially low, just overhauled, £22/10; Mills-Fulford castor wheel sidecar, £16 model, £4/5; motor cycle part.—40, Andover St., Sheffield. [X2852

B.S.A., 1911, Rom and Bates, 500, Watawata intermediate, Autoclipse, mirror, watch, Garnet whistle, climb anything; Rex, Palmer cord, Dunlop, tricar lamp, variable pulley, accumulator, no repairs needed for 12 months.—Lockwood, Ribbleden, Holmfirth. [X2746

REY

5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.

Tele: "Rey, Hampstead." Tel: 2678, P.O., Hampstead.

EXTENDED PAYMENTS

Taken on any Machine or Runabout.

Following 1912 Machines for

IMMEDIATE DELIVERY

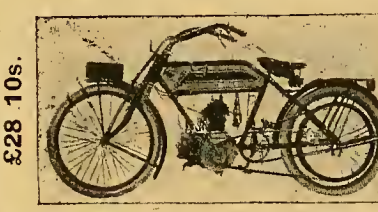
AND IN STOCK:

F.N., 5-6 h.p., Multiple disc clutch	£58 0
TRIUMPH T.T. Roadster, 1912	£50 0
TRIUMPH Standard Model	£48 15
TRIUMPH 1912 F.E. Model	£55 0
RUDGE Multi-speed, 1912	£60 0
RUDGE Standard Model	£48 15
RUDGE T.T. Model	£48 15
RUDGE F.E. Model	£55 0
BRADBURY, 3½ h.p. 2-speed, chain driven	£58 10
BRADBURY Standard Model	£48 0
BRADBURY F.E. Model	£54 10
BRADBURY T.T. Model	£48 0
BRADBURY, 2-speed Model	£55 0
A.C., 1912, 3 weeks	£87 10
CLYNO 5-6 h.p. 1912 2-speed Model	65 Gns
P. and M. 3½ h.p. 1912 2-speed Model	£65 0
B.S.A. 3½ b.p. 1912 2-speed Model	£60 0
B.S.A. 3½ h.p. 1912 Standard Model	£50 0
ZENITH 8 h.p. Model	69 Gns
ZENITH 6 h.p. Model	67 Gns
ZENITH 3½ h.p. Model	53 Gns
DOUGLAS L Lady's Model	£52 0
DOUGLAS J T.T. Model	£47 0
DOUGLAS G Standard Model	£41 0
DOUGLAS Model K	£50 0
SINGER 2-speed 4 h.p. Sidecar Model	£65 0
SINGER 3½ h.p. 3-speed Model	£58 10
LINCOLN ELK 3½ h.p. Standard Model	£34 0
HUMBER 3½ h.p. 2-speed Model	£52 10
BAT 6 h.p. Standard Model	£58 0
G. and N. Runabout in four weeks.	

Any other makes on application.

TRADE SUPPLIED WITH VARIOUS MAKES. LIBERAL DISCOUNTS ALLOWED.

£28 10s. to **£34**

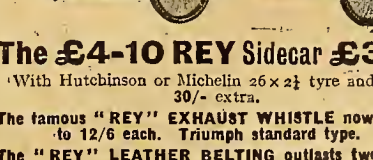


Sole London Agent for the famous LINCOLN ELK. Finest value on the market for quality and reliability.

Machines at Bargain Prices to Clear.

2011.	**F.N.,** 1911 model, 6 h.p., like new	£35 0
1955.	**F.N.,** 4-cyl., 6 h.p., good order	£35 0
1906.	**F.N.,** 4-cyl., 1911, with sidecar	£35 0
1968.	**REX,** 1910½, 3½ h.p.	£25 0
2066.	**J.A.P.-CHATER-LEA,** 4 h.p., 1911	£29 0
2146.	**DOUGLAS,** 1910, fine order	£24 0
1640.	**ZENITH,** 1911, 3½ h.p., good order	£40 0
2063.	**F.N.,** 4-cyl., nice order	£25 0
2135.	**ZEDEL** Twin, 6 h.p., Chater fitting	£22 0
	RUDGE T.T., 1912, as new	£40 0

All Accessories included on S.H. at the price advertised.



The £4-10 REY Sidecar £3-10

With Hutchinson or Michelin 26 x 2¼ tyre and tube, **30/-** extra.

The famous "REY" EXHAUST WHISTLE now reduced to 12/6 each. Triumph standard type.

The "REY" LEATHER BELTING outlasts two of any other makes. Price 2/- per foot.

—— SPECIAL DISCOUNTS TO TRADE. ——

ONLY HOUSE IN ENGLAND FOR QUICK DELIVERY

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Caught on!!

OUR REED CANE BODIES

have undoubtedly hit the mark.

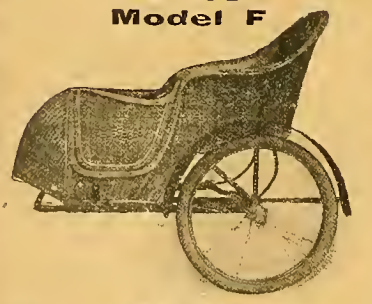
Undoubtedly this class of cane is far superior and more classy than ordinary cane or wicker work, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

Model E



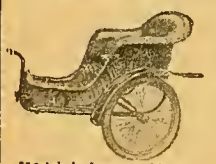
£7 10s.

Model F



£8 8s.

OUR POPULAR MODELS ARE GOING STRONG.



Model de Luxe.—£6 5s.



Model C.—£7.



Model E.—£7 5s.



Model O.—£8.

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID. Send for list.

MISCELLANEOUS BARGAINS.

1911 B. & B. Carburetter, good order	15/6
P. & M. Carburetter, h.b. control	10/-
1912 B. & B. Caburetter, variable jet	£1 0
Amac Carburetter, H.B. control, good	12/6
4½ h.p. Aster Engine, water-cooled	£4 10
4½ h.p. Buchet Engine, water-cooled	£4 10
2 h.p. Stationary Engine water-cooled	£4 10
3 h.p. Simms Engine, M.O.V.	50/-
Cocoanut Fibre Sidecar, foot-mats	3/-
Albion Clutch, fits Triumph	47/6
New Screw-cutting Lathe, 4in. centres	£6 10
Brooks's B105 Saddle	10/6
Brooks's B130 New Saddle, 1912 model	14/6

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane, HALIFAX (Two minutes from G.P.O.)

Telephone 919.

MOTOR BICYCLES FOR SALE.

BAT, 8h.p., 1912, 2-speed, in stock, chain drive, kick start, £75, usually has to be waited three months for; also one 1912 8h.p., belt drive, with P. and M. 2-speed gear, usual price £70/10, cancelled order, accept £65 to clear quickly.—Colmore Depot, 18, Renshaw St., Liverpool. [1326

CHATER-LEA, delivery one week, not yet booked up; £78/15; £10 deposit books this.—Colmore Depot, 18, Renshaw St., Liverpool. [1327

RUDGE Multi-speed and Free Engine Models, all in stock; Alldays-Matchless, 3½h.p., with 2-speed and sidecar, the poor man's motor car, £57/10; Premier, 2¾h.p., lightweight, with 3-speed, list price £46/10, what offers, or exchange; Comet, 4½h.p. Precision, with 2-speed gear, 26×2½ tyres, an ideal sidecar machine, 50 guineas; 1911 Rudge, free engine model, like new, £45, or exchange.—Parry's, The Oldham Motor Cycle Depot, everything for the motor cyclist, 68, George St. Oldham. [X2879

NORTHERN Depot, Ltd., "Everything Motorish," Leece St., Liverpool.—Latest 1912 models in stock. Kerry clutch, also standard; new clutch Kerry, shop-soiled, £5 off list; clutch Triumph, cone clutch Rex-Jap, 4h.p.; Bradbury, 2-speed, with adjustable pulley; shop-soiled latest Rover, with mark 111, Armstrong gear, Brooks pan seat, £4 off list; 6 and 8h.p. Rex-Jap de Luxe; a few vacant dates left for delivery in three weeks; A.C. Sociable, delivery this month; special torpedo sidecar body, £3. [X2927

GREAT Sale of motor cycles.—3½h.p. Rex, £7/10; 4h.p. Chater-Lea, magneto, spring forks, B. and B., £12; 3h.p. Triumph, £9; 1909 Douglas, £18/10; 1911 Kerry-Abingdon, £28; 5-6h.p. Rex, 1909, twin-cyl., free engine, and sidecar, £25, worth £40; 1908 Triumph, new condition, £25; P. and M., nearly new, 2-speed, free engine, £37/10; we have about 60 second-hand motor bikes in stock, consisting of 1907, 1908, 1909, 1910 Triumphs, prices from £15; several Bradburys, Singers, Moto-Reves; all machines sold are warranted in good order; sidecars from 50/-.—The Motor Cycle Exchange, 160, Young St., Sheffield. [0100

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

1912 Standard Bradbury; best cash offer; must sell.—Box 770, *The Motor Cycle* Offices, Coventry. [X2754

1909 3½h.p 2-speed Humber, just overhauled, re-bushed; £25, offers.—Burton, Raleigh St., Walsall. [1107

ALLDAYS, 3½h.p., late 1911, condition equal to new; £30, bargain.—249, Buxton Rd., Macclesfield. [1034

TRIUMPH, free engine, 6 weeks old, done 320 miles, unscratched, as brand new; best offer.—25, Eastbourne St., Walsall. [1050

3½h.p. Bradbury, h.b.c., adjustable pulley, spring forks, low, excellent condition; £12/10.—Whittaker, Moss Cottage, Macclesfield. [X2159

BARGAIN.—Twin lightweight, 2¾h.p., magneto, Dunlops, lamp, horn, many spares; £22.—117, New Chester Rd., New Ferry. [1112

BRADBURY, 1911, as new, speedometer, mirror, spares, etc.; quick sale (guaranteed) £59.—Blair, Dental Surgery, Runcorn. [1040

1912 Bradbury, free engine model, ridden 150 miles, £47; with spring wheel sidecar, £52.—Lester, Fryars Rd., Beaumaris. [X2846

INDIAN, 5-6h.p., 1911, fixed engine, tyres, condition guaranteed, lamp, accessories; £28.—Box 755, *The Motor Cycle* Offices, Coventry. [X2612

2h.p. Clement-Garrard, good condition, F.R.S. lamp, spring forks, Amac carburetter; bargain, £5/10.—Stimpson, Barber's Hill, Malvern. [X2167

2½h.p. Bradbury, B. and B., Druids, lamp, horn, watch, re-bushed, good condition; £16.—Westgate, Albert Rd., Wolverhampton. [X2817

TRIUMPH, 1908, splendid condition, just overhauled by Triumphs, spare tyre and parts, complete; £28.—Jackson, 38, Princess St., Knutsford. [X2169

1911 2¾h.p. Royal Enfield, chain drive, magneto, in new condition; must sell; accessories; 30 gns., cash only; approval.—53, Market St., Buxton. [X2845

ROVER, late 1911, free engine, with sidecar, 1912, perfect condition; expert examination invited; owner ordered car; £38 cash, lowest, bargain.—16, Hill, Llanrwst. [X2158

ARIEL, 3½h.p., 1910, free engine, variable gear, decompressor, engine overhauled in 1911; bargain, £23; giving up motoring.—Apply, 56, Lichfield Rd., Walsall. [X2751

TRUMP-J.A.P., 1911, 3½h.p., low position, fast and reliable, well known, including lamp, horn, speedometer, tools, etc.; £30; trial.—Heatley, Uppington, Wellington, Salop. [1061

1911 (October) 6h.p. Rex, free engine, 2 speeds, stand, expert examination; too powerful for owner; £45, part exchange 1911 F.E. Triumph.—Warren, Prospect House, Newhall, Burton-on-Trent. [X2796

ENFIELD Twin, almost new, cost £45 few months ago, sacrifice, 30 guineas, exchange Triumph; N.S.U., 1908, 3½h.p., Palmer cords, perfect, £16; offers invited.—Thomas F. Watson, Ripley, Derby. [X2864

SOMETHING for NOTHING!

We have just secured a few Brand New 1911 ENFIELD MOTOR CYCLES.

Price **£25** each.

IN STOCK.

We have the following new machines actually in stock.

1912 Multi **RUDGE**	£60 0
1912 Standard **RUDGE**	£48 0
1912 3½ h.p. **NEW HUDSON,** 3-speed	57 Gns.
1912 2¾ h.p. **NEW HUDSON,** 3-speed	47 Gns.
1911 3½ h.p. **PREMIER,** 2-speed	£48 0
1911 3½ h.p. **PREMIER,** Armstrong 3-speed	£46 10

SECOND-HAND BARGAINS.

1910 **ENFIELD,** very good order	£19 0
1908 3½ h.p. **P. and M.,** 2 speeds	£28 0
3½ h.p. **N.S.U.,** magneto, spring forks	£17 0
2 h.p. **WOLF,** magneto, spring forks	£15 0
4 h.p. **ANTOINE,** M.O.V., 26in. wheels	£14 0
1910 **P. and M.,** 2 speeds, fine goer	£32 0
1909 **MOTO-REVE,** twin engine, magneto	£20 0
1911 6 h.p. **N.S.U.,** 2-speeds, foot starter	£30 0
3½ h.p. **N.S.U.,** 2-speed, spring forks,	£16 0
1910 8 h.p. **BAT,** M.O.V., 2 speeds	£45 0
1911 Lady's **HOBART,** Armstrong 3-speed	£36 0
3¾ h.p Twin **PREMIER,** fine machine	£25 0
1911 2¾ h.p. **MOTOSACOCHE,** magneto	£27 0

SINGLE-CYLINDER REXES.

1910 3½h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p 1908 Featherweight Rex, Bosch mag.	£17 0

TWIN-CYLINDER REXES.

1910 5-6 h.p., Roc 2 speeds, very fine	£37 0
1906 5-6 h.p. Twin Rex	£16 10
5-6 h.p, Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, 2 speeds, M.O.V.	£48 0
5-6 h.p. de Luxe, 1908, 2-speed model	£28 0

SIDECAR COMBINATIONS.

8 h.p. **BAT,** 2 speeds, Millford sidecar	£50 0
5-6 h.p. 2-speed 1908 **REX** and sidecar	£33 0
7-9 h.p. 2-speed **REX** and sidecar	£53 0

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3 h.p. **MINERVA,** vertical, M.O.V.	£12 0
3¼ h.p. **EXCELSIOR,** Amac, h.b. control	£10 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

3½ h.p. **N.S.U.,** 2 speeds, spring forks	£16 0
3 h.p. 1908 **REX,** Bosch magneto	£17 0
5-6 h.p. Twin **REX,** spring forks, h.b. control	£16 10
Twin-cylinder **MOTO-REVE,** magneto, Druids	£20 0
4 h.p. **ANTOINE,** M.O.V., vertical engine	£14 0
2 h.p. **WOLF,** A.J.S. engine, magneto	£15 0
3½ h.p. **N.S.U.,** magneto, spring forks	£17 0
4½ h.p. **HUMBER** Tricar, 2 speeds, wheel steering	£19 0
5 h.p. **HUMBER** Car, 2-seater, good goer	£22 0
5 h.p. **REXETTE,** Oppermann 3 speeds	£18 0

MOTOR CYCLE FRAMES.

We have a quantity of frames by well-known maker.

Price 32/6 each.

Rigid forks, 7/6 extra. Druid forks, 45/- extra. Enamelled and plated in first-class style.

MISCELLANEOUS BARGAINS.

5-6 h.p. Rex Engine, carb., silencers, etc.	£5 0
Duocar, 2 speeds, Bosch magneto	£25 0
26×2½ Extra Heavy Kempshall Cover, new	£2 8
26×2½ " " "	£1 19
C.A.V. V twin magneto, 45 degrees	£3 3
1912 B. and B. Carburetters, variable jets	28/6
1912 B. and B. Carburetters, single jet	27/-
1912 Senspray Carburetters	28/6
Camel 1in. Rubber Belting per foot	1/3
Fulford Castor Wheel Sidecar	£5 0
Sidecar Lamps, show red light behind	7/6
Trailer, 26in. wheels	25/-
New Toolbags, 9×6×3½in.	4/6
Sidecar Aprons, green or red, with studs	7/6
New Lycett's Tubular Carriers	4/11
Longuemare Carburetters	5/-

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane.

Telephone 919. **HALIFAX** (Two minutes from G.P.O.)

MOTOR BICYCLES FOR SALE.

BARGAIN.—5 weeks old 1912 Triumph, free engine, Palmer cord tyres, Dunlop belt, used 250 miles, spotless, still guaranteed, £50; also Montgomery 14-guinea castor sidecar to suit, £10, or offers; separate or complete.—Holt, Motors, Leamington. [X2735

PREMIER, 3½h.p., 2 special machines, slightly differing from standard, but absolutely new, and equal to a 1912 model, Druid forks, Dunlop tyres, etc., etc.; sacrifice for £39 each, quick sale; full guarantee.—Colmore Depot, 27, Colmore Row, Birmingham. [X2959

BARGAINS.—1911 (May) free engine Rudge, nearly new Dunlop tyres, belt, £40; 1911 (April) 2-speed 3½h.p. Humber, £35; 1911 (May) 3½h.p. free engine Premier, £35; 1909 (June) fixed Triumph, £28; ditto 1908, £24; 1912 Singer, 3½h.p., free engine, just delivered, £55 model, first cheque £50, guaranteed; 1912 Triumph, free engine, just delivered, £55; delivered carriage paid; reasonable cash offers considered.—Holt, Motors, Leamington. [X2736

SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

1912 Triumphs; immediate delivery, free engine model.—Crabtree, Wisbech.

1912 Bradburys, 2-speed, immediately; 3-speed this month.—Crabtree, Wisbech.

1912 Humbers, in stock; 2h.p. lightweight, 2¾h.p. twin, 3-speed, 3½h.p., 2-speed.—Crabtree, Wisbech.

1912 Alldays-Matchless in stock, magnificent value, 40 guineas.—Crabtree, Wisbech.

1912 New Hudsons, 3-speed models; early deliveries.—Crabtree, Wisbech.

1912 Rover, free engine model, complete with lamp and horn, used few times, absolutely as new; £49.—Crabtree, Wisbech. [X2539

3h.p. Bradbury, in good order; £6/10, or exchange.—Smith, Ironmonger, Clare, Suffolk. [1288

CHIEF Triumph Agents for Cambridge (early deliveries), King and Harper, Cambridge. [0033

2¾h.p. 1910 J.A.P., magneto, low, splendid order, lamp; must sell.—Suffolk, Loddon, Norfolk. [1092

BROWN, 3½h.p., h.b.c., spring forks, cash, or exchange, offers.—Chapman, Waterworks, Swaffham. [1058

£10.—2¾h.p. Minerva, h.b.c., splendid running order, all accessories, good tyres and belt.—Turner, Spursholt, Ipswich. [1035

6h.p. Matchless, 1911, excellent condition throughout, very little used; £42.—7, De Freville Av., Chesterton, Cambridge. [X2165

1912 Enfield Lightweight, 2-speed model; original price £52/10; not been ridden 20 miles, in every respect as new; price £46.—Robinson's, Green St., Cambridge. [X2702

ONE 1912 Triumph, free engine model, actually in stock; £55.—Triumph agents, Robinson's, Green St. Cambridge. [X2703

CLYNO, 5-6h.p., 2-speed; sole agents in Eastern Counties; £68/5.—Robinson's, Green St., Cambridge. [X2704

2h.p. Humber Lightweight, 1912 pattern, scribd only; special price to clear £32/10.—Robinson's, Green St., Cambridge. [X2705

DOUGLAS, 1911 pattern, engine, tyres in excellent order; price to clear £28.—Robinson's, Green St., Cambridge. [X2706

ROBINSON'S Motor Bicycle Garage, Green St., Cambridge, Triumph agents. Tel.: 388. T.A.: Bicycles, Cambridge. [X2707

1912 Bradbury, only delivered 3 weeks; too powerful for owner; sacrifice £40.—Box 781, *The Motor Cycle* Offices, Coventry. [X2899

F.N., 1910, 2¼h.p., shaft drive, 2 speeds, free engine, very carefully used; £22, a bargain.—H. Leavis, 6, Hall Crescent, Cambridge. [1160

1911 Douglas, splendid order, studded tyres, pulls better than when new; £27/10, or near offer.—P. Riddelsdell, Boxford, Suffolk. [X2869

3½h.p. Bradbury, N.S.U. 2-speed gear and free engine, splendid order; £32/10, or nearest offer.—Motorist, Bridge House, Boxford, Suffolk. [X2866

2½h.p. Minerva, m.o.v., vertical, fast, light, new accumulator, belt; £8/10, worth £12; any trial.—Rookwood, Acton, Sudbury, Suffolk. [1204

MOTOR Bicycle, 3h.p. M.M.C. engine, thoroughly overhauled, several new parts; bargain, £13.—W. Kybird, 76, Argyle St., Mill Rd., Cambridge. [1053

2¾h.p. Kerry, spring forks, spring seat, low, fast, powerful, £3 just spent on engine; bargain, £6, worth £10.—124, Northgate St., Bury St. Edmund's. [1098

4h.p. Roc, free engine, 2 speeds, handle starting, Bosch, Hutchinson, Kempshall, just overhauled, lamp, tools, etc.; £16. — Naylor, fruiterer, Mill Rd., Cambridge. [X2881

3½h.p. Rex, magneto just overhauled by Bosch, Amac, adjustable pulley, Lyso, spares, 3 tyres, pulley; £18/10, with 1911 sidecar £21/10.—Page, 50, Southtown, Gt. Yarmouth. [1239

It's just as easy

—and will pay you better in the long run—to buy the BEST machine.

—We are AGENTS for all the best makes, and in addition to giving you prompt delivery, can equip the machine to your own specification, and give you free driving lessons.

—We have the following latest 1912 models

Now in Stock for Immediate Delivery :

SCOTT
(Two-stroke, two-speed).

TRIUMPH
(Free Engine and T.T. Roadster).

REX
(6 h.p. de Luxe, two-speed, and 6 h.p. Racer).

B.S.A.
(3½ h.p., two-speed).

N.S.U.
(3½ h.p., two-speed).

ZENITH
(6 h.p., Gradua Gear).

PREMIER
(3½ h.p., three-speed).

HAZLEWOOD
(2¾ h.p., three-speed).

Cash, Instalments, or Exchanges.

Write for list of Second-hand Machines.

Delivery within 3 weeks of the famous

REX-J.A.P.

"The ideal Sidecar Machine."

The Premier Motor Co., Ltd.,

Aston Rd., BIRMINGHAM.

TELE { grams: "Primus," Birmingham. phone: Central 4310.

MOTOR BICYCLES FOR SALE.

BARGAINS.—3½h.p. brand new Premiers, 1911 models. Fixed engine, list £47/10, our price £36; free engine list £54/17, our price £41/15; Sturmey-Archer 3-speed gear, £58, our price £45/10; in crates, delivered at any address.—T. H. Nice and Co., Bury St. Edmunds. [1085

SECTION VI.

Worcestershire, Herefordshire, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

BRADBURY, 1911, standard, perfect order; £32, a bargain.—Eldridge, 93, Ryelands St., Hereford. [X1752

3½h.p. 2-speed 1910 N.S.U., perfect condition.—Box L7,337, *The Motor Cycle* Offices, 20, Tudor St., E.C. [1023

2¼h.p. Stevens, light, fast, footboards, new bars, B. and B. accumulator; £7/15.—43, North St., Dudley. [1051

3½h.p. Rudge, multi-speed, 1912, not yet unpacked from crate; what offers?—Waters and Sons, Hatfield, Herts. [X2266

2h.p. Moto-Reve, thoroughly sound order, tools, spares, etc., tyres good; £18/10. — Pratt, Rock House, Knighton, Rads. [X2840

QUADRANT, 3½h.p., 1911, B. and B. accumulator, low, fast and powerful; £11/10.—Jones, Church St., Llanderfel, Wales. [X2847

1912 A.J.S., 2-speed, kick starter, ridden very little, practically new; cost £47/10, sell £40.—De la Hay, Ridge St., Wollaston, Stourbridge. [1072

1912 5-6h.p. 4-cyl. F.N., clutch model, 6 weeks old, run 500 miles; 50 gns.; good reasons for selling.—762, *The Motor Cycle* Offices, Coventry. [X2664

TRIUMPH, 1911, condition as new, lamp and generator, horn, tools, spares, backrest, Veeder cyclometer, carhide carrier; price £36, bargain.—Bryant, Bromsgrove. [X2566

1912 Motors Stocked.—3½h.p. Lincoln Elk, £34; clutch model, £36/10; 2h.p. Moto-Reve, £26, 2¾h.p. Lewis, £36; lamp, horn, with machines.—Rhodes Bros., Kidderminster. [1291

3h.p. Noble, Amac carburetter, h.b.c., new handle-bar and belt, tyres perfect, vertical engine, enamelled French grey, good running condition; bargain, £12.—Brown, Astley, Stourport. [X2622

MORGAN Runabout in stock, with hood and screen 1911 3½h.p. B.S.A., clutch model, as new, 40 gns.; 1911 2¾h.p. New Hudson-Jap, Armstrong 3-speed and free engine, 33 gns.—Pitts, Evesham St., Redditch. [X2795

FRED. MORGAN, Talgarth, can give prompt delivery of 1912 New Hudsons, also some 1911 models, second-hand, and 3½h.p. 2-speed 1911 Humber, with Montgomery sidecar, nearly new, 2¼h.p. twin N.S.U., etc.; enquiries solicited. [X657

3½h.p. Alldays-Matchless, free engine, with variable 2-speed gear, latest B. and B. variable jet carburetter, and fitted with College mudshield and apron, bought new 5 months ago and in splendid condition; a bargain.—Coles, Lauriston House, St. Ethelbert St., Hereford. [X2734

SECTION VII.

Gloucester, Oxford, Buckingham, Berks, Wilts, and Hants, and Channel Islands.

PREMIER 2¼h.p. Lightweight, been ridden 200 miles; take £26, listed £36.—Turnock, Hook Norton. [X2769

BRADBURY, 1911, brand new, N.S.U. 2-speed gear; great bargain, £45.—Ginger, Motors, Banbury. [X2931

TRIUMPH, 1912, F.E., brand new, unridden; 50 gns., car. paid.—No. 778, *The Motor Cycle* Offices, Coventry [X2872

4h.p. Chater-Lea-Jap, spring forks, magneto, tools, spares, complete set of overalls; £20.—7, Bedford Rd., Shelton. [X2966

1912 B.S.A., free engine, in stock, £56/10; N.S.U., 2-speed, free engine, £15, or offers. — Mizen, Downton, Wilts. [1241

IMMEDIATE Delivery of new Rudge motor bicycles, Multi-speed and free engine models.—Willis and Son, Eton, Windsor. [0314

ROC, 5h.p., 1910, 500 miles, 2-speed, free, Bosch, Whittle, lamp, m.o.v.; bargain, £37.—George, 33, Slaney St., Gloucester. [X2155

1910½ Moto-Reve Twin, splendid condition; offer; exchange higher power. — Westfield House, Western Rd., Wolverton. [1102

1908 Triumph, excellent condition, new Whittle belt; £20; will ride 50 miles to purchaser.—Wier, Norfolk House, Downend, Bristol. [1052

RUDGE and Bradbury Models, for prompt delivery; trial runs; exchanges entertained; send for lists.—Agent, Barnes, Colnbrook, Bucks. [0003

SCOTT, 1910, nice order, with horn, Lucas head light, Montgomery sidecar fittings; £33.—Lieut. Mascull, R.N., 66, Queen's Rd., Portsmouth [X2708

3½h.p. Twin Peugeot, magneto, B. and B. carburetter, adjustable pulley, perfect bargain, low build. —12, Grove Av., Fishponds, Bristol. [1054

F.N., 4½h.p., 4-cyl., good condition, runs well; trial here by appointment; £15; no exchanges.—Horwood, Walnuts, Sturt Green, Maidenhead. [X276

MOTOR BICYCLES FOR SALE.

LADY'S Singer Motor, 2h.p., 1911, in perfect condition throughout, has not run more than 400 miles; £26.—Captain Cheverton, Rookley, Isle of Wight. [1102

PHELON and Moore, 1911, 2-speed, new heavy Kempshall back, condition as new; best offers.—Willways, St. Augustine's, Bristol [X2657

1910 Lightweight F.N., Bosch magneto, automatic carburetter, little used, perfect; £19, or nearest.—Particulars, Box No. 761, *The Motor Cycle* Offices, Coventry. [X2650

1912 3½h.p. Standard Twin Premier, spares, 800 miles, cost £54, perfect order guaranteed, exceptionally fast; trial; £43, close offer considered.—Oriel College, Oxford. [1180

TWIN Rex de Luxe, 1909, 5-6h.p., 2 speeds, handle starting, free engiae, Whittle, new B. and B. carburetter, good condition, just rebushed; £30.—Huxham, surveyor, Amesbury. [1222

LADY'S Motosacoche, 2h.p., new condition, only ridden 200 miles, illness cause of sale, cost £42 last autumn; sacrifice £26, or near offer.—Lewis, 23, Parker St., Oxford. [X2831

TRIUMPH, free engine, 1910, nearly new Kempshall tyres, engine thoroughly overhauled, speedometer, lamp, horn, etc., £35; 2½h.p. Enfield, £22.—Longman, Fisherton, Salisbury. [X2661

2½h.p. Lightweight Premier, Dunlop tyres, only ridden 100 miles, Lucas 458 Projector set, Serpentine horn, watch, spares, etc.; cost £40 month ago, accept £30.—Squire, Bart St., Newbury. [1140

GRIFFON, 2¾h.p., engine receatly rebushed throughout, new cylinder, new piston, new adjustable pulley, new studded tyre on back, splendid hill-climber; £12 quick sale.—43, Market Sq., Bicester. [X2170

EYLES and Eyles, 113, St. Aldate's, Oxford.—1911 Scott, only soiled, £50; 1910 Scott, £32; Kerry-Abingdon 2-speed and sidecar, £48; 1911 Humber, 2-speed, £35; 1910 Enfield, £28; 1908 Triumph, £26. [X2806

ZENITH, 1911, 3½h.p., new late last season, tyres perfect, extra large steel-studded cover on back; open to any examination; had really careful use, tools and accessories; £44.—The Morris Motor Cycle Garage, Oxford. [X2820

THE Morris Garage, Oxford, have the largest stock of new machines in the county; immediate deliveries of nearly all makes for cash or easy payments. [X2821

SECOND-HAND Motor Cycles.—We have a large stock of first-class machines at reasonable prices. List free.—The Morris Garage, Oxford. [X2822

1909 Triumph, in good condition, just re-bushed, tyres excellent condition, lamp, generator, horn, and spares, complete; reason for selling, buying a heavier sidecar machine; what offers?—Reply, Box L7,402, *The Motor Cycle* Offices, 20, Tudor St., E.C. [1084

1912 Clyno, £68/5; 1912 F.E. Triumph, £55; 1912 Enfield combination, done 800 miles, £75; 1911 F.E. Triumph, like new, £45; 1911 Douglas, 2-speed free engine, almost new, £35; 1911 chain drive Enfield, £28; 1912 T.T. Triumph, £45, done 500; all in stock, no waiting.—Jenks, Motors, Bewdley. [1311

DOUGLAS, lady's, 1911, 2-speed, free engine, little used, £38; Douglas, 1911, pedal model, in splendid condition, £30; Douglas, 1911, pedal model, 2-speed, only wants trying, £33; Douglas, 1912, model I, winner of special gold medal and best lightweight performance London-Edinburgh at Whitsuntide, accessories, £42; Douglas, model K, from stock, £50.—Gibb, Gough and Son, Gloucester. Tel.: 852. [X2802

HAVING got 1912 model Pheloa and Moore, advertiser's specially built and finished 1911 model, Olympia Show machine, is for disposal, perfect condition, little used, car chiefly last season, faultless performer, machine has the following extras: Palmer cord tyres, petrol filter, and h.b. switch.—A. W. Metcalfe.—Price with horn £50. Machine at Messrs. Willway's and Sons, Ltd., Bristol. [X1647

SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent and Sussex.

TOTTENHAM.

1912 Models in stock.

CLYNO, 1912, 2-speed model, with sidecar; £85.

1912 Humber 2-speed, Bradbury F.E., A.C. Sociable, this month.

TOTTENHAM.—1911 F.E. Bradbury, £49; shop-soiled Rudge, F.E., £50.

1910 Humber, 2-speed model; £33.

1910 Scott; £34; excellent.

1910 Douglas, 1910 Motosacoche, 1911 Humber 2-speed, £37/10; nearly new 4½h.p. Fafnir, £25; Triumph, 3h.p., £16/10.—Stamford Hill Motor Co., 128, High Rd., Tottenham. Tel.: 1982. [X1856

EXCELSIOR, 3½h.p., tyres perfect, 2 accumulators, lamp, horn, engine good condition; £8.—Below.

MINERVA, 2¾h.p., B and B., Kempshall and Clincher tyres, spring forks, 2 accumulators, speedometer, mirror, lamp, horn; £12.—Chatwin and Hartley, 22, King St., Richmond. [1157

ESTABLISHED 20 YEARS "IN THE HEART OF THE TRADE"



COLMORE DEPOT
BIRMINGHAM

A TIP FOR THE T.T.

Watch our Agencies

MATCHLESS

Immediate delivery of all Matchless models 6 h.p. or 8 h.p. or 3½ h.p.

with the Colliers "up," the men who know the inside and outside of a motor cycle like a scholar knows his book. The roadster machines (*in our stock*) show the brains and ability behind the workman.

SCOTT

Book now for delivery August of an inimitable Scott.

the dark horse, the silently powerful one. The machine that hums like an aeroplane, and travels as fast. The "iron hand in velvet glove" sort of mount, that hides its splendid efficiency behind a mask of smoothness and luxury.

DOUGLAS

We are the largest contractors in the world for Douglas. Delivery from stock.

the wonderful little twin, of new principles and correct ones. Mr. S. L. Bailey recently won the hour race at Brooklands, doing 56½ miles in the hour and beating every 3½ b.p. except one.

Mr. S. L. Bailey will ride for the Colmore Depot in the T.T. Race, and will ride a Colmore-Douglas.

TRIUMPH.

We have Triumphs in stock.

Triumphs are *always* well up in the T.T., and will be again this year.

PREMIER, BAT, ZENITH

(*in stock*).

These are among those standing out this year. But remember the sensational rides in the past of Basil Jones on his Premier, and Bowen on his Bat, both among the fastest men "up." And think of what a chance Barnes would have had on his hill-conquering Zenith.

ENFIELD, CHATER-LEA, CLYNO (*in stock*).

These are not T.T. mounts, but worthily fill their places as grand sidecar combinations.

COLMORE DEPOTS:

BIRMINGHAM—35, Colmore Row.
MANCHESTER—261, Deansgate.
LIVERPOOL—18, Renshaw Street.
LEICESTER—62, High Street.

MOTOR BICYCLES FOR SALE.

B.S.A. 1912 Motor Cycles; easy payments arranged.—Rivett, Leytonstone.

B.S.A., 1912, free engine models, in stock.—Rivett, Leytonstone.

B.S.A., 1912, fixed engine models, in stock.—Rivett, Leytonstone.

MOTOR Accessories, oils, etc.—Up-to-date stock at Rivett's, 236, High Rd., Leytonstone. [0054

PAGE, Letchworth.—1912 Free Engiae Triumph; £55; motor in part payment. [1229

PAGE, Letchworth.—1907 Triumph, new cylinder and piston, 1911 B. and B., adjustable pulley, splendid machine; £25. [1230

PAGE, Letchworth.—3½h.p. 1911 Humber, 2-speed, free engine, Mills-Fulford sidecar, done 1,100 miles; £50, offers. [1231

PAGE, Letchworth.—5b.p. Twin Rex, free engine, 2 new covers; £20. [1232

PAGE, Letchworth.—4½h.p. Twin Minerva and sidecar, magneto; £19. [1233

PAGE, Letchworth.—Motor cycles repaired; good work and reasonable prices. Tel.: 91 Letchworth. [1234

EAGLES.—Bat-Jap, 1912, 6b.p. twin, T.T. model, Rom combination tyres, nearly new; £48.

EAGLES.—N.S.U., twin, 5½h.p., Bosch magneto, spring forks, 2-speed gear and free engine; £26.

EAGLES. — N.S.U., 3½h.p., 1908, magneto, spring forks, 1912 B. and B. carburetter, adjustable pulley; £17/10.

EAGLES.—Indian, 7h.p., 1911, twin, free engine model, enamelled blue, fine condition; £43.

EAGLES.—F.N., 1911, 4-cyl., automatic carburetter, drip lubrication, fine condition; £34.

EAGLES.—Triumph, 1908, standard, perfect condition, Autoclipse lamp, all accessories; £25.

EAGLES.—N.S.U., 3½h.p., nearly new, magneto, 1911 spring forks, 2 speeds, free engine; £33.

EAGLES.—Mills-Fulford sidecars; always a large stock of latest models, from £6/6.

EAGLES.—N.S.U., 6h.p., latest model, twin, with 2 speeds, free engine; £61/15 (the ideal sidecar machine); delivery from stock.

EAGLES.—Immediate delivery from stock of the famous N.S.U. 2-speed gears with free engines, from £5/15.

EAGLES and Co., High St., Acton.—N.S.U. West London district agency. Immediate delivery of 1912 models; liberal allowances for machines in part payment.—Tel.: 556 Chiswick. [X2937

3½h.p. Humber, 2-speed, splendid condition; £35.—Davison, Ditchling, Sussex. [1196

NEW 1912 Multi Rudge; £60.—E. T. Morriss and Co., Ltd., 139, Finchley Rd., N.W. [1128

2½h.p. Clarendon, perfect condition, h.b.c.; £10, or offer.—Rose, 155, High Rd., Streatham. [1290

TWIN Rex, 5-6h.p., 1910, fine order; £28, offer.—G., Yew Tree Farm, Burwash, Sussex. [1206

1910 Douglas, excellent condition; bargain, £27.—Potter, Preston Hill, Wingham, Kent. [1075

DOUGLAS, 1911, overhanled makers, excellent machine; £27/10.—Digby, Mersea, Essex. [X2678

DOUGLAS, 1911½, 2-speed, first-class condition; £32.—25, Chatsworth Rd., Clapton, N.E. [1267

DOUGLAS, late 1910, good order; £22, or close offer.—Wiggs, 90, St. Albans Rd., Watford. [1202

NEW 5-6h.p. Bat-Jap, ready for immediate delivery.—Golders Green Garage, Hendon, Finchley. [X2663

3h.p. De Dion, h.c., everything all new, low, reliable, fast; best offer.—1, Bond St., Holford Sq., N. [1120

1909 3½h.p. Chater-Lea-Peugeot, take sidecar, low; £12/10.—Gidner, 95, Cecil Rd., West Croydon. [1240

REX, 5-6h.p., T.T., 1910, excellent condition, new tyre and belt; £27.—Moon, Camp, St. Albans. [1125

2¾h.p. Twin Motor Cycle, light, low, h.b.c., new condition; £11.—Ford, 107, Churchfield Rd., Acton. [1144

3½h.p. Kerry-Abingdon, free engine model, practically new; £26/10.—91, Melbourne Rd., Eastbourne. [1134

TRIUMPH, good condition, £29/10; free engine, £48/10.—Letter, 65, Drayton Gardens, W. Ealing. [1129

2¾h.p. F.N., spring forks, all accessories, splendid condition; £12.—281, Gladstone Av., Wood Green. [1169

ARNO, 1910, 3½h.p., new condition; photo sent; cheap, £24.—Parry-Jones, 6, Quadrant, Weybridge. [X2153

TRIUMPH, 1910, splendid order, tyres, belt, etc., perfect; £30; no offers.—129, South Lambeth Rd. [X2039

TRIUMPH, 1909, little used, excellent condition; sacrifice £25.—Edge, 123, Holloway Rd., London, N. [X2917

3h.p. Saroléa, magneto, Amac, variable, h.b.c., spring forks, recently overhauled; £16.—56, High St., Boxley. [1028

THE MOTOR CYCLE

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Standard Machines in the T.T.

THE attention of all motor cyclists is this week focussed on that small island in the Irish Sea which by reason of its separate form of government makes it possible for us to indulge in road racing. More than the usual amount of keen interest is being evinced in T.T. events this year, both from sporting and technical views. Single and twin-cylinder machines are for the first time in the history of the race to compete on level terms. Which type will prove the faster? The answer to this query on strictly theoretical grounds would be that the single-cylinder should beat the twin on account of alleged extra internal friction in the case of all multi-cylinders. This year the races will prove real "battles of the cylinders," but whichever type comes in first the importance of the human element must not be overlooked.

An outstanding feature of this year's T.T. models is that with very few exceptions they present no, or very few, novel features. In a sense this is as it should be, for after all the function of the races is to promote and encourage the standard touring machine, but it is only natural that such a classic event has come to be regarded as the testing ground *par excellence* for future models, so that in the past as much interest has been taken in new departures in design and minor mechanical novelties as in the races themselves. *Tempora mutantur*, however, and it would be absurd to expect to-day the same results from what is largely private enterprise as were obtained when practically the whole force of the motor cycle trade was concentrated in achieving something that should make some particular name famous.

The industry has settled down into a comfortable state of energetic prosperity which inevitably and invariably spells a disinclination to get off the beaten track. Whether the motor cycle of to-day is sufficiently perfect to stand, as it were, upon its own wheels, supported entirely by its own merit, whether the state to which the industry as a whole has attained is impregnable to the attacks of revolutionary design, remains to be seen. The point which we are wishful to bring forward is that to all appearances this year's Tourist Trophy will be more upon the lines of a "standard machine race" than ever it has been before.

To many this state of affairs will be eminently satisfactory—as for ourselves, the pointers which the past has disclosed lead us to think that matters might have been better. Progress in any mechanical enterprise is without exception accompanied by the bringing forward of *outré* ideas, things promising and things hopeless. Together they must all go into the melting pot of experiment and trial, and we have always thought that, in providing such a melting pot, the T.T. performed its most useful and valuable function. It may be that this year all the new ideas to be tried are destined to emerge successfully, and it is a pity that there are not more of them.

To quote only one example, last year's races proved the undoubted advantage of change-speed gears, and, without the publicity they gained in those contests, they certainly would not have been purchased this year with the same avidity. They literally came, saw, and conquered, although change-speed devices had been exploited for years previously with comparatively only moderate success.



BALBUS . . .
AND HIS WALL

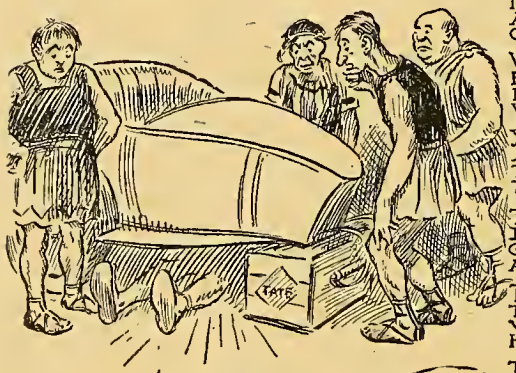
(Balbus murum aedificabat."
Latin Grammar.)

BY Fred Gillett.

"Balbus was building a wall."
This sentence we all had to stammer
With doubtful sense of imperfect tense
In the days of our Latin Grammar.

In building of murums or walls
This Balbus was second to no man.
He was, although mythic and paleolithic,
A really industrious Roman.

That sentence "was building a wall"
Is apt to mislead and bewilder,
And make one suppose that Balbus in those
Old days was a mere jerry builder.



With notions of mortar and bricks
His skill we are apt to disparage;
Let me state, once for all, that Balbus's "Wall"
Was an experimental tri-carriage!

You have it. The secret is out.
Although you receive it with mockery;
That Wall was an air-cooled Roman-bath-chair,
Not a common or garden-wall rockery.

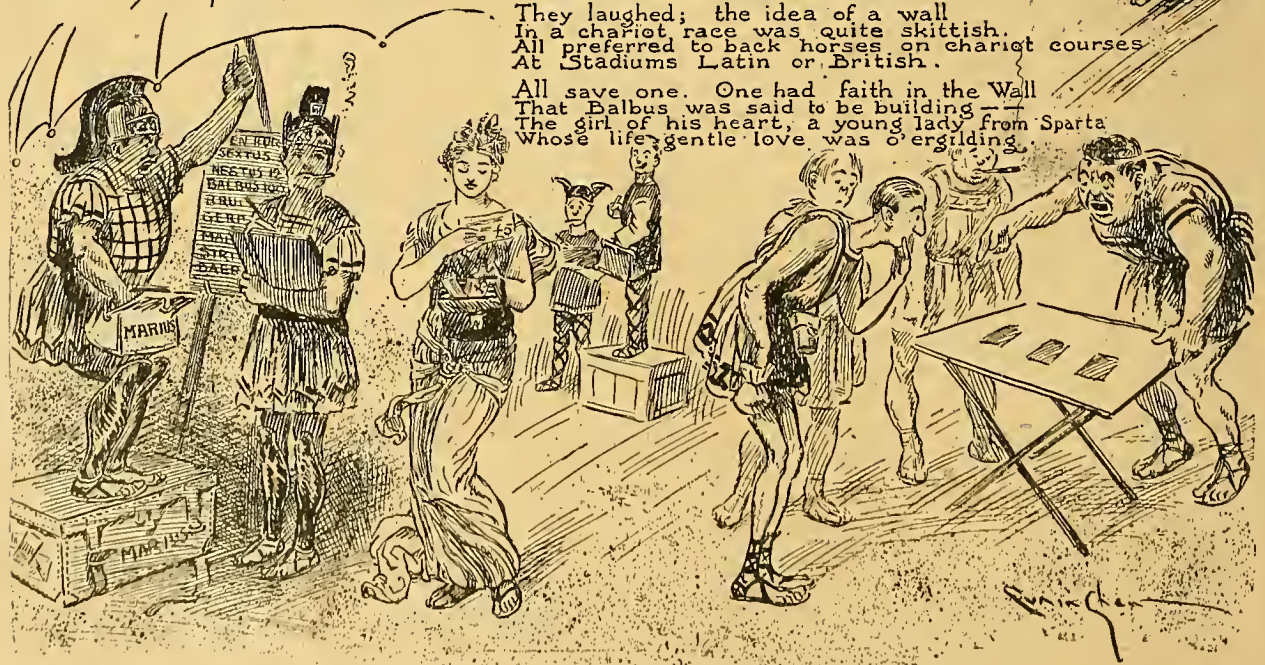


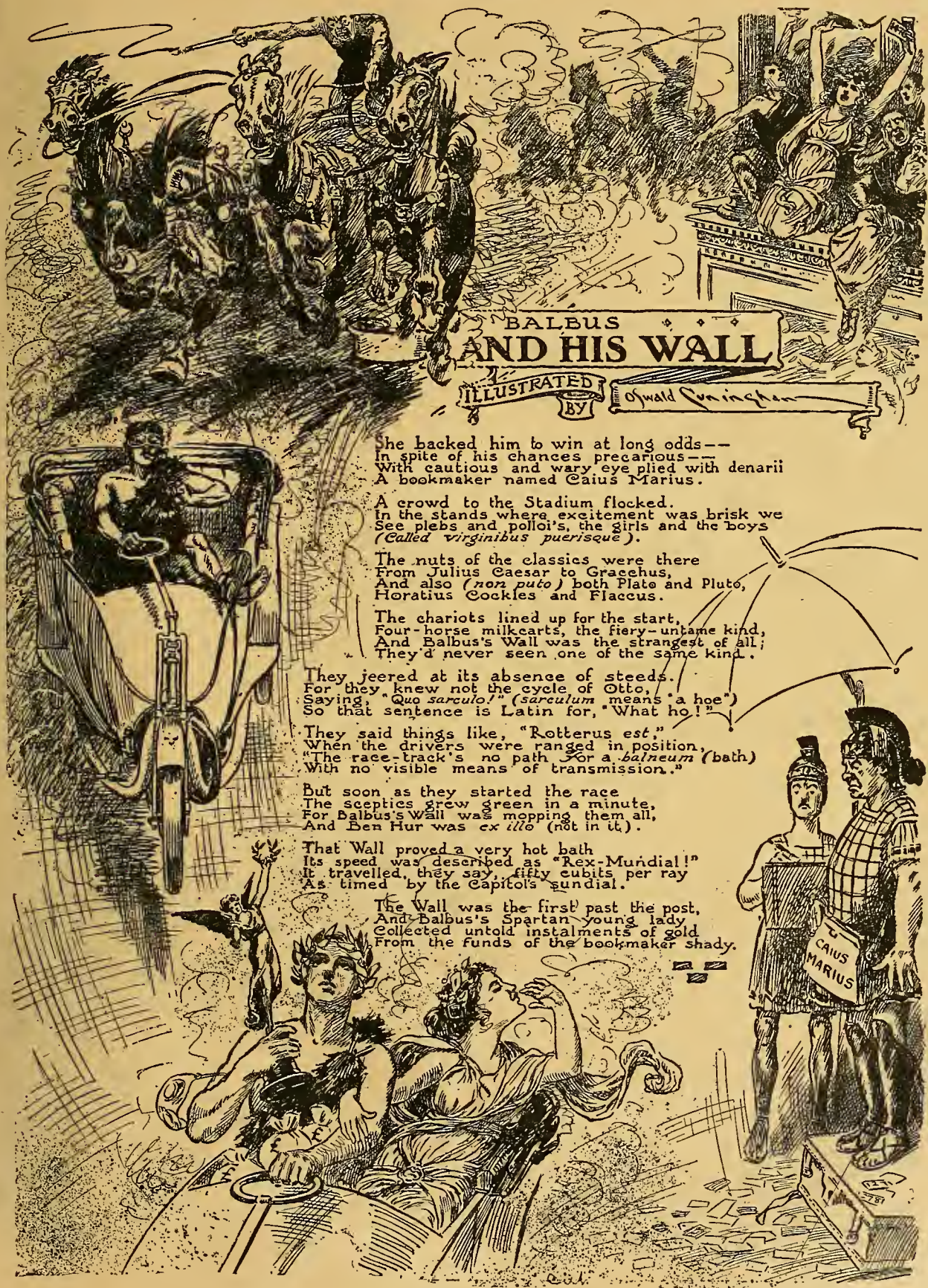
The secret was rumoured about
By whispering tongues and hushed tonsils
Of aediles and lictors and olive-crowned victors
And amateur - also pro-consuls

That Balbus was building a Wall!--
The Forum and other old places
Were full of the news that Balbus would use
His wall in the chariot races.

They laughed; the idea of a wall
In a chariot race was quite skittish.
All preferred to back horses on chariot courses
At Stadiums Latin or British.

All save one. One had faith in the Wall
That Balbus was said to be building--
The girl of his heart, a young lady from Sparta
Whose life, gentle love was o'ergilding.





BALBUS AND HIS WALL

ILLUSTRATED BY Oswald Cunningham

She backed him to win at long odds——
In spite of his chances precarious——
With cautious and wary eye plied with denarii
A bookmaker named Caius Marius.

A crowd to the Stadium flocked.
In the stands where excitement was brisk we
See plebs and polloi's, the girls and the boys
(Called virginibus puerisque).

The nuts of the classics were there
From Julius Caesar to Gracchus,
And also *(non puto)* both Plato and Pluto,
Horatius Cockles and Flaccus.

The chariots lined up for the start,
Four-horse milkcarts, the fiery-untame kind,
And Balbus's Wall was the strangest of all;
They'd never seen one of the same kind.

They jeered at its absence of steeds.
For they knew not the cycle of Otto,
Saying, "*Quo sarculo!*" (*sarculum* means "a hoe")
So that sentence is Latin for, "What ho!"

They said things like, "Rotterus *est*,"
When the drivers were ranged in position,
"The race-track's no path for a *balneum* (bath)
With no visible means of transmission."

But soon as they started the race
The sceptics grew green in a minute,
For Balbus's Wall was mopping them all,
And Ben Hur was *ex illo* (not in it).

That Wall proved a very hot bath
Its speed was described as "Rex-Mundial!"
It travelled, they say, fifty cubits per ray
As timed by the Capitol's sundial.

The Wall was the first past the post,
And Balbus's Spartan young lady
Collected untold instalments of gold
From the funds of the bookmaker shady.

CAIUS MARIUS



Jake de Rosier.

It would be a kindly act if some leading motor cyclist would organise a subscription for poor Jake de Rosier among the riders who congregate at Douglas for the T.T. races. The old warhorse is still lying in hospital at Los Angeles with a compound fracture of the thigh and a crushed kneecap, and he will never straddle a motor cycle again. He is in such poor circumstances that his young bride has to go to work to earn her own living. Benefits have been held for him, but the proceeds so far have been rather poor. His presence added such interest to the last T.T. races, and his riding there and at Brooklands, excited such admiration that any effort on his behalf would certainly enlist sympathy.

A Criticism of the Decompressor.

A rider who has prolonged experience of an engine fitted with a decompressor informs me that in extended use he has one criticism to pass on these handy fitments. After the engine has done, say, 1,000 miles, he finds that it no longer develops sufficient power to effect a start with the decompressor in action. The engine will start, but it "wuffs" along feebly, and as soon as the rider mounts the machine stops before he can throw the decompressor out of action. He suggests that the misbehaviour is due to pitted valves or other compression leaks, still further depleting the power developed.

A new idea requires all-round criticism, but this experience is no argument against the decompressor as such. Two logical consequences result from it. One is that all engines deserve a little attention after 1,000 miles; the other is that the ideal decompressor should be adjustable, so that the deliberate leak can be reduced, when involuntary leaks set in.

There is one adjustable decompressor on the market, and if my correspondent possessed it, he would be able to start on it however badly his engine had lost tune, for he would balance the increasing involuntary leak by reducing the voluntary leak. Probably most experienced riders have at one time or another ridden machines which have so far lost their compression that they could be started at a walk without raising the exhaust valve. If so, they can imagine the delights of using a good decompressor.

Let me add that I have tested a decompressor engine on two occasions at the end of a week's ride of 500 miles, and the distance travelled had not in either case affected its efficiency.

The Six Days' Trials.

No effort should be spared to make the Six Days' Trials as pleasant a jaunt as possible for the competitors, without reducing their severity. If we consider only the sordid aspect, *i.e.*, the question of advertising the pastime, it is in the makers' interests that as many amateurs as possible should compete and succeed.

Three main features have in the past acted as deterrents to amateur entrants, viz.—(1.) The unsatisfactory nature of the hotel accommodation, both at the night stops and at the luncheon intervals. (2.) The crowding and jostling at sectional controls, often coupled with inaccurate watches, and rude or unbusinesslike marshals. (3.) The miserable character of the replenishment supplies, two boys with two funnels and two measures often having to supply fifty or sixty men against time. If Mr. Loughborough desires to maintain or increase a large amateur entry he should consider every possible reform in these directions, especially as the stiffened regulations, however essential, diminish the enjoyment of the ride.

The hotel problem can only be solved according to circumstances; there is, however, certainly room for improvement.

The section controls could easily be eliminated altogether if two or three car loads of skilled officials tested the running against time without warning several times a day. With a sufficient number of smart officials, and large number-plates, card-signing becomes gratuitous.

The replenishment supplies might be very simply improved. Funnels could be provided, and measuring done away with altogether by charging each competitor a fixed sum, depending upon the weight and capacity of his machine, for his week's fuel, and closing the yard to all non-competing machines. I hope further that steps will be taken to prevent competitors utilising garages and repair shops; last year the Harrogate repair shops worked early and late, because no attempt was made to enforce this rule.



PRACTISING FOR THE T.T.

A. H. Alexander, the young Scotchman who rode a water-cooled Rex in last year's Senior Race, and will this year ride a 3½ h.p. two-speed twin Indian. He is seen negotiating Quarter Bridge.

A LADY NOVICE'S TRIP TO NEWCASTLE.



WITH a fortnight's experience of motor cycling and motor cycles, I started alone on a tour from Macclesfield to Newcastle-on-Tyne and back. It was a dismal Friday morning, and many unpleasant prophecies of relatives rang in my ears as I set off at 10 a.m., but after the first dozen miles, over known roads on top speed, all these were forgotten. Monksheath, Chelford, and Knutsford flashed by, and I had visions of reaching Newcastle that same day; but this happy state of things did not last long.

Outside Warrington, with a spasmodic jump or two, the engine stopped. I had not the vaguest idea where the trouble lay, so I just sat in the hedge and tried to recollect all the theory I had learnt during the last fortnight, but the stray bits that memory recalled were of no avail—I could not locate the trouble. A passing motorist came to my assistance, and yet another did his best, but both were nonplussed, for everything seemed in excellent order. Then another—bless him!—came along, and diagnosed "No petrol." By this time I felt about as tall as sixpennyworth of coppers, and I very meekly followed my guide to his own garage, where a new store of petrol set me once more on my journey. With a tut-tut-tutter I started for Preston. The roads here I found not so bad as they had been painted to me. The setts in Chorley *might* have been worse; anyway I managed to retain my seat.

Preston I reached at one o'clock, and stayed there to visit friends, so it was five o'clock when I resumed my journey. To Lancaster seemed a very short distance; the road is a glorious one, and I again tried top speed, but, thinking of the speed limit, I regretfully throttled down. Great was the interest my mount excited, and innumerable were the questions asked about it.



The writer, Miss Gertrude Gordon, and her 2 h.p. three-speed Humber.

About 6.30 p.m. I reached Lancaster, where I stayed the night, having no intention of travelling after lighting-up time. I had done over seventy miles, but was not at all tired, so after a good tea and supper combined and a much-needed wash, I attempted the sights of the town.

Fine Scenery and Hilly Roads.

On Saturday morning I started from Lancaster at 9.30. A kind policeman directed me the wrong way, but eventually, after much meandering, I reached Kirkby Lonsdale. It was a lovely day, and the scenery round was magnificent: on the left the sun glinted on the long slopes of the Cumberland Hills, and on the right the clouds dispersed on the dark tops of the Pennine Chain. All the time I travelled on my second speed, promising myself top speed later—always later. I was fairly among the hills, and although the machine was driven in a shockingly amateurish fashion, every hill was taken without a hitch or falter.

At the Devil's Bridge, outside Kirkby Lonsdale, I missed the turning and took a fearful road, greasy and hilly, and, to my misfortune, continued for a mile before I discovered my mistake. This part of the journey is very vividly impressed on my mind. From Sedburgh the road practically winds through the



Miss Holdsworth, of Wakefield, Yorks., who, though young in years, is a skilful manipulator of her 2½ h.p. two-stroke Levis.

A Lady Novice's Trip to Newcastle.—

Pennines up the valley of Ravenstondale, but my motor cycle was running beautifully, flying along the level, and not toiling up hills.

At Brough I again took a wrong turning, and went miles out of my way. Then through Brough over moorland tracks that were not too bad for motor cycling. Up every hill went my little Humber, on top speed now, for I could see signs of not reaching Newcastle-on-Tyne by lighting-up time. With a wind behind that added another h.p., I flew along. It was grand! After Barnard Castle all my faculties were concentrated on the milestones flying past. Of Darlington and Bishop Auckland I have confused impressions of a crowded market place, with much dodging of slippery cabbage leaves, and of a tremendous hill; but I really cannot now distinguish which was where.

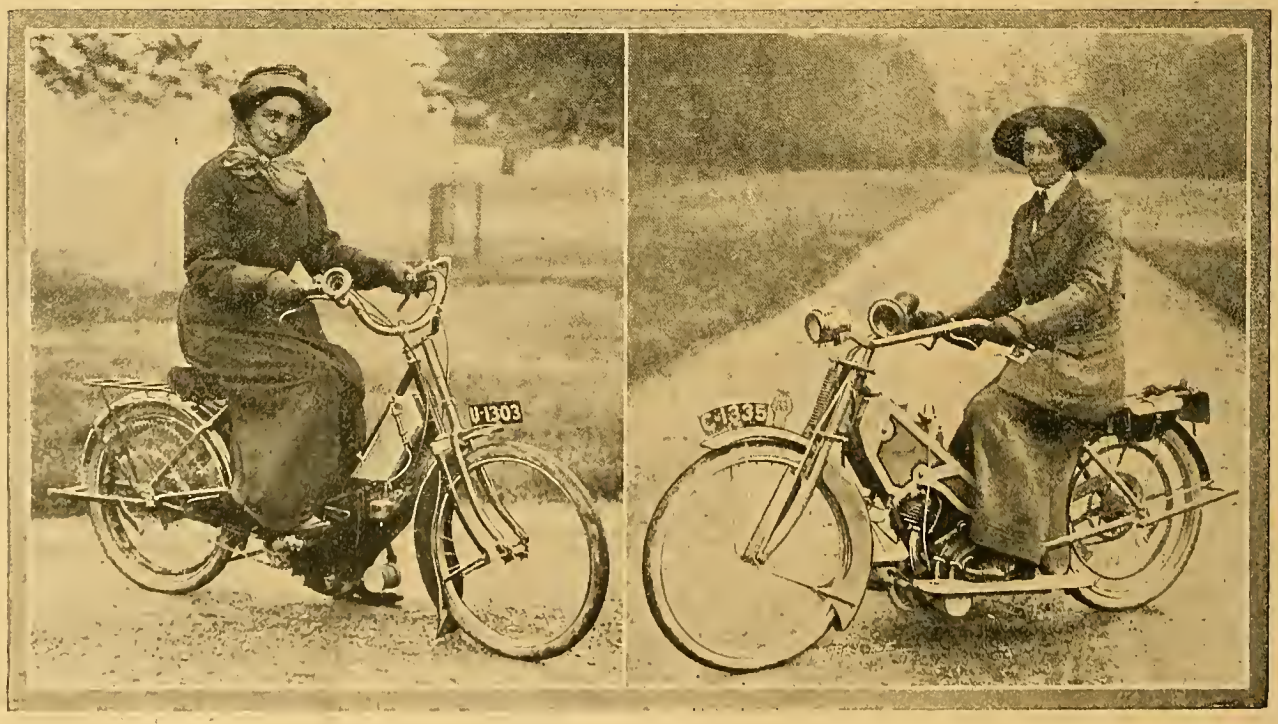
Outside Auckland I rounded a bend and found myself in a pond which stretched right across the road. There was a foot bridge for cyclists and pedestrians, but I did not see this in time. My skirts got wet and the cylinder spluttered, but nothing more exciting happened. On went my gallant little steed. The finger posts now hinted at a remote Newcastle, and my whoop of joy can be imagined when, at Neville's Cross, a definite "Newcastle 18 miles" came into view. This way I skirted Durham. When two more milestones had been passed I discovered that I must return to Neville's Cross garage, for in my haste and excitement I had ridden away without paying for a refill of petrol.



An interesting 2 h.p. lady's lightweight, built with a Moto Reve engine and special low frame. The machine weighs just under 100 lbs., and the saddle is supported on a spring pillar. The owner is Miss Ethel Drury.

At Birtley there was a procession, or football match, or meeting of strikers, or something, which necessitated the whole population turning out, and, to my embarrassment, I received a great amount of notice. Many people ran after me to see my machine mount the hill out of the town, and I nearly spoilt the ascent by again badly manipulating the levers.

Perhaps lady motor cyclists in the North are few, for at Chester-le-Street and Gateshead the same lively interest was evident. Once Gateshead was reached the very tramcars said



YORKSHIRE LADY MOTOR CYCLISTS.

Mrs. Hinchcliffe, of South Hemsall, with her 2 h.p. Motosacoche. Miss Andrews, of Ackworth, who rides a 2½ h.p. Enfield

A Lady Novice's Trip to Newcastle.—

"Newcastle," and I was so excited that I hardly knew whether I was sitting or standing on the saddle. My one idea was to rush and wire home, "I've arrived." When I reached the Tyne bridge the traffic was rather congested, and, just as I thought I was fairly through, the hand of the law stopped me. Again I was unconsciously cheating, for there is a halfpenny toll to pay before crossing. Through countless pockets I searched for the required coin, while pedestrians were amused, the policeman annoyed, and 'bus drivers angry at being kept waiting. Then, not being too familiar with the working of my free engine clutch—and because he looked so annoyed—I mildly suggested to the big policeman that he should push me off. His look of offended dignity haunts me yet. To save the situation the gatekeeper ran out and officiated. Then across the bridge, through the market place and Grainger Street I rode, and handed in my triumphant wire, "Arrived here on the motor cycle 6.30," and so on to pass a happy week with my friends.

The Journey Home.

The return journey was quite tame compared with the outgoing one. I had decided on the eastern route through the Yorkshire towns, and started from Newcastle on Saturday morning at 11.30. At Chester-le-Street, in trying to manipulate my skirt, I tumbled off and lost about two inches of skin in the argument with the ground, but reached Durham without further mishap.

Here I found myself in the open market place, but had not much time to note its quaintness, being busily engaged dodging stalls and stray cabbage leaves. In hunting for the usual market finger-post I unearthed a policeman, and he set me on the rocky road to Ferryhill, little better than a cinder track.

Northallerton I passed through, and on to Ripon. When only a mile from this town the petrol gave out —this time I knew what was the matter—it was lucky I discovered an injector full of petrol in my pocket, and this amount took me into Ripon. After a delayed lunch and a walk round the town, I started for Bradford, and had only proceeded 100 yards when a sudden stoppage occurred. A multitude of small boys rushed from near and far, but they were disappointed, for after a momentary examination I found that the petrol had not been turned on.



Miss Downie, who rides a twin Forward, is an occasional competitor in the Edinburgh M.C.C. Trials. Her brother (also depicted) is an Ariel rider.

Bad Roads and Setts.

Through Harrogate, with its stiff hills, and on to Shipley I raced. Bradford I reached a little before five o'clock. As it was Saturday the traffic was rather complicated, and so it was 5.30 before I was comfortably going along the Manchester Road to Huddersfield. From now until Oldham was passed I had the greatest difficulty to keep my seat. The setts were something dreadful, and consequently the jolting terrific. At Oldham I stopped for petrol, and such a crowd gathered round that the police had to come and order a "move on."

Manchester's Saturday evening crowds safely through, I started with joy on the last lap, and reached home at eight o'clock, tired but triumphant.

I must add a tribute to my Humber motor cycle, for I was such a raw novice that the machine practically took itself—I merely guided it—and from start to finish I had not the slightest trouble with it. In traffic I had no fear because the cycle is so easily manipulated, and I think that any lady able to ride a push cycle could mount and ride my motor cycle straight away. G.G.



Miss Muriel Hind and the 6 h.p. twin Rex on which she has successfully competed in recent hill-climbs. This intrepid lady rider has ordered a new Rex which she is entering for the Irish End-to-end run, and the Scottish and English Six Days' Trials.

LOST AND FOUND.

We receive many letters regarding accessories, etc., both "Lost and Found," which we are unable to find space for. As these particular matters are of interest to two persons only, viz., the finder and the loser, we keep a list of such articles, and, should we receive a letter from the finder which corresponds to the article lost, the two persons are put into communication.

WHO WILL WIN THE TOURIST TROPHY RACES?

By MICHAEL KIRK.



ARE we going to recover the ashes? Will the graceful figure of slender silver adorn Madison Square Garden or Olympia next winter? Such is the question which is agitating all motor cycling circles just now and investing the racing with such vivid interest, despite the enforced absence of many cracks under the manufacturers' bond. The answer is duplex in nature, and resolves itself into the double-barrelled query, "Can any twin expect to beat the Indians?" and "Can a twin win at all?"

A Weakened Indian Team.

The chapter of accidents is all in favour of a patriotic answer, for the Indian team is distinctly less formidable than it was in 1911. The same machines and engines will be used again with a shortened stroke. Of the riders, poor Moorhouse (third last year) has gone to his rest, and Jake de Rosier (a peril wherever he rode) is lying in hospital at Los Angeles. The honour of the Stars and Stripes will be upheld by Godfrey and Franklin (first and third on time in 1911), J. R. Alexander (eighteenth in 1911), A. H. Alexander, whose last year's machine let him down in the second lap, and J. F. Sirett, who was outed by tyre troubles after a fast-opening lap with his N.S.U. in the 1911 Junior T.T.

Three of these riders have yet to prove that they are tip-top men, so that the main onus of retaining the ashes seems to rest upon Godfrey and Franklin, the former being the more formidable, for he is a born race-winner if ever there was one.

The Twin-cylinder Opposition.

Against this depleted team on America's best, we can pit much the same twin-cylinder strength as last year. Both Colliers are riding, and C. R., naturally the more daring speed-merchant of the two, will not get entangled in the rules a second time, while H. A. can drag extra speed out of himself if any mishap throws C. R. behind him. These dauntless brothers do not appear to be subject to the laws of age and chance as other men are, and they, as usual, will be hard to beat. Mason, the Matchless third string, was a slowish fifth on time last year, but for a *début* his performance was a sheer miracle. He has more experience behind him now, and is taking an exercise canter in the Junior.

Behind this trio come H. H. Bowen (Dot-Jap) and W. H. Bashall on another new mount—a Matchless. Of this pair I used to think that if they could add a modicum of restraint and caution to their unparalleled dash and devil, they would have the finish to themselves. I must confess I have lost hope of Bowen; I question if he has the race-winning temperament. He may lead at half-distance, steadied by years and the approach of matrimony; but I fancy that after a lap or two the old devil will blaze out again, and a reckless corner will once more put him out. Harry Reed has years of experience, and once got home first on a twin. Yet on the whole I think a Collier is more likely to be the fastest twin rider.

The other twins include Holder and Perryman on Blumfields and two Scotts. I should not be surprised if every twin that starts finishes, but I regard the Scotts as the only potential victors in the tail. The Scotts rank as perhaps the very fastest machines in the entry, and their riders are worthy of them. Frank Philipp is in the absolute top flight as a rider, and given a no-trouble ride might win hands down. Applebee was once on the same mark as Godfrey, but he has not enjoyed the same luck, nor has he had such fast machines to ride. If the two-stroke engine can live the pace without giving any trouble at all, the Scotts might head the list, but it has not been "tried out" as thoroughly as the four-stroke.

Applebee's machine gave him trouble of one kind or another in four laps last year, and his other lap was speedy. Philipp put up a record lap before his engine gave up the ghost.

Now we reach the real crux of the race, which I can



Who will Win the Tourist Trophy Races?—

demonstrate by saying that if Jack Marshall were still in his prime, and bestriding a three-speed Triumph, I should plump for him with three stars to win comfortably. For the first time singles and twins are under the same cubical capacity limit. Last year the slight vantage allowed the twins in engine dimensions was partly responsible for Godfrey's licking the speediest single by 20m. 39s. He was only 6½ seconds per mile faster than the leading single.

Moreover, these figures flatter the twins. Not only were the twins given the advantage in engine dimensions, but the best singles encountered a curious amount of trouble, which soon deprived the best single jockeys of all hope of victory; and further, a most regrettable and obscurantist policy entered the fastest and most reliable singles on single gears. The four fastest singles in 1911 were handicapped by single gears, and were penalised in engine size, while the luck of the day brought several petty troubles to the best men who had elected to ride on singles. If a single-cylinder jockey of the first-class enjoys the same luck as the fastest jockey on a twin, nothing can beat him.

Which is the Most Dangerous Single-cylinder?

Unluckily Carvill, who headed the single-cylinder placings last year, has not entered, and Lister Cooper, W. F. Newsome, F. C. North, and B. V. Jones, are not competing. On the book Quintin Smith (8th in 1911), J. R. Haswell (17th in 1911), and J. W. Adamson (4th in 1910), are the most formidable to the twins. None of these, in my opinion, can carry a favourite's confidence. One or two twins ought to beat this pair, though both should finish close up.

Among the newer men we must not forget Hart-Davies. He has weight and *anno domini* heavily against him, but he knows the Triumph engine inside out, is an excellent cornerist, and has more experience of speed work on the road than most men. My doubt about him is whether he can learn at the first essay to average the 50 m.p.h. requisite for victory in the T.T., when all his training has been aimed at an average of 15 or 20 m.p.h. less. He is just such another as J. W. Adamson; the pair are pretty certain to finish, and to finish well up; but younger men may bar them from premier honours.

David Bolton on the Rudge is another magnificent tuner and saddle-sitter, and quite likely to break the lap record. Both he and the Rudge Co. have, however, been unfortunate in the T.T. Race, and I can only wish them better luck this time. If the Rudge is as good in the T.T. as it has been at Brooklands not many will show Bolton the way home.

Now we come to an eloquent mystery! Why is Newman, our hill-climbing crack *par excellence*, not in the Senior race? He is entered for the Junior, and he has a very fast 500 c.c. machine, yet his name is missing from the Senior entry. If Newman had started he would have been a glad draw in any sweep, and might have been made a favourite. Woodhouse, who is riding in the Senior on a Regal machine fitted with an overhead valved Precision, may prove to be the real surprise packet. Further down the list we spy the Singer, which has terrific speed; can it last, and is Mundy smart enough to get it home at the top? Behind this fleet come a host of dark horses, whom nobody expects to win, but, as I said last year, it is high time by the law of averages that a 100 to 1 chance romped home, and nobody would be dumbfounded if for once the veterans play second fiddle.

Summary.

On the whole I expect to see the fastest, luckiest, and best-ridden Triumph win by a slight margin, hunted home by one other single-cylinder, which might change places with it if the Triumph luck is poor. Behind these I should look for a small bunch of twins, including one Matchless and two Indians.

Surprises are most to be expected from Mason, a Scott, Hart-Davies, Bolton, or—especially—Woodhouse. I can only fancy Charlie Collier's chances if all the fastest singles meet petty troubles; though he is facing four good Indians single-handed (since H. A. is slower than he is), I think he only needs a clean run to hold them beat, for he has more experience than Franklin. C. R. is up against the stiffest proposition of his racing life, and he will deserve a terrific ovation if he win through.

The Junior Race.

Prophecies of the Junior Race are indeed "wrop in mistry." There are plenty of dark horses, but the quality of the known men is too good for an outsider's victory to be seriously expected. P. J. Evans should start favourite, and his runaway win last year on the Humber was tremendously convincing. First and foremost he has got to beat Newman, the best road sprint man in England to-day. If the change-speed gear on his Ivy-Precision stands up (this is its racing *début*) and Newman's stamina is equal to his devil, we need look no further for the winner. Then there are five Douglas and five Humber machines on the list. These are *par excellence* reliable medium-weights, and a sample of the Douglas did 56½ miles in the hour on Brooklands the other week, so that Kickham and Bailey have actually had the impudence to challenge the big machines in the Senior event. There is a tone of healthy confidence about this policy, and the Australian, Bailey, is undoubtedly a terror.

H. J. Cox, too, who finished third on a Forward last year, must not be overlooked. Hugh Mason will nonchalantly regard the ride as a picnic after his experience in the 1911 Senior, but who knows the capabilities of his "$2\frac{3}{4}$ h.p. Newcastle-on-Tyne"? The Alcyon is a fire-eater, and Slatter is not the man to let it rust under him.

W. Creyton will be out on a Humber, and will be sure to ride to finish as a placed man; he is on his native heath in the Island. The Singer trio are known to be as fast as the wind, with Mundy the probable leader. Any of the entry might win if misfortune overtakes Evans, Newman, and Bailey. I plump for a furious duel between Evans and Newman, with Bailey, Mason, Slatter, and Creyton close up.

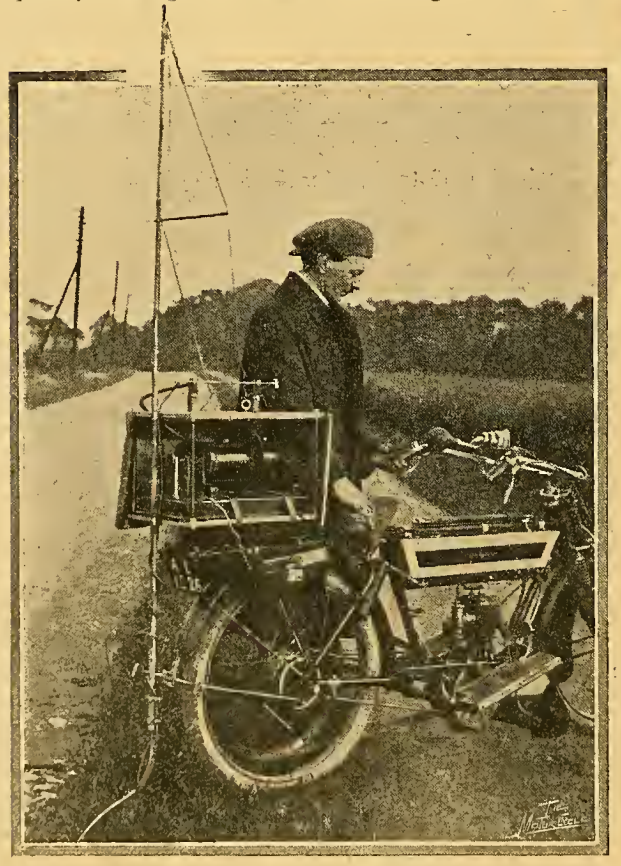
The Basballs (J. T. on a Humber and W. H. on a Douglas) might create a surprise, but I question whether either of them can yet be as "*au fait*" with a small twin as they are with a big J.A.P. The openness of the race consists in the limited numbers of the real class cracks engaged, and, with Evans and Newman outed, it might be a real lottery. In any case it will provide a zestful "*hors d'œuvre*" for the big race on the Monday.

Wireless Telegraphy on a Motor Cycle.

A FEW PARTICULARS OF A SUCCESSFUL EXPERIMENT.

SOME experiments have been made by Mr. G. F. Campion, of the Campion Cycle Co., Ltd., Nottingham, in sending messages by wireless telegraphy from a motor cycle in motion, with very successful results.

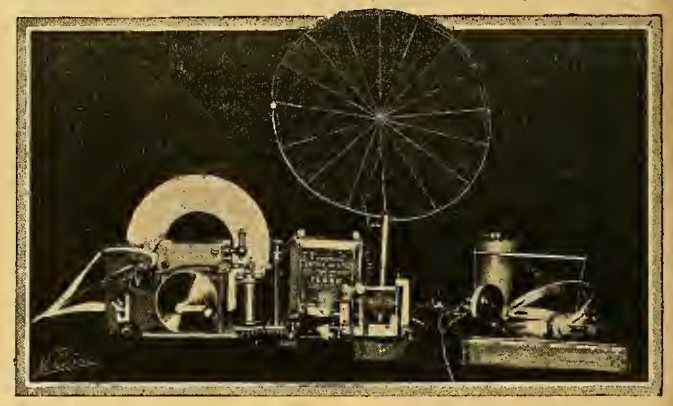
Naturally the transmitting apparatus, which is attached to the carrier of the motor cycle, has to be of the simplest possible nature, also while the machine is being ridden the aerial must be strictly limited in height, but as this is adjustable, being, in fact, composed of a certain number of lengths of fishing rod, it can be lengthened when the machine is stationary, and consequently messages can be sent to a greater distance,



G. F. Campion and the wireless telegraphy apparatus attached to his motor cycle.

the height of the aerial being one of the determining factors of the space which it is possible to cover. It is obvious that when the rider is on the move a tall attachment is out of the question, because it might foul the branches of trees, telegraph wires, or any overhead obstruction, and cause an accident. A message was successfully sent from Loughborough to Nottingham while the machine was travelling at the rate of thirty-five miles per hour, a distance of about fifteen miles. This is quite sufficient to prove the practical use of the instrument, though it is by no means its limit. We understand that messages have been sent as much as thirty miles.

Of course, as a motor cycle runs on rubber tyres and is thus insulated, a special earthing contact is



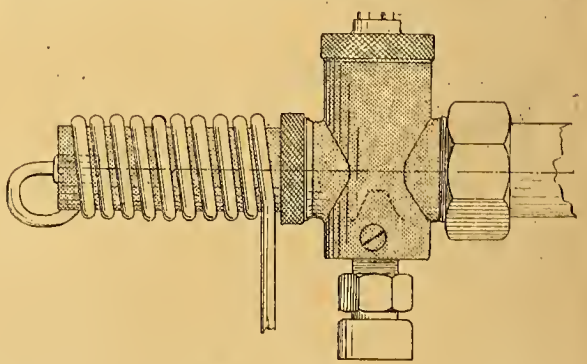
The receiving apparatus.

required. This is clearly shown in our first photograph, in which the transmitting apparatus can be seen fitted to a Campion motor cycle; the earthing contact trails behind, and is kept firmly pressed against the road surface by a spring. Our second illustration shows part of the receiving station.

The many uses of such a contrivance will be obvious to anyone, and we need not enlarge upon them here. The possibility of sending messages in this way will be of immense use in military work, such as scouting, etc. Also, in days to come, our reporter in the T.T. races and other events can record his impressions still vivid in his mind while actually following the competitors: thus an account can be in print almost as soon as the event is finished!

THE MARTIN AUTOMATIC EXHAUST PRESSURE PETROL FEED.

The accompanying illustration renders this ingenious device practically self-explanatory. The exhaust gas enters a spoon receiver inside the exhaust pipe, passes through four coils, then through ten coils round the main air intake and enters behind the jet, helping, so the inventor claims, to vaporise the petrol and greatly increasing the air draught. By the time



the exhaust enters the air intake it is practically cold. It might be thought (at first sight) that the exhaust gases would interfere with the carburation, but we hardly think that the latter would be affected, as there is a large amount of air rushing in behind to nullify any evil effect there might otherwise be.

Five up Edge Hill on a Rex Sidette.

Hill-climbing Extraordinary.

QUITE a happy little band of sidecarists assembled at Edge Hill, Warwickshire, last week, the why and wherefore being a demonstration of the hill-climbing qualities of the 6 h.p. Rex Sidette. We were proffered a model of that brand for our journey to the hill, and accordingly tacked on to a fast moving line of sidecars *viâ* Kenilworth, Warwick, Barford, Wellesbourne, Friz Hill, and Kineton. Though fairly severe there is nothing on this route to tax the energy of the latest Rex. At Kineton there was a council of war as to the first demonstration of the general advance made in Rex machines—for such was the purpose of the outing. We were six sidettes and two bicycles all told. There were Mr. and Mrs. Hall, Mr. and Mrs. Lloyd, Mr. and Mrs. Geoffrey Smith, Miss Muriel Hind in R. Lord's sidecar, Mr. Guest, Mr. Edward Gorton, our photographer, and three assistants from the works.



R. Lord climbing Edge Hill with four passengers—five in all. Three days later he made the first ascent of Bwlch-y-Groes, Dinas Mawddwy, with a sidecar and passenger.

Edge Hill is approximately four miles from Kineton - we suggested that an attempt should be made to climb this noted 1 in 7 acclivity on the run with hot engines. Accordingly we set out first, and having reached the hill summit without real difficulty, despite a top ratio of 4 to 1, we turned to watch the performances of the others. Suffice it to say that five of the six got to the top at the first attempt, Lord using his high gear most of the way. It was clear, therefore, that Edge Hill was quite an ordinary test for a 6 h.p. Rex, so some extraordinary method of determining what a Rex could not do had to be resorted to. Four passengers were suggested, so Dick Lord tried his luck and got to the top so easily and without the engine showing signs of distress that still another passenger was piled on board. With the low gear engaged he commenced the climb with a human freight of no less than 57 stones 5 lbs. Slowly the machine progressed upwards, but never once did it falter, and Edge Hill is no child's play, for it is quite threequarters of a mile long. If doubt ever existed in the minds of anyone regarding the pulling powers of the 1912 model 6 h.p. m.o.i.v.-side by side valve Rex, this performance should banish it, and the feat must rank among the best exhibitions of the kind to date. It might further be added that Lord's machine is not abnormally low geared, but is the same two-speed machine on which he has competed in nearly all this year's long-distance reliability trials.



The Rex party at the Round Tower at the summit of the range of Edge Hills.

The Riders of Solo Mounts.

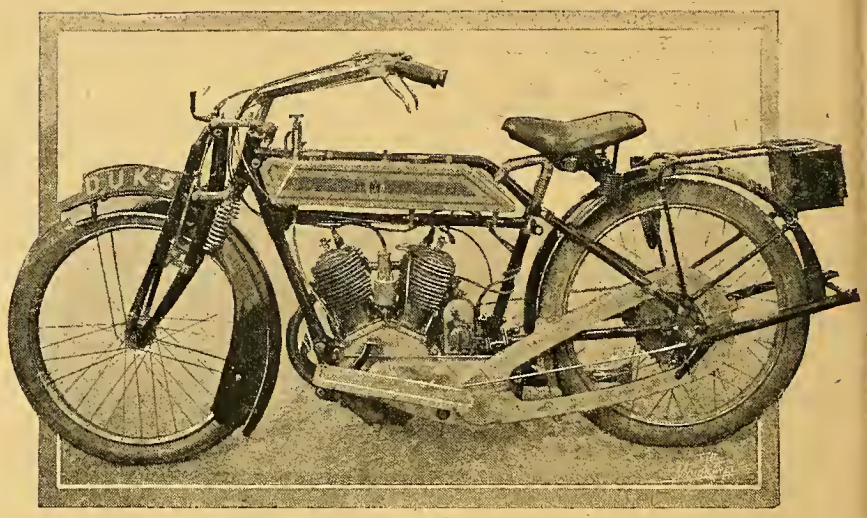
An interesting change was provided by Miss Hind making an exhibition climb on her 6 h.p. hill-climber. She rounded the bends in most fearless style, leaning over at a great angle, and finally flashed over the top at over forty miles an hour. Phew! This was speed with a vengeance! We very much doubt if any lady has been catapulted up Edge Hill in quicker time. Though our views may differ on the subject of ladies racing, we take our hat off to Miss Hind as the most skilful and daring lady motor cyclist in the country.

Next to the front was the latest production of the Rex Motor Manufacturing Co., viz., a 6 h.p. chain-driven model, with neat aluminium guards above and

Five up Edge Hill on a Rex Sidette.—

below the chains. The chain from engine to counter-shaft is completely enclosed. This machine made light work of Edge Hill on top gear, and we ourselves rode the machine up, never once dropping below 30 m.p.h.

The party having satisfied their hill-climbing mania without succeeding in putting any of the machines out of commission, a move was made to the Round Tower for tea. How delightful it was that lovely June afternoon—a refreshing *al fresco* tea, magnificent views all along the range of Edge Hills, of the Vale of Evesham, Bredon, and Malvern Hills, and home again refreshed in body and mind, with a firm conviction that the present year's Rex is streets ahead of anything we have previously sampled of that make.



NEW CHAIN-DRIVEN REX. The mount illustrated is the first of the new type 6 h.p. chain-driven Rex twins. The front chain is entirely enclosed, the rear chain having aluminium guards top and bottom. This model is an addition to the belt-driven type.

ENGLISH-DUTCH RELIABILITY TRIAL.

THE regulations governing the above international contest will shortly be issued to the competitors, and before the end of the month the hon. secretary of the Dutch M.C.C., Mr. A. Citroen, promises to forward the route cards, number plates, and the exact programme of the "feasts." The Dutch Club will offer to the British team on Saturday, August 3rd, an official dinner in Amsterdam. Next day, which will be spent at Scheveningen, the noted bathing place, there will be an official reception and tea by the president of the Dutch Club, Mr. Rob R. toe Laer.

Monday, August 5th, is the day of the international trial, which starts and finishes in Amsterdam, distance 160 miles.

Tuesday will be spent at Volendam, the well-known fishing town, where there will be an official lunch to the thirty-six competitors, the representatives of *The Motor Cycle* and the Dutch M.C.C. by A.N.W.B Touring Club of Holland.

Special arrangements are being made with regard to the transport of the competitors' machines from Harwich to the Hook, and it is hoped to reserve accommodation at the official hotels in Holland.

It is interesting to know that Dutch entries, though tardy at first, are now sufficiently numerous. The class with the least support was the 500 to 1,000 c.c. trade class, but now there is a Cyclonette, a Coronamobil, and a Phanomobile among the entries.

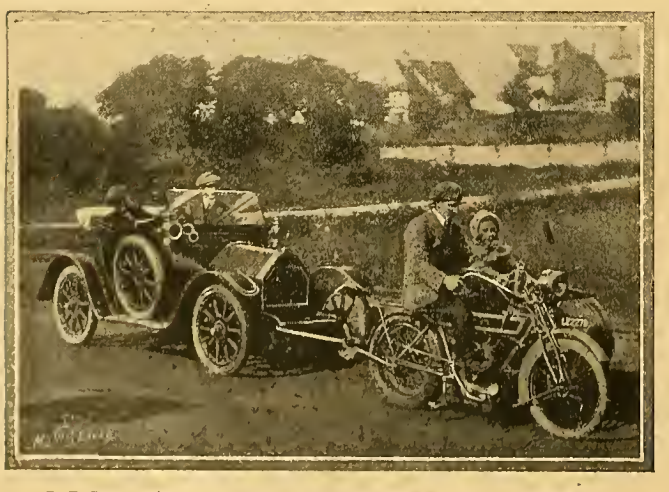
To avoid any possibility of the English team having to start with depleted ranks, it is hoped that two reserves in each class will accompany the teams.

Gordon B. McKechnie informs us that, owing to a fall he sustained in the London to Edinburgh run, he will not be able to attend business for the next six weeks, and therefore will not be able to act as a reserve. The next rider is H. Wallis (Bradbury).

W. H. Wells also finds he will be abroad at the time of the trial, so a reserve man is wanted in his class. R. Lord (6 h.p. Rex sidette) is the chosen rider.



N.M.V. BEKER.
The silver cup to be awarded in the English-Dutch international reliability trial.



R. E. Guest acting the part of the Good Samaritan by towing a stranded car behind his Matchless-Jap sidecar.



A WEEK-END EXPLORING EXMOOR

Some Notable Gradients Discovered

By L. W. Spencer

HAVING recently taken delivery of two 1912 three-speed Rovers, my chum Brooking and myself decided to spend a week end in North Devon testing their capabilities and exploring the country.

The charming and romantic stretch of moor and coast between Porlock and Ilfracombe was the district chosen. Our headquarters we decided to make at the excellent little inn known as the Blue Ball, Countisbury, situated on the edge of Exmoor, overlooking Lynmouth and the sea.

Starting from Uxbridge at ten o'clock on Friday morning, I picked up my chum at Bath, and made off for the West. Leaving Bath by the Wells Road, we turned off over the Mendips and dropped down through the famous Cheddar Gorge to Axbridge. A fast and uneventful ride followed through Highbridge, Bridgwater, and the outskirts of Minehead to Porlock. Here we expected the fun to commence, as we meant trying the famous Porlock Hill on the run, and we had not touched our gears since leaving home. My low ratio was just over 7, and Brookings just over $6\frac{1}{2}$ to 1.

Through the village we hummed; past the old Ship Inn and the Toll Gate Road, which holds so many humiliating memories of the past—including our own!

Porlock Hill on the Run.

Through the trees the old hill seemed to be grinning down at us—thoroughly amused at the idea of being taken on the run by a $3\frac{1}{2}$, or, as some might put it, be "caught bending" after having caught so many on the "bend." Still, nothing daunted, on we went, and popped the low gear in as the first corner appeared.



W. B. Gibb (Douglas) on the second corner of Porlock Hill. In wet weather the surface is covered with thick clayey mud.

Round we swung, wondering whether that corner would ever end. Still the engines never faltered, and in a few seconds we were on the bit of straight road above. Another 200 yards and the road suddenly disappeared again, this time to the left. Round again and what a bend! Still on we went, steadily, surely,



The hairpin corner on the "easy" road to Ilfracombe from Lynmouth *via* Beggars' Roost. A fresh start can be made from a lane to the right.

triumphantly, climbing this terror of the West. A little more and we were up the worst, and then with middle gears in soon reached the top. We pulled up and smilingly shook hands, for Porlock taken on the run with hot engines and home touring gears wiped out many an old defeat.

We were now in the heart of the worst part of the forthcoming Six Days' Trials country, and I might add a note here in reference to the section we had just traversed from Bath to Porlock—not only for the benefit of competitors, but for those who will probably be running over the course before the trial.

Great care should be exercised in descending Cheddar Gorge. There are several very bad S corners—particularly one on the steepest part which sweeps round to the left. To ride this correctly, and if there is much traffic about safely, needs more than ordinary care. The tendency to over-ride the corner and shoot over to the right is almost overpowering. Sidecarists going down here for the first time should make a special note of this.

I should very much like to see the A.C.U. award marks for cornering. There are shoals of motor cyclists on the roads who know nothing about correct cornering, and they are a danger to everybody. The A.C.U. could not get a better place than Cheddar Gorge to experiment in this way.

A Week-end Exploring Exmoor.—

Care should be exercised about two miles from Minehead, as there is a horrible little hump-back bridge on the main road from Bridgwater just opposite the castle which will be noticed on the left. If anybody goes "mopping" over this (*i.e.*, the bridge) all out there will be trouble. Anything over thirty means both wheels off the ground, and that funny "lift" feeling as you come down. The A.C.U. would do well for everyone's sake to erect a special caution board here.

Men "sampling" the district should note that the town of Minehead can be avoided by taking the left turn to Porlock about half a mile from Minehead.

As to Porlock itself one's advice all depends on weather and conditions. If it is dry and the surface good the first corner to the right should be taken wide on the left, and the second in the centre, keeping a nice steady jog between them.

It is useless "rushing" anywhere. The corners cannot be taken at speed, and it will simply be heating up engines to no purpose.

If the hill be wet it is next door to being unrideable, and the greatest skill and care will be necessary.

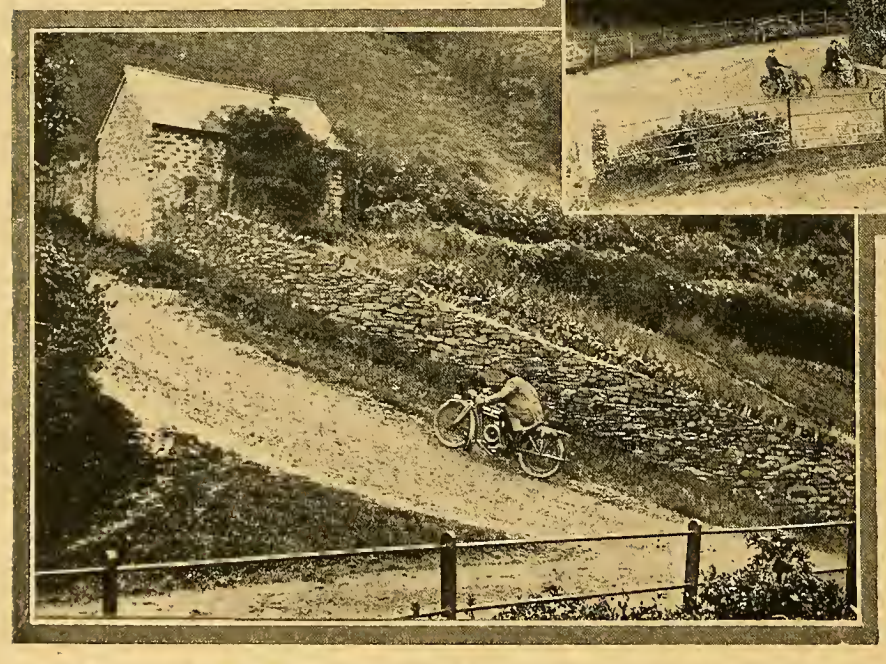
The first corner should then be taken close in on the right and the second corner close in on the left all the way round as near the gutter as you dare go. Don't let the machine shoot out to the right after the first bit of the second corner is taken.

Above all things beware of the slime, and have the finest and newest non-skid on the back wheel.

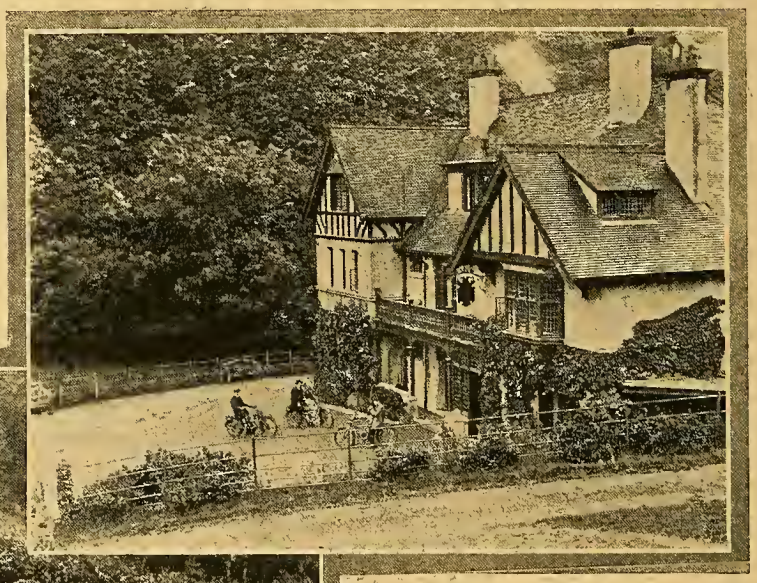
If dry the ordinary rider will find a 3½ h.p. very comfortable on an 8½ low gear.

If wet get the lowest gear the engine will stand—10 to 1 will not be too low, so that you can start anywhere on the clutch after a bad lurch without actually letting the machine stop. The three-speed hubs will be all right if 1in. belts are used, and special belt pulleys fitted which will screw out to the lowest ratio. Most of the ordinary pulleys will not do this, as the flange comes off before you get the bottom ratio.

Men riding the excellent Armstrong gear (as I do) would do well to insist, however, on a bigger back belt rim being fitted or the ratio of gears being altered, as it is cruel to keep the belt at the bottom of the pulley.



Mannicott Hill from Hunters' Inn. The road leading to the left is the coast road which will be referred to in the next instalment.



Hunters' Inn from Mannicott Hill.

After Porlock followed a short sharp run of eight miles over Exmoor, when we found ourselves at the Blue Ball, Countisbury, just after six.

I might put in a Six Days' hint here—mind the turns on this section and beware of sheep everywhere near Exmoor. They lie about like stones and dart right across the road through holes in the banks.

After a welcome meal, we lowered our gears for Devonshire work to a bottom ratio of just over 8 to 1, and slipped down into Lynmouth to try the famous Lynton Hill.

Our second surprise followed, as we soared up it without a falter and with nothing like full power on.

This is one of the "tit-bits" of the Six Days'. Fortunately for us it was dry and in fine condition, but if it should be wet it is worse than Porlock.

The first corner to the left should be taken wide on the right, and the wall on the right hugged all the way up.

Do not rush the first corner, but take it steadily and accelerate as you feel the engine bite. If it be greasy don't force the engine power too much. This is very important, as if too much throttle is put on the sudden acceleration will drag the machine over.

Mind your fingers do not get bruised against the wall.

The Ariel 3½

WITH SIDECAR AND PASSENGER.



IN THE

LONDON—EDINBURGH—LONDON TRIALS

AGAIN DEMONSTRATED ITS ALL-ROUND CAPABILITIES

BEING **AWARDED**

GOLD MEDAL.

WRITE FOR ART CATALOGUE,

ARIEL WORKS (DEPT. 2). **Bournbrook, BIRMINGHAM.**

1910 BAT 1911

BEST AFTER TESTS

Mr. H. H. Bowen on his BAT made the Fastest Time for the Circuit 17 min. 51 sec.

AND

SPEED

IN THE

"T.T."

ARE

INSEPARABLE.

The BAT in the "T.T." Speed Trials, gained FIRST & SECOND places in Class C.

BEST AFTER TESTS

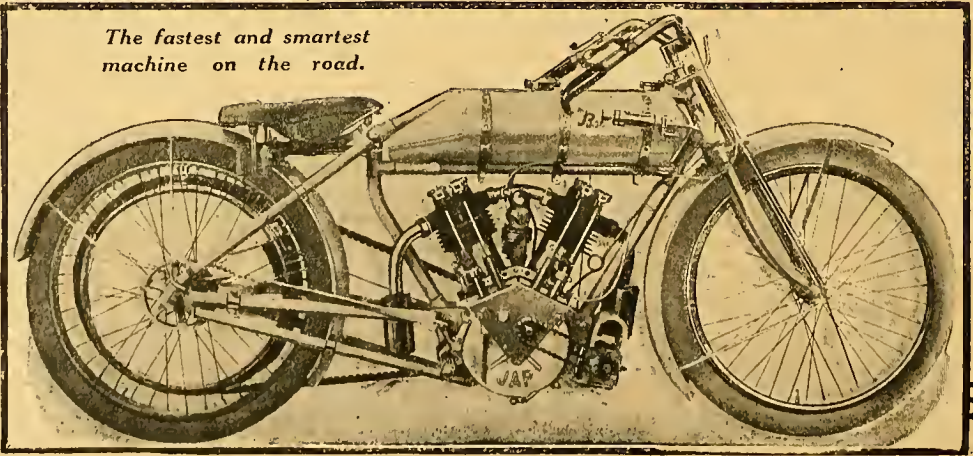
The enthusiastic competition rider knows there are plenty of Club contests in which classes are reserved for "T.T." Models. The "Bat" has proved in the past to be just the mount to gain prizes in such events.

THE BAT "T.T." MODELS can be supplied with Single or Twin Cylinders, fitted with Overhead or Side-by-side Valves, and Rigid or Spring Forks.

1912 "T.T." MODELS.

3½ h.p.	£50
5-6 h.p.	£62
7-8 h.p.	£65

The fastest and smartest machine on the road.



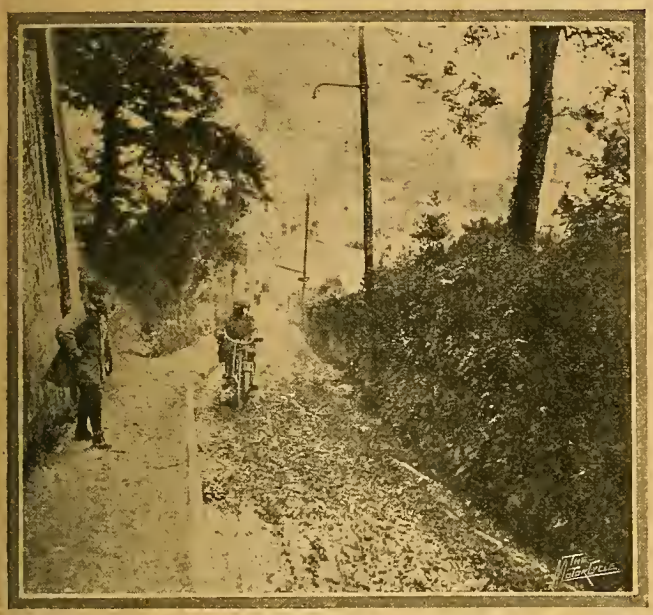
Write for full Catalogue of these and our Touring mounts.

THE BAT MOTOR MANFG. Co., PENGE, LONDON, S.E.

In answering this advertisement it is desirable to mention "The Motor Cycle."

A Week-end Exploring Exmoor.—

After a fill up with petrol at 1s. 7d. a gallon, and a ramble round amongst the waterfalls and houses (which are all mixed up together), we lighted our lamps and essayed the climb up Countisbury in the dark. This



The writer climbing Station Hill, Lynton, on his 3½ h.p. Rover. The photograph gives a good impression of the gradient, showing Lynton below.

once dreaded hill we hardly noticed, and found we could start upon the clutch in the steepest part without fuss or trouble. In fact, of so little consequence did it seem that we went down for a bathe and up again before breakfast!

Countisbury Hill, however, is another that figures prominently in the Six Days', by which time the coaches will have cut it up badly. There is, however, nearly always a very nice little solo track on the left going down, and on the right coming up. Riders should hang on to this like grim death. If you get off this you are almost certain to be stopped. In ascending be very careful not to overshoot the first bend to the right. Take it very steadily on the throttle and keep close to the bank on the right.

Saturday gave promise of another fine day, and our programme was based upon a long cherished wish to explore the coast road between Lynton and Ilfracombe. This road, I had always been informed, was closed to motor traffic on account of its dangerous hills, corners, and surface, and its proximity to the sea. (All mere spice to keen motor cyclists!)

I knew quite well that the coast road going through the Valley of Rocks was closed by a lodge and gate. I had an idea, however, that by going round we could regain it.

First we went up to Lynton, and followed the road right round to the Valley of Rocks. Coming back again we regained Lynton Hill, and turned to the right up the Ilfracombe Road.

Beggars' Roost.

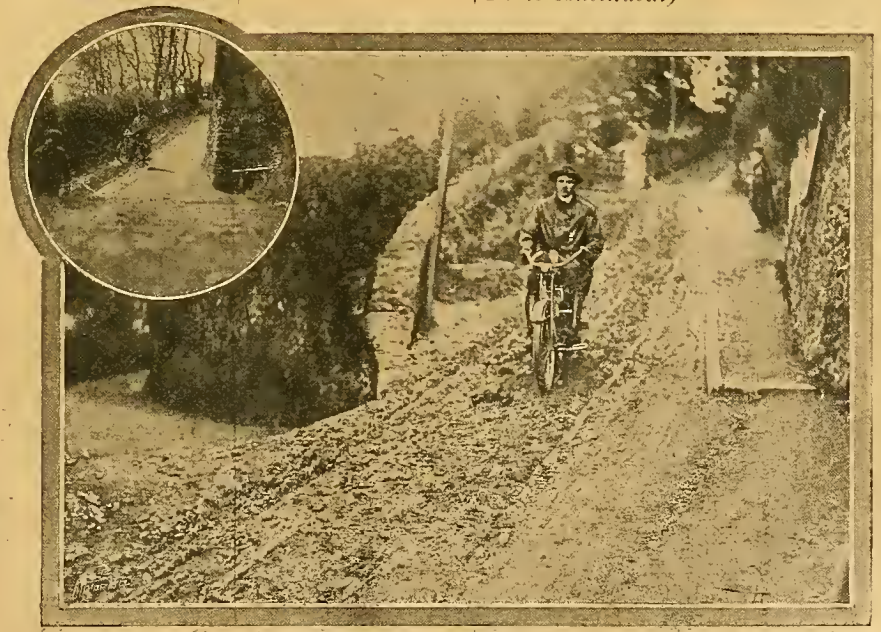
In a mile or so we reached Barbrook and took the sharp turn to the left between some cottages, when the famous hill appeared above us. Taking it in turn to watch the corner for traffic, as the hill *must be taken on the wrong side*, we made clean ascents at the first attempt. Beggars' Roost is, however, a real genuine teaser. Though it has no bad corners, it is more difficult to climb than either Porlock or Lynton. The gradient is awful and positively precipitous, though the hill is quite short, being only about a quarter-mile long. It was easily the worst we had tried so far.

It certainly ought to be in the Six Days', as it is doubtful whether there is a better test hill in the country. There are no bad corners, and the surface is better than Lynton or Porlock. If possible it should be taken all out all the way. There is the usual nice little solo track on the right. Be careful to keep to this at the first bend to the right.

Leaving Beggars' Roost, we returned to the Ilfracombe Road. I might mention that without a variable gear the majority of motor cyclists would have been unable to follow us up Lynton Hill, but there is a fairly easy way round to the top of Beggars' Roost by the Watersmeet Road out of Lynmouth, taking the turn about 3½ miles from Lynmouth to the right, where a signpost says "To Lynton and Barbrook Mill." Follow this lane right to Beggars' Roost, and thus gain the Ilfracombe Road. A warning must be given to those descending this hill for the first time. It should be taken with extreme caution.

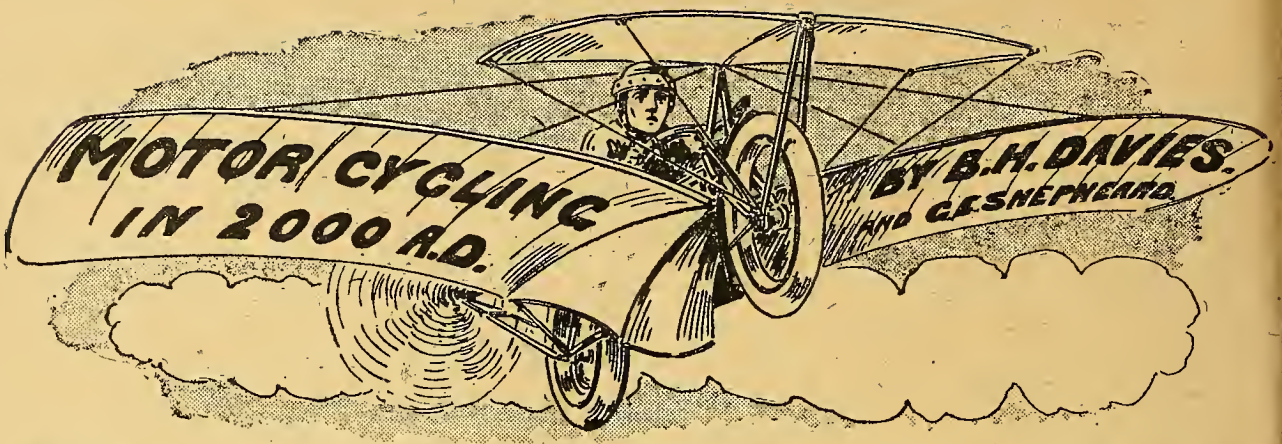
This would make a very pretty alternative route in the Six Days' Trials from Lynmouth to Ilfracombe, which section is apparently to be included twice.

(To be continued.)



DESCENDING STATION HILL, LYNTON.

When the roads are wet and sticky, as on the occasion of the writer's visit, descents of Devonshire hills are often more exciting than the ascents.



THE *Morning Post* asserts that a French professional has "flown" a distance of 3ft. 7in. at a height of 8in. on a "winged bicycle" or "aviette." I ejaculate with Dominie Sampson "prodeegious!" I have "flown" much further on a push bicycle utterly devoid of wings. My best flight on a motorless bicycle up-to-date measured about 20ft. horizontally, and about 15ft. vertically, and any aspiring rider can easily equal it if he has the pluck. Suitable apparatus consist of a steep hill, a blood mare, a boulder, a bridge, a ravine, and a butcher's boy. Arrange the bridge over the ravine, and set both at the foot of the hill. The size and location of the boulder depend upon the limits of the desired "flight." When I set up my record, the boulder was about 1ft. in diameter, and was placed by the side of the road about 8ft. from the bridge. The blood mare and the butcher's boy are not absolutely essential, but in case the aviator's nerve fails him at the crucial moment when the take-off approaches, they have their uses. In my case the butcher's boy drove the blood mare furiously up the hill. The blood mare shied at my machine. In attempting to dodge the blood mare my bicycle hit the boulder, which was suitably concealed in brambles, and in company with my machine I described a graceful arc over the parapet of the bridge, landing somewhat heavily in the stony bed of the torrent beneath. Even as practised with a push bicycle the sport is a trifle expensive. Here is my bill for the solitary flight:


"I have flown . . . . on a push bicycle."

New Beeston Humber roadster, fifteen guineas.
Surgeon's bill, five guineas.
Loss of salary for four weeks, £20.

Owing to a limited income I have not yet essayed the sport on a motor bicycle, but I estimate that its costliness will rise in a ratio depending upon the speed and price of the motor cycle employed.

Many expert aeronautical engineers assert that the muscular powers of a human being cannot be so applied as to produce the horse-power requisite for sustained flights without the aid of at least a lightweight engine. These doubters would, of course, describe my own record and the French professional's petty *vol plané* as a "hop"; but the fact that the French Aero Club has offered a prize of 2,500 francs for the best flight, and that 198 entries have been obtained, looks as if two opinions on the subject were tenable.



The Auto-aviette.

I commend the notion to British designers, as possessing certain obvious advantages, and lest these should escape general notice, I beg to draw attention to one or two obvious superiorities of the winged motor cycle, which may be provisionally christened the auto-aviette.

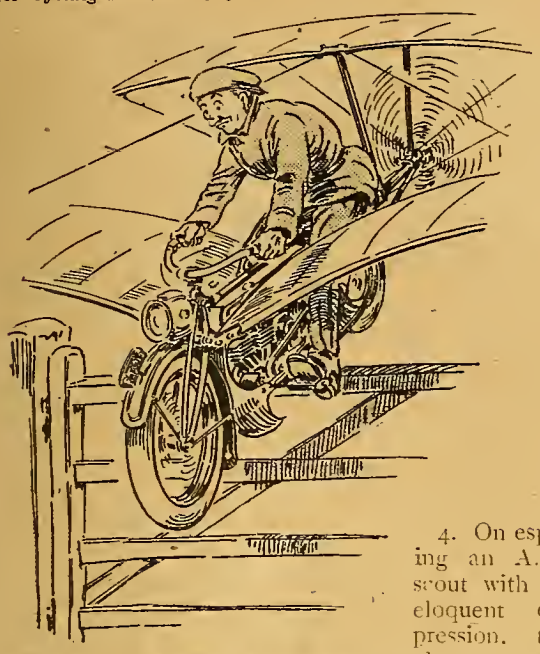

"The machine will pass over the police trap."

1. On sustaining a puncture, the auto-aviette's wings will be unfurled by operating a Bowden lever, and the machine will fly gracefully to the next garage.

2. On encountering a patch of dangerous grease or a stretch of unrolled metal, a short flight will instantaneously surmount the obstacle.

3. Hairpin bends will lose their terrors; instead of risking the dangers of "leaning the machine in and the body out," a hop of not more than fifty yards will land the machine on the straight immediately above the bend.

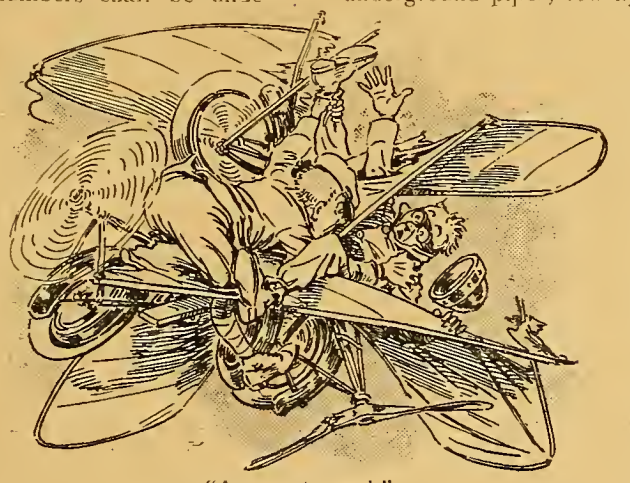
Motor Cycling in 2000 A.D.—



"A short hop . . . . . will nullify a tiresome obstacle."

4. On espying an A.A. scout with an eloquent expression, the elevator will be tilted, and the machine will pass over the police trap at such a height that its registration numbers shall be undecipherable.

5. If, when taking your second-best girl out in the sidecar, you sight a female in the distance who looks suspiciously like the best girl, the entire outfit may be raised sufficiently high for the planes to conceal the sex and lineaments of your passenger; this procedure will avoid exhausting and tearful recriminations.



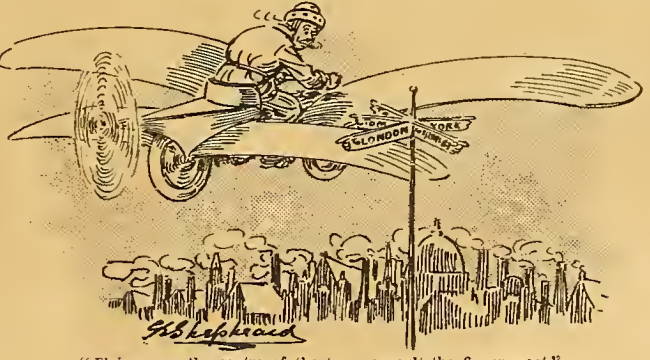
"A very pretty smash."

6. The opening of gates on the villainous mountain roads lately so popular with trials organisers will be completely unnecessary. A short hop on quarter throttle will nullify a tiresome obstacle.

7. A new rule of the road may be required to avert novel possibilities of accident under the new conditions, for should two auto-aviettes meet round a blind corner, and both simultaneously rise to the same height, a very pretty smash would follow. A precautionary rule could, however, simply be arranged. I am advising the Local Government Board to rule that "auto-aviettes going south or west hold the road in emergencies, auto-aviettes going north or east lift." Perhaps the new secretary of the A.C.U. will give the matter his best attention. I am ardently looking forward to the decrease of the cattle nuisance when I get delivery of my machine. Traffic stops in non-stop trials will no longer be a cause of friction.

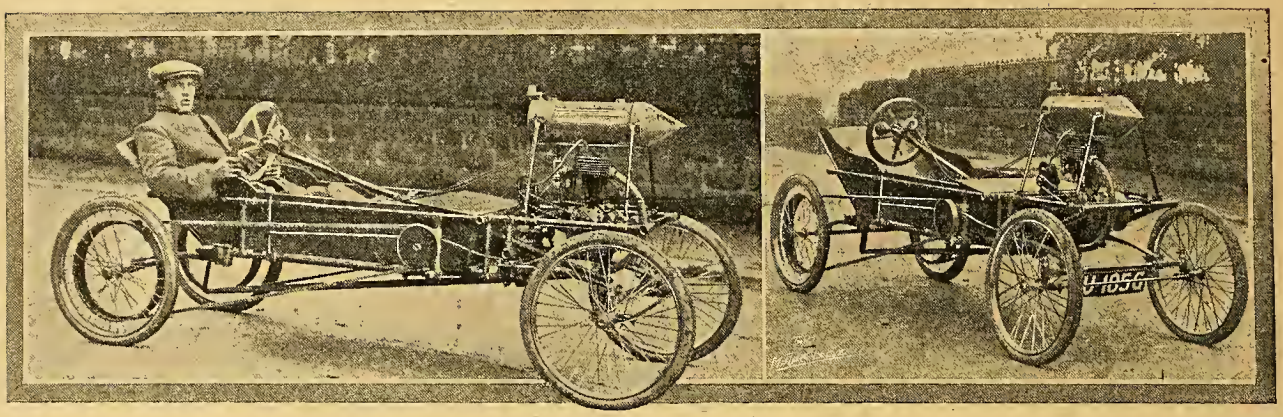
8. No sane motor cyclist will in future trouble to thread city traffic. Without doubt each municipality will erect 90ft. finger-masts in some central position, and on approaching a centre of population we shall "lift," and flying over the centre of the town consult the finger-mast *en passant* as to our route onward. Tramlines may now be multiplied *ad lib.* without any opposition from us. Street improvement—a costly burden on the rates—may be abandoned, and historic cities may retain their narrow and picturesque streets without a tremor, for the benefit of American tourists and other back numbers. As motor cyclists will now eschew town riding, country inns and garages will profit and thrive on new custom, and the "back-to-the-land" movement will receive a great impetus, even if motor cyclists whose belts break in mid-air will interpret the phrase in a fashion quite their own.

9. This last consideration suggests certain warning counsels to the novice. While the auto-aviette removes many inconveniences which have hampered the development of the sport, it introduces a few novel perils. A fouled sparking plug, broken valve or slipping belt is a mere bagatelle on the road; in the air it is a breath-stopping calamity. Riders will be well advised not to utilise their soaring gear unless they are absolutely convinced that the machine is in perfect tune from A to Z. In the near future low flying will doubtless become the rule, when the results of a slight mechanical derangement will be limited to a gentle return to the adjacent earth. But until all telephone and telegraph wires have been relaid in underground pipes, low flying must be regarded as no less dangerous than moon-brushing, and it will further be necessary to render all barbed wire hedges illegal. The small red boards erected by hunts to signal the presence of wire are scarcely sufficiently obtrusive to safeguard the low skimming motor cycle, and for the present our motto must be "the higher, the better." In conclusion I foresee a great slump in the stock of Burberry and other aquascuta. Instead of donning gaudy and odorous oilskins at the commencement of a heavy shower, we shall simply rise above the clouds, and descend on entering a fresh climatic zone, where the sun is shining brightly.



"Flying over the centre of the town consult the finger-mast"

A NEW 3½ h.p. CYCLECAR.



A 3½ h.p. cyclecar of light construction has been built by Mr. V. G. Vitanoff, of Harrogate, whose age is only twenty-one years. The accompanying illustration gives a good idea of the general design of the vehicle, the chief points being a 3½ h.p. Blumfield engine, B. and B. carburetter, C.A.V. magneto, and drip-feed lubricator.

The transmission is as follows: To the engine-shaft is fitted a Chater-Lea leather-to-metal clutch, thence by chain drive to a two-speed gear box, from the gear box by means of another chain to a counter-shaft, and finally to the back wheels by two ⅞in. rubber belts, thereby relying on belt slip to act as a differential. The gears are 5 and 11½ to 1. Ordinary motor cycle wheels, carrying 26in. × 2¼in. tyres, are used, and the steering, by a wheel, is direct.

The machine is capable of a very fair speed, and easily climbs stiff hills, but the springing device, by quarter elliptic springs, seems rather light. The little car is a very commendable effort, and no doubt the next machine turned out by Mr. Vitanoff will incorporate many improvements.

BELTS AND TYRES TO BE TESTED IN THE SIX DAYS' TRIALS.

Mr. T. W. Loughborough speaks most enthusiastically of his reception in the West Country, where everyone received him with the utmost hospitality. Colonel Boles, M.P., M.F.H., will start the first man on the first day of the trial (August 12th), and the Mayor of Taunton will start the first man on the last day.

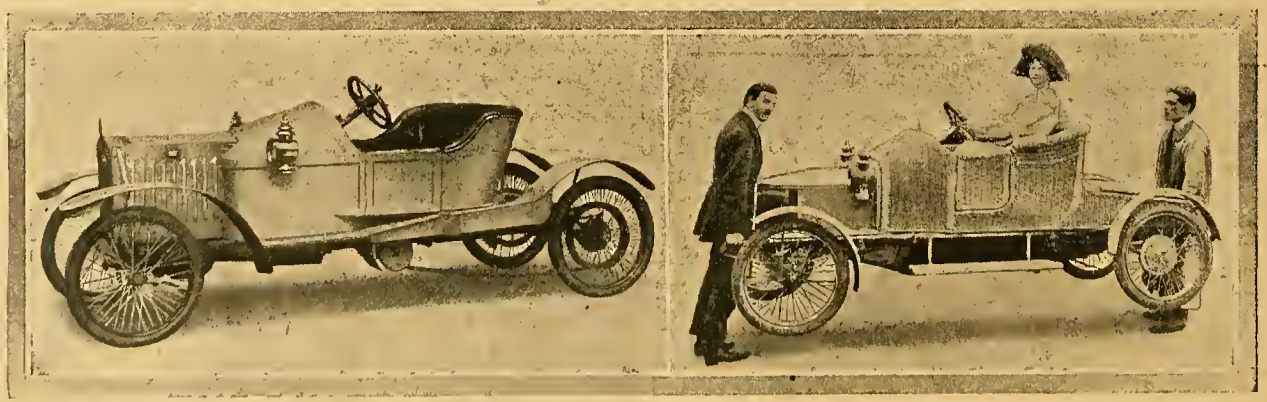
The police, boy scouts, and the press will all combine to render the Six Days' Trial a success.

The slow climb, during which top gear ratios only may be used, will be carried out on Countisbury Hill on the third day.

Sidecar combinations and cyclecars will be started after the motor bicycles at fairly long intervals on each day, so that the two-wheelers may not be impeded on the hills and narrow lanes which abound on the course. Motor bicycles will be started at one minute intervals.

It has now been decided at an A.C.U. Committee meeting that tyres entered for the trial will be purchased over the counter by the A.C.U., the money being refunded later, so as to ensure only stock tyres being used. This idea was suggested in *The Motor Cycle* last week.

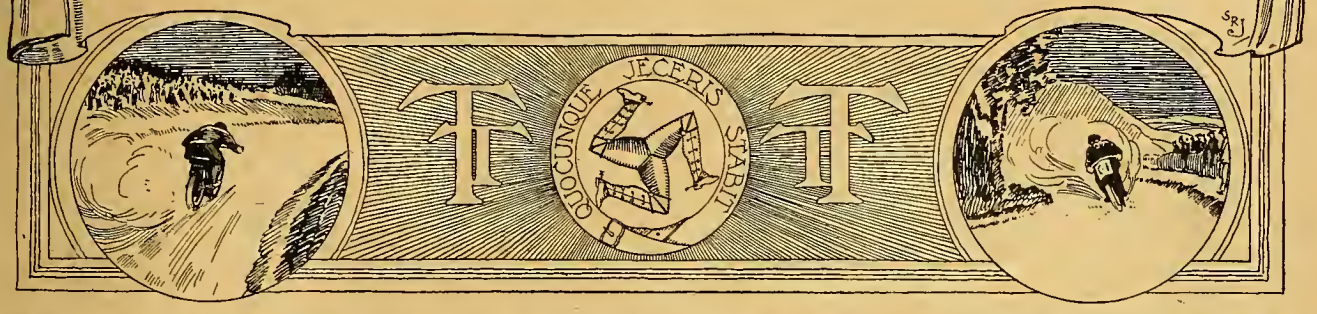
It was also decided that belts should be entered under the same conditions as tyres. Belts entered must not be fitted with more than one fastener throughout the trial. Both tyres and belts entered will be branded.



(Left) The new 8 h.p. Beacon cyclecar, which, as will be gathered, is of very light construction. (Right) The 8 h.p. Warne sociable, built by A. T. Warne & Co., of Leytonstone, has an air-cooled J.A.P. engine, chain and belt transmission. The gear ratio is varied by expanding and contracting the countershaft pulleys, the belt tension being adjusted by moving the rear axle. A recent short run in London traffic convinced us of its controllability and smooth running.

The International Tourist Trophy Races.

A BRIEF HISTORY. DETAILS OF COMPETITORS' MACHINES. HOW THE RESULTS WILL BE ANNOUNCED.



THIS year's Tourist Trophy Races will be the sixth meeting of its kind. The first race took place on May 30th, 1907. A race for motor cycles on the lines of the car Tourist Trophy Race had been suggested by Mr. H. W. Staner, the Editor of *The Autocar*, in 1906, but the actual trophy was the outcome of a conversation between Mr. H. Collier, sen., and the Marquis de Mouzilly St. Mars.

In the 1907 race, the petrol consumption was limited to 90 m.p.g. for singles and 75 m.p.g. for twins, and it was won by C. R. Collier on a 3½ Matchless-Jap at a speed of 38.5 m.p.h., his consumption of spirit being at the rate of 94½ m.p.g. H. R. Fowler (5 Norton) won the twin class at a speed of 36.2 m.p.h., and averaged 87 m.p.g.

The fourteen and a half miles triangular course from St. John's to Ballacraine, Kirk Michael, and Peel was used in those days, and was continued in use till last year, when the long course, embracing the Snaefell mountain road, was adopted after much discussion.

In 1908 the petrol consumption was further limited, 100 m.p.g. being stipulated for single and 80 m.p.g. for multi-cylindered machines. The winners were :

SINGLE-CYLINDERS.

J. Marshall (3½ Triumph), at 40.4 m.p.h., and having 38 ozs. of petrol left in his tank.

TWINS.

H. Reed (5 Dot-Peugeot), 38.5 m.p.h., 2 ozs. petrol left.

New Regulations in 1909.

In the following year the consumption limit was abandoned. New regulations were introduced, and singles and twins were run together on the cubic capacity basis, singles 500 c.c. and twins 750 c.c. All machines had to conform to the A.C.U definition of touring machines, but no pedals were allowed. The winner was H. A. Collier (5 twin Matchless) at 49.04 m.p.h. W. F. Newsome (3½ Triumph) being the first rider of a single-cylinder machine to finish, speed 44 02 m.p.h.

In 1910 the capacity of the twins was reduced to 670 c.c., but again the race was won by a twin. Results :

TWIN.

C. R. Collier (5 Matchless) 50.627 m.p.h.

SINGLE.

W. Creyton (3½ Triumph) 47.925 m.p.h.

Last year a much longer course was adopted, and the multi-cylinder capacity reduced to 585 c.c. The distance of the race was 187½ miles, being composed of five laps of 37 miles 4 furlongs. 1911 also marked the institution of a Junior T.T. for lightweights, singles up to 300 c.c., and twins of 340 c.c., over four laps of the same course, and the inclusion of the mountain climb strongly urged by this journal resulted in many new change-speed gears being brought to light. Winners :

SENIOR TWIN.

	h.	m.	s.
O. C. Godfrey (3¾ Indian) ...	3	56	10

SENIOR SINGLE.

J. A. Carvill (3½ Triumph) ...	4	16	49

JUNIOR TWIN.

P. J. Evans (2¾ Humber) ...	3	37	7

JUNIOR SINGLE.

H. A. Collier (2½ Matchless) ...	3	46	20

For the sake of comparison, we give also the speed in miles per hour, but it must be remembered that the 1911 course was more difficult than that of 1910, and the twin engines were smaller :

O. C. Godfrey (Indian) ... 47.62 m.p.h.
J. A. Carvill (Triumph) ... 44.89 ,,
P. J. Evans (Humber) ... 41.47 ,,
H. A. Collier (Matchless) ... 39.78 ,,

It will be observed from the gradually reduced cylinder capacities and the increased speed how good an effect the T.T. Races have had upon twin engines.

This Year's Regulations.

This year for the first time twins and singles will compete on an equal basis, 500 c.c. being the limit adopted in the Senior and 350 c.c. in the Junior event.

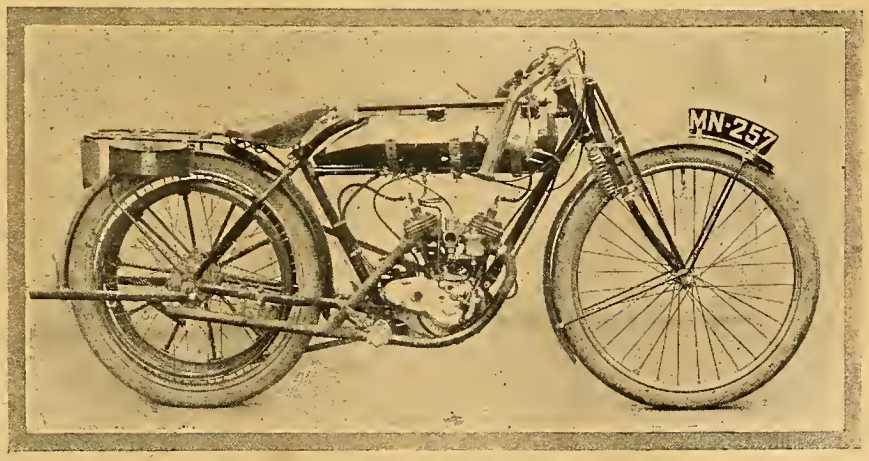
The following prizes are offered :

First. The Tourist Trophy and £40 cash (Junior, £30).

Second. £20 (Junior, £15).

Third. £10.

Silver cups and £10 and £5 to the first and second private owners, provided they are not in the first three, and that their performances are sufficiently meritorious.



Valve side of the new 2¾ h.p. Junior T.T. twin Humber. Observe the large capacity tank.

COMPLETE LIST OF T.T. ENTRIES.

DETAILS OF COMPETITORS' MACHINES.

BELOW will be found a complete list of entries for the Tourist Trophy Races in the Isle of Man with the numbers of the competitors in the order in which they will start. The total number of entries received for the Senior Race is forty-nine, and for the Junior Race twenty-five. In the Senior Race there are twenty-one private owners, and in the Junior Race eleven private owners.

Senior Race, July 1st.

START, 10 a.m. DISTANCE, 187½ miles (five laps to the course).
DEPOTS: Quarter Bridge and Ramsey.

No.	Rider and Machine.	No. of cyl.	Bore and stroke.	c.c.
*1.	J. R. Haswell (3½ Triumph) ...	1	85 × 88	499
*2.	J. R. Alexander, jun. (3½ Indian)	2	70 × 64.5	497
*3.	H. H. Bowen (3½ Dot)	2	76 × 55	498
4.	N. F. Holder (4 Blumfield) ...	1	81.5 × 95	495.6
5.	S. C. Perryman (4 Blumfield) ...	2	61.8 × 83	498
*6.	I. B. Hart-Davies (3½ Triumph)	1	85 × 88	499
7.	F. A. Applebee (3½ Scott) ...	2	69.8 × 63.5	486.6
8.	Hugh Mason (3½ Matchless) ...	2	70 × 64.5	497
9.	Frank Philipp (3½ Scott) ...	2	69.8 × 63.5	486.6
10.	J. W. Blumfield, jun. (4 Blumfield)	1	81.5 × 95	495.6
*11.	J. A. Hoffmann (3½ Triumph) ...	1	85 × 88	499
12.	C. B. Franklin (3½ Indian) ...	2	70 × 65	490
*13.	S. F. Garrett (3½ Regal Green)	1	85 × 88	499
14.	H. C. Mills (3½ Regal Green) ...	1	85 × 88	499
*15.	D. C. Bolton (3½ Rudge) ...	1	85 × 88	499
*16.	Q. Smith (3½ Triumph)	1	85 × 88	499
*17.	C. R. Martin (3½ Triumph) ...	1	85 × 88	499
18.	P. W. Owen (3½ Norton) ...	1	79 × 100	490
19.	John Hayes (3½ Cayenne) ...	1	85 × 88	499
20.	Karl Gassert (3½ N.S.U.) ...	2	65 × 75	497.7
*21.	Alister Kirk (3½ Triumph) ...	1	85 × 88	499
22.	G. Griffith (3½ N.S.U.)	1	85 × 88	499
23.	A. H. Alexander (3½ Indian) ...	2	70 × 64.5	497
24.	Harold Petty (3½ Singer) ...	1	85 × 88	499
25.	Paul Schmidt (3½ N.S.U.) ...	2	65 × 75	497.7
26.	J. L. E. Emerson (3½ Norton)	1	79 × 100	490
27.	E. B. Ware (3½ Zenith)	2	76 × 55.5	498
28.	H. H. Huckle (3½ Zenith) ...	2	76 × 55.5	498
*29.	C. Stanley Franklin (3½ N.S.U.)	1	85 × 88	499
30.	John Gibson (3½ Trump-Jap) ...	1	90 × 77.5	492
31.	J. Woodhouse (3½ Regal-Precision)	1	85 × 88	499
*32.	A. S. Jones (3½ Rudge)	1	85 × 88	499
*33.	W. Jones (3½ Rudge)	1	85 × 88	499
34.	F. Dixon (3½ Cleveland) ...	1	85 × 88	499
*35.	J. W. Adamson (3½ Triumph) ...	1	85 × 88	499
*36.	A. Hall (3½ Rudge)	1	85 × 88	499
37.	C. R. Collier (3½ Matchless) ...	2	70 × 64.5	497
38.	H. A. Collier (3½ Matchless) ...	2	70 × 64.5	497
39.	J. F. Sirett (3½ Indian)	2	70 × 64.5	497
*40.	W. H. Bashall (3½ Matchless) ...	2	70 × 64.5	497
*41.	T. Steele (4 Rex)	2	— —	499
*42.	Percy Butler (3½ Triumph) ...	1	85 × 88	499
43.	S. L. Bailey (2¾ Douglas) ...	2	60 × 60	354
44.	Harry Reed (3½ Dot)	2	76 × 65	498
*45.	W. L. T. Rhys (3½ Triumph) ...	1	85 × 88	499
46.	R. G. Mundy (3½ Singer) ...	1	85 × 88	499
*47.	C. W. Jamieson (3½ Singer) ...	1	85 × 88	499
*48.	E. Kickham (2¾ Douglas) ...	2	61 × 60	350
49.	O. C. Godfrey (3½ Indian) ...	2	70 × 64.5	497

Junior Race, June 28th.

START, 10 a.m. DISTANCE, 150 miles (four laps to the course).
DEPOTS: Woodlands (Douglas) and Ramsey.

No.	Rider and Machine.	No. of cyl.	Bore and stroke.	c.c.
1.	P. J. Evans (2¾ Humber)	2	60 × 60	345
2.	H. Mason (2¾ Newcastle-on-Tyne)	2	60 × 61	349
3.	S. L. Bailey (2¾ Douglas) ...	2	60 × 60	350
4.	Harold Petty (2½ Singer)	1	69 × 80	299
*5.	J. Harrison Watson (2¾ Humber)	2	60 × 60	345
6.	D. M. Brown (2¾ Humber) ...	2	60 × 60	345
*7.	Karl Gassert (2½ N.S.U.) ...	2	54.4 × 75	348.6
8.	Jas. Stewart (2¾ Douglas) ...	2	61 × 60	350
9.	H. J. Cox (2¾ Forward)	2	56 × 70	344
*10.	J. H. Kerr (2½ N.S.U.)	1	75.5 × 78	349.2
*11.	Ed. Kickham (2¾ Douglas) ...	2	61 × 60	350
*12.	H. J. Beal (2½ N.S.U.)	2	54.4 × 75	348.6
14.	H. C. Newman (2½ Ivy-Precision)	1	70 × 90	348
15.	Jack Haslam (2¾ Douglas) ...	2	61 × 60	350
*16.	J. Ingram Walker (2½ N.S.U.) ...	1	75.5 × 78	349.2
*17.	Robt. Ellis (2¾ Nut)	2	53 × 78	344
18.	N. D. Slatter (2¾ Alcyon) ...	1	68 × 108	299
*19.	D. R. O'Donovan (2½ Singer) ...	1	69 × 80	299
*20.	W. H. Bashall (2¾ Douglas) ...	2	61 × 60	350
*21.	J. T. Bashall (2¾ Humber) ...	2	61 × 60	350
22.	P. W. Owen (2¾ Forward) ...	2	56 × 70	344
23.	M. Stoeffel (2¾ Alcyon)	1	68 × 108	299
24.	R. G. Mundy (2½ Singer)	1	69 × 80	299
25.	E. V. Pratt (2½ O.K.-Precision)...	1	70 × 90	348
26.	W. Creyton (2¾ Humber)	2	61 × 60	350

*Signifies private owner.

Announcing the Progress of the T.T. Races.

"THE MOTOR CYCLE" SERIES OF TELEGRAMS.

AS in previous years, *The Motor Cycle* has arranged to telegraph the progress of both the T.T. Races lap by lap, and the final results will be wired to various firms throughout the kingdom. The following firms will exhibit these telegrams as they are handed in:

LONDON.

The Eastern Garage Co., 418, Romford Road, Forest Gate, E.
Alfred Dunhill, Ltd., 359, Euston Road, N.W.
Selfridge and Co., Ltd., Oxford Street, W.
A. W. Gamage, Ltd., Holborn, E.C.
John Piggott, Ltd., 118 Cheapside, E.C.
H. Taylor and Co., 21a, Store Street, Tottenham Court Road, W.C.
The Hutchinson Tyre, 70, Basinghall Street, E.C.
Godfrey and Applebee, Ltd., 208, Great Portland Street, W.
Maude's Motor Mart, 136, Great Portland Street, W.
Robertson Motor Agency, 157, Great Portland Street, W.
Benetfink and Co., Ltd., 107, Cheapside, E.C.
G. N. Higgs, 31, Vauxhall Bridge Road, S.W.
The Service Co., Ltd., 292, High Holborn, W.C.

BIRMINGHAM.—The Premier Motor Co., Ltd., Aston Road; the Para Rubber Co., 93, John Bright Street; Thomas Clayton and Son, Ltd., 125, New Street; P. J. Evans, 358, Stratford Road, Sparkhill; the Colmore Motor Cycle Depot, 31, Colmore Row.
BRADFORD.—Eric Myers, 52, Manningham Lane.
BRISTOL (Montpellier).—The "Leader" Cycle and Motor Depot, Station Road.
COVENTRY.—*Midland Daily Telegraph* Offices.
DUBLIN.—F. A. Wallen and Co., 6 and 7, Nassau Street.
EDINBURGH.—Alexander and Co., 113, Lothian Road.
HULL.—"Embro" Motor Co., 191, Holderness Road.
LEEDS.—A1 Mudscreen Co., 39, Guildford Street.
LEICESTER.—Tom Cann, Ltd., 18, Applegate Street.
LIVERPOOL.—Reliance Engineering Co., Manchester Street: Hitchings Ltd., 74, Bold Street.
LLANDRINDOD WELLS.—Tom Norton, Ltd., the Palace of Sport.
MANCHESTER.—H. Reed and Co., Deansgate.
NEWCASTLE-ON-TYNE.—The Rover Co., Ltd., 86, Northumberland Street; the Percy Motor Co., St. Andrews Place.
NOTTINGHAM.—Bentinck Motor Co., Trent Bridge.
ST. ALBANS.—The New Century Motor Cycle Co.
WOLVERHAMPTON.—Bruce, Ltd., 64, Lichfield Street.

Unalloyed Pleasure—

That is the experience of all who ride the SUPERIOR MACHINE—

. . THE . .

Douglas

VIBRATIONLESS LIGHTWEIGHT

IN order to obtain the maximum of enjoyment from a motor cycle holiday or tour, it is necessary to ride a machine which can be relied upon absolutely to give no trouble. Such a machine is the DOUGLAS VIBRATIONLESS LIGHTWEIGHT. The engine will run for a practically indefinite period without tuning-up. The 1912 models embody numerous improvements. No detail which could be criticised in 1911 has been left untouched. Space prevents these improvements being given here, but they are set out fully in our 1912 Catalogue —a copy of which will be sent on request.

We do not ask you to accept our word alone for the above statements. The proof has been and is being given week by week on road and track. Douglas successes during 1911 occupy five pages of small type in our Catalogue, and the achievements in 1912 to date make another formidable list.

ONE INSTANCE OF DOUGLAS SUPERIORITY.

1912 London-Edinburgh Run.

FIVE DOUGLAS MACHINES completed the DOUBLE journey to Time, and secured FIVE SPECIAL GOLD MEDALS.

¶ Illustrations and full specification of all our models are given in the 1912 Catalogue, together with price list of spare parts and sundries. The catalogue also contains full instructions for the care and management of the machines.

May we send you a copy ?



DOUGLAS BROS., Kingswood, BRISTOL

Telegrams—"Douglas, Kingswood." Telephone—No. 51.

London—336, Goswell Road, E.C.

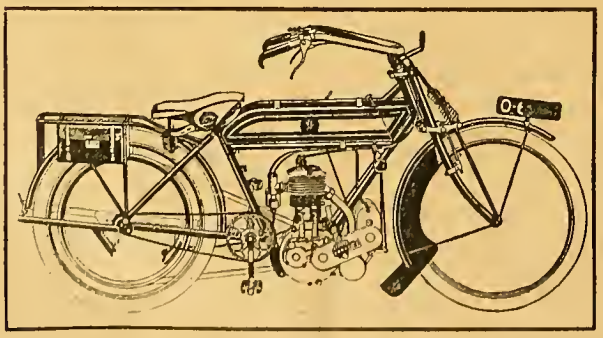
THE B-S-A MOTOR BICYCLES

PROVED THE MOST ECONOMICAL ON PETROL.

The following letter has been received from Invercargill, New Zealand:—

We have been very busy to-day running off the motor cycle test for petrol consumption. The results have proved very satisfactory to us, we having entered three B.S.A. Motor Cycles and scored FIRST, SECOND, and THIRD against all well-known makes competing.

(Signed) P. H. VICKERY.



Write for latest Catalogue of B.S.A. Motor Bicycles.

THE BIRMINGHAM SMALL ARMS CO., LTD.,
13, Small Heath, BIRMINGHAM.

A Motor Cyclist's Advice:—"Always use B.S.A. Cylinder Oil for Motor Cycles."

The International T.T. Races.—

T.T. Matchless Machines.

As mentioned in last week's issue, the new T.T. Matchless are fitted with a 3½ h.p. twin Jap engine of 70 mm. bore by 64.5 mm. stroke. The gear

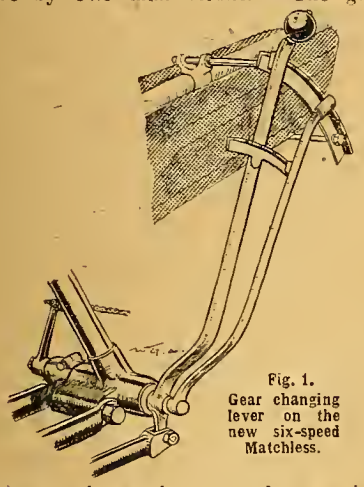


Fig. 1. Gear changing lever on the new six-speed Matchless.

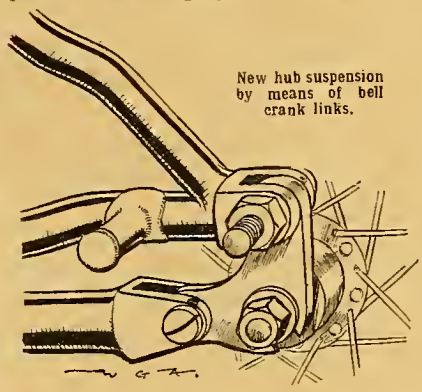
ratios are lower than was the case last year, as it was found impossible to take advantage of the higher gears.

An Amac carburetter and an enclosed Bosch magneto are employed. A Best and Lloyd combined hand pump and drip feed delivers a continual stream of oil to the rear wall of the front cylinder at a point slightly below the bottom edge of the piston wall when the latter is at the top of the stroke. By this means an equal supply of oil is allowed to both cylinders, as centrifugal force causes the rear one to be splashed much more thoroughly than the front.

The petrol tank holds over two gallons and the oil supply is proportionately large; both are fitted with large filler caps. Matchless girder spring forks are employed, and the wheels are shod with Hutchinson 2¼in. rubber-studded "passenger type" tyres.

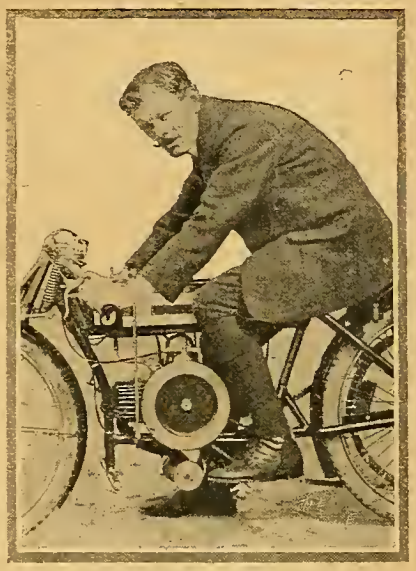
The principal changes in the design of the variable gear will be best understood by referring to fig. 1, which shows the arrangement of the gear levers. The larger one controls the movement of the rear wheel, whilst the smaller operates the expanding pulley by means of a chain which passes over a sprocket attached to the quick-thread screw mechanism of the outer flange. In last year's model both these levers moved over a notched quadrant attached to the tank, and they were arranged in such a manner that they could both be manipulated together, or separately, when it was required merely to tighten the belt without changing gear. In this year's pattern a much more convenient and handy design has been adopted. As is shown in the drawing, the notched quadrant of the outer lever is attached to the inner lever, and moves with it, so that unless the belt stretches appreciably only one lever has to be handled. The movement of the smaller lever corresponds to taking up two inches of slack in the belt, so that all reasonable emergencies are provided for.

Improvement in design has also taken place in the swinging of the rear hub,



New hub suspension by means of bell crank links.

which rocks on pivot levers with a parallel motion. In previous models the under pair of "chain stays" were taken direct to the axle ends, but, as will be seen in the latest type, a bell-crank link has now been interposed. This is a very considerable improvement, as by means of the slot in which the hub axle is carried the whole back wheel can be slipped out very readily. Hitherto the Colliers have been fortunately fairly free from tyre troubles in the T.T., but the above shows that they are placing no reliance on luck, but are prepared to meet any emergency.



J. Haslam (2¾ h.p. Douglas), Sheffield's representative in the Junior T.T. Race.

As usual, long undershields extending from forward of the crank chamber to a point nearly level with the rear hub will be fitted to all the machines, so as to keep the transmission at all events as nearly as possible free from effects of weather and road conditions.

Another detail worth noting is the provision of a new two-legged stand.

As in previous years, the Matchless machines are enamelled a workmanlike dove-grey, and it is safe to say that no machine in the race will be more complete as regards finish and attention to detail.

O.K.-Precision.

V. Pratt will ride a 2½ h.p. 70 × 90 mm. O.K.-Precision fitted with a Sturmey-Archer three-speed gear, Bosch magneto, Amac carburetter, and 2½in. Hutchison T.T. tyres. All fittings are brazed on where possible, and an auxiliary lubrication pipe fed by a Best and Lloyd semi-automatic lubricator leads to the side of the cylinder. This machine will be conspicuous by reason of its large two-gallon tank painted bright yellow with broad black lining.

Forward.

P. W. Owen and Harold Cox will both ride 2¾ h.p. twin Forwards fitted with Armstrong gears in the Junior race. The design of these machines will closely resemble last year's model. P. W. Owen will also ride a 3½ h.p. 79 × 100 mm. Norton in the Senior race. This machine is fitted with the Armstrong gear and is conspicuous for its comparatively long wheelbase. The tank has a capacity of two gallons of petrol and three quarts of oil. Druid forks and C.A.P. carburetter are used. J. L. E. Emerson will ride a similar machine.

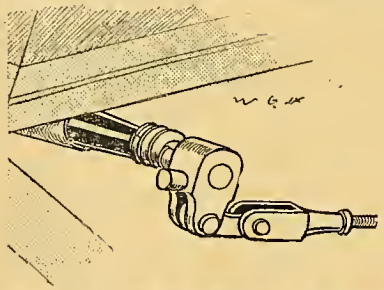


The Regal Precision team—H. C. Mills, J. Woodhouse, and S. F. Garratt—returning from practising, which ceased at 7 a.m. each day.

The International T.T. Races.

Triumph.

A band of eight stalwarts, J. R. Haswell, I. B. Hart-Davies, J. A. Hoffman, Quentin Smith, C. R. Martin, Alister Kirk, J. W. Adamson, Percy Butler, and W. L. T. Rhys uphold this classic make, and it is not the least suprising to find that one and all will be mounted on standard machines which embody no experimental points whatever. One point, however, is worth attention. In the ordinary course of events, the change-speed lever and quadrant of the Sturmey-Archer three-speed hub is carried on the top tube where a special lug is placed for its reception. In the T.T. Triumph machines a position much more convenient to a racing attitude on the part of the rider has been adopted. This



Triumph gear changing mechanism on left-hand side of tank. The operating lever is on the right.

has necessitated a new design of gear lever and quadrant. The lever is carried on a sleeve clipped to the tube below the tank and is placed well forward. The lever itself is capable of sliding laterally in the sleeve against the action of a spring washer, and as the quadrant is furnished with side slots, or rather grooves, changing gear is performed by a simple push or pull action. J. R. Haswell is particularly delighted with this arrangement, and informs us that he



J. R. Haswell (3½ h.p. two-speed Triumph) salutes our photographer. This well-known amateur has been doing exceedingly well in practice.

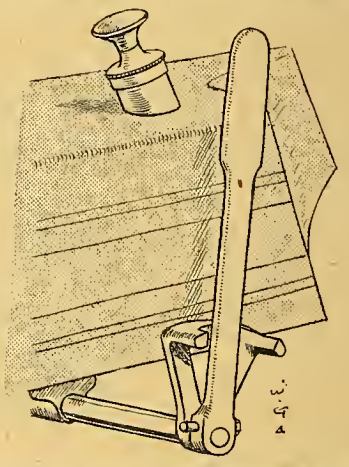
finds changing a matter of perfect ease in all circumstances. As mentioned last week only two speeds are employed, the bottom gear ratio being suppressed altogether, although the parts still remain in the hub.

On Haswell's Triumph, the position and nature of the brake pedal has also been altered. This is a modification of standard practice, and is solely due to the requirements of the racing position, in which the strength of a heel movement can be taken more advantage of than a toe movement. Except for the pedal, the brake remains exactly the same as on the standard models. It will be noted that the boss of the pedal which is attached to the rocking pivot is formed into a small "ear" which abuts against one of the crank chamber bearer bolt heads in order to provide a stop.

Ivan B. Hart-Davies will ride a T.T. Triumph with a Sturmey-Archer change-speed hub, otherwise the machine will have only slight alterations.

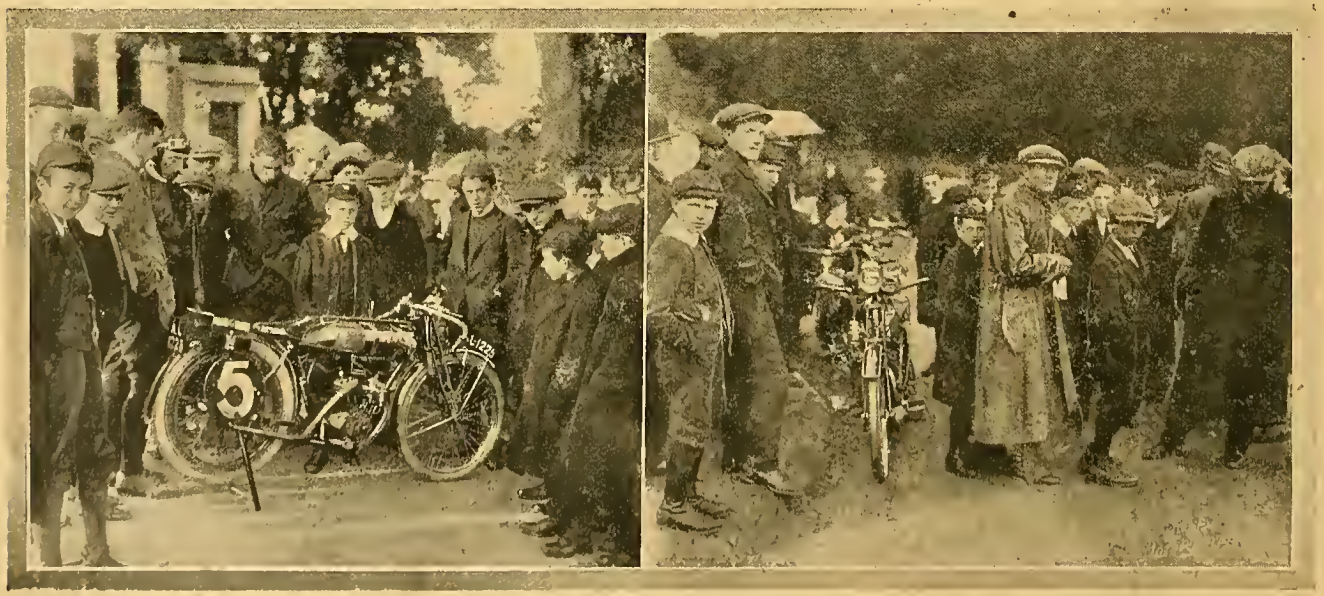
Regal-Precision and Regal-Green.

These two makes, the former of which is in the hands of the redoubtable J. W. Woodhouse, whilst the latter will be ridden by H. C. Mills and S. F. Garrett respectively, are exactly the same except for the engines and gears. Woodhouse's mount, which was described last week, is a very formidable looking air-cooled engine, with enormous radiating surface. Woodhouse finds that even after long pulling



Showing the special gear-changing lever on the Triumph machines, which have a Sturmey-Archer gear adapted for two-speeds only, to enable a quick and sure change.

under heavy load—by way of trying the machine thoroughly it was made to carry a passenger on the carrier from Birmingham to Liverpool—there is not only no sign of overheating, but actually no



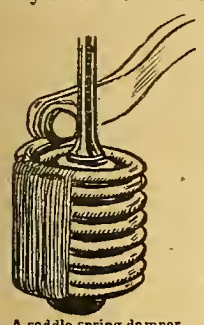
PRACTISING FOR THE T.T.

Scenes during the early morning's practising. On the left P. J. Evans, last year's Junior T.T. winner, is seen chatting with the brothers Alexander.

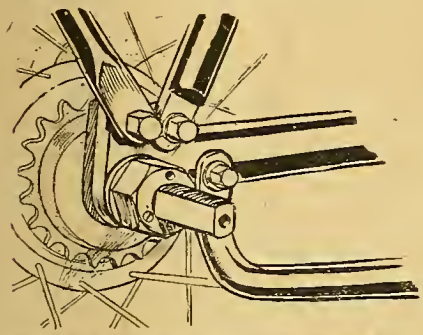
On the right A. J. Sproston and H. P. Bousley keep order at Quarter Bridge, where a crowd assembles each morning.

The International T.T. Races.—

symptom to suggest that the engine was even getting hot at all. At practically any time the hand can be held quite comfortably on the radiating fins. A rather special point of this machine is the care which has been taken to ensure that the three-speed Sturmey-Archer gear does not throw any strain upon the chain stays and other parts of the frame. First of all, a secondary pair of chain stays—which may be described as simple torque tubes — are arranged *à la* Trump-Jap to reinforce the back axle housings, but an even more important detail is the strengthening up of the attachment of the hub spindle itself. It may not be generally known that on the top and intermediate gears a clockwise rotational strain is thrown upon the



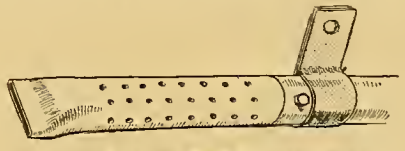
A saddle spring damper on J. Woodhouse's machine.



Hub spindle locking device and torque tube on Regal-Precision machines.

hub spindle, whereas when the lowest gear is engaged an anti-clockwise strain is produced. In order to relieve the spindle as far as possible it is provided with a locking piece, which is applied to its flattened threaded ends upon which it is a close driving fit—inside the chain stay ends, and it is here firmly locked in position by the same stud which secures the foot of the carrier tubes. A plate is fixed at each side, that on the pulley side being much stronger than that on the other. For additional security the axle nut is furnished with grub screws.

Both brakes are on one brake rim, and both are controlled by foot. One is above the chain stay, whilst the other is below. Transverse sawcuts are made in the fibre



The Regal-Green and Regal-Precision silencers.

in order to prevent, as far as possible, any liability to glaze, and also to make the engagement more gentle. The tank holds two gallons of petrol and about half a gallon of lubricating oil.

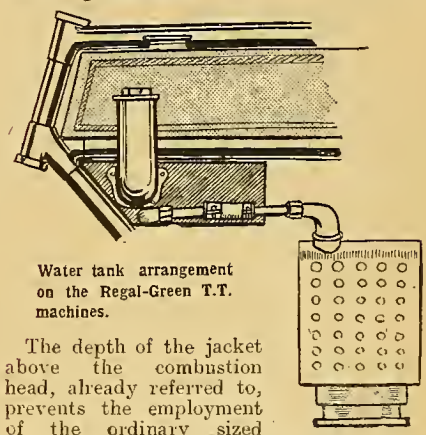
Woodhouse pointed out two other interesting little details, one in connection with the exhaust pipe. The latter is very long, coming to well behind the back hub, and of large diameter, and the end piece is secured in position by a liner and set-screw. Whilst it will be always retained in practice, it will probably be removed on the occasion of the race itself, but not unless this is found to be an advantage.



Sphinx sparking plug which is made for use on Green water-cooled engines.

The other point is an ingenious method of imparting extra rigidity to the saddle springs. The coils of these are partially locked together with copper wire, which is claimed to hold them laterally stiff even in the worst circumstances.

As for the Regal-Green it is quite safe to say that no more interesting machine will take part in the race. It is covered with interesting points, all of which show the practical lines upon which the design has been got out. Readers of *The Motor Cycle* are already familiar with the Green system of water-cooling by natural circulation, in which the radiators are applied to the actual water-jacket of the cylinder. An additional water tank is carried, which is punt-shaped, and placed immediately under and behind the steering head; it is filled through a large L-shaped tube provided with a stopper. On each side are outlet pipes, which proceed to the top of each of the honeycomb radiators. Cursory examination of the valve system might lead to the impression that the spring is quite short; it is, however, of quite usual length, but, owing to the depth of the water-jacket which surrounds the valve chest, only a small part protrudes above the cylinder head. The carburetter is carried behind the cylinder, while the exhaust pipe occupies a similar position in front.



Water tank arrangement on the Regal-Green T.T. machines.

The depth of the jacket above the combustion head, already referred to, prevents the employment of the ordinary sized plug, and accordingly special ones with enormously long bodies have been made by the Sphinx Manufacturing Co. These are of the single point variety, and possess by reason of their very design a notable advantage over the ordinary pattern. This is that the mica insulating pillar does not get nearly so hot as usual, and is therefore a much more perfect non-conductor. This point is so apparent that Woodhouse is using the same plug on his air-cooled engine, although in this case, of course, an ordinary short-bodied plug could be used.

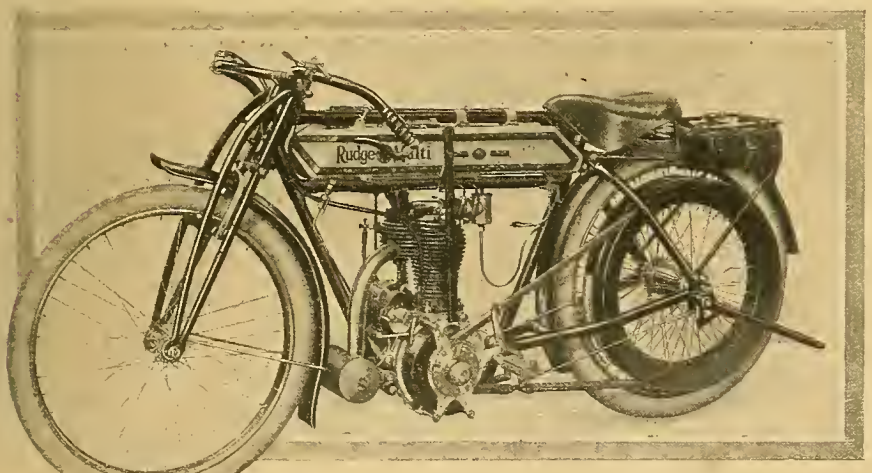
The Regal-Green machines are both fitted with the Brampton gear, a description and illustrations of which appeared in *The Motor Cycle* of June 6th.

The gear change lever and quadrant, working the pulley through a twin-link chain, is situated in a very convenient position on the top tube, to which it is clipped by a special attachment. Means are provided for adjusting the lever segment as to chain tension, and also as to its position relative to the inclined planes of the pulley.

The general tendency in the Island is to look upon these water-cooled mounts as providing a very probable winner.

Trump-Jap.

The Trump-Jap, ridden by J. Gibson, is a decidedly smart machine, standard in every respect with the exception of dropped handle-bar, large filler caps, etc. It is fitted with an Armstrong three-speed hub, Amac carburetter, Druid forks, and is, generally speaking, amongst the least noisy of the T.T. machines. Gibson has competed in previous races, so may be expected to do well.



The Multi Rudge Tourist Trophy machines, which have twenty speeds. The forks are the standard spring forks fitted backwards.

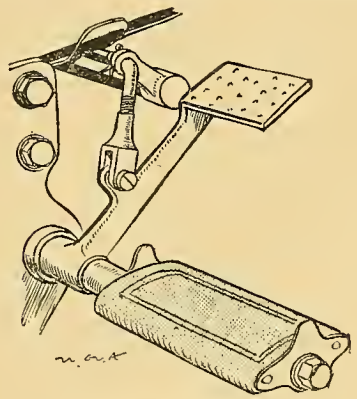
The International T.T. Races.—

Indian.

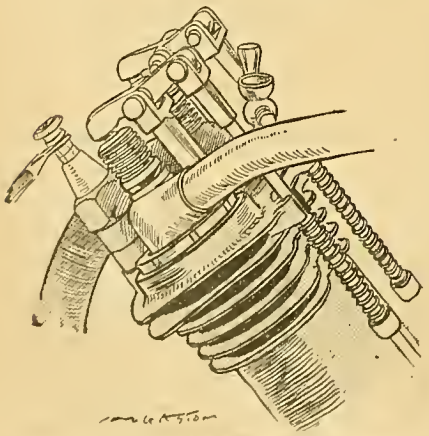
The 3½ h.p. twin Indians are exactly the same, in fact identical with the machines which swept the board last year, except that the stroke has been shortened to 64.5 mm. to get the capacity within the limit. They have the new type of roller bearing back hub with enclosed brake, which made its first appearance at last year's race, and also large auxiliary oil tanks.

N.U.T.

Amongst the neatest constructed machines entered for the Junior T.T. are the N.U.T.'s (short for Newcastle-upon-Tyne), which will be ridden by Hugh Mason and Robert Ellis. The former is also riding a Matchless in the Senior. This last machine has already been described in these columns, and it therefore suffices to mention only a small fitting which Hugh Mason has introduced on his own account. This is a double brake arrangement which appears to work very well. There are two pedals both mounted on the same spindle, one being operated by the toe and the other by the heel. Each actuates a separate shoe on the belt rim, and, whilst one of these shoes is placed above the chain stay—so providing a fierce brake—the other is below it, and is more gentle in action. The two brakes can each be applied separately or both can be put on together.

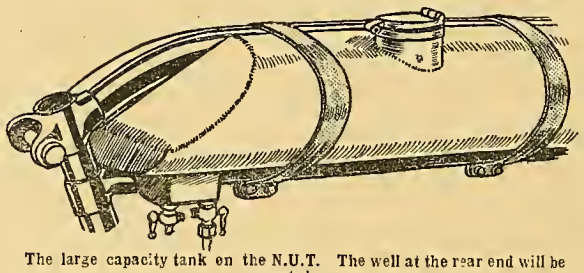


Heel brake on the N.U.T.



Cylinder of new overhead Moto-Reve engine fitted to the N.U.T. machine.

The two N.U.T. machines are identical except for their engines, one of which (Mason's) is a specially-designed twin J.A.P. of 60 mm. × 61 mm. (345 c.c.), while the other is a Moto-Rêve twin, 53 × 78 mm., also specially designed. It is rather interesting to note that the former motor unit is nearly twice as heavy as the latter, although their c.c. are almost the same, but, on the other hand, the J.A.P. is certainly slightly the more powerful of the two. The Moto-Rêve unit weighs as a matter of fact just on 30 lbs. complete with magneto, carburetter, etc. It has been specially constructed—the work only occupying some three weeks—and is practically a reduced facsimile of the bigger twin which the intrepid Berlie rode in the Senior race last year. A small feature which is worth attention, though it may easily escape it, is the provision of insulating washers for the purpose of preserving the temper of the valve springs. The latter rest upon what are practically little metal footstools with four legs arranged to allow the air a free passage round and through them.



The large capacity tank on the N.U.T. The well at the rear end will be noted.

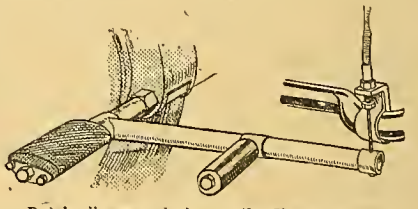
The cylinders are set at an angle of 45°, and the valve tappets face one another across the top of the crank chamber. The valves are of large diameter, but exceedingly light, and necessitate a very wide combustion chamber. Nothing could be more striking than the difference in design between this engine and the equivalent J.A.P. In the latter, for instance, the valve springs are at least six times as strong as in the other. The M.-R. engined N.U.T. is credited unofficially as having covered a measured distance at 60 m.p.h.—a marvellous performance for so tiny an engine.

Mason informed us that he has improved his own engine, the J.A.P., considerably by installing a heavyweight size of magneto which does not, at high speeds, seem to take as much from the engine as it gives back, whilst the pulling power at low revolutions is very marked. Both engines have Amac carburetters. The transmission is by belt, and Armstrong Triplex hub gears are fitted. The change-speed quadrant of the latter has on one of the machines been fitted with an additional securing device to guard, as far as possible, against the possibility of unintentional gear changes. A split pin tied to a piece of string and a hole in the quadrant plate are all the working parts of the device. Lubrication is by Best and Lloyd forced drip feed. The brakework on these lightweights is carried out in a way that conclusively proves Mason to be a designer of sound sense. Each machine has a couple of foot brakes as well as the usual hand brakes. On the J.A.P. engined machine, the hub pedal is arranged somewhat differently from that on the Moto-Rêve.

A very notable feature of the N.U.T.'s is the large capacity of the oil and petrol tanks. The former has a volume of 2¼ gallons, and it is expected that it will be able to run right through the 150 miles without filling up; although large it does not appear clumsy. The deep well at the rear end of the tank is not only useful in allowing the last spot of petrol to be used, but it is especially valuable when water gets into the petrol; turning on the drain tap for a moment practically ensures its liberation with very little loss of spirit.

Singer.

In common with so many other machines the Singer lightweights which are being ridden in the Junior race by Harold Petty, R. G. Mundy, and D. R. O'Donovan, are the ordinary standard 2½ h.p. model, similar to that which G. E. Stanley has been riding so victoriously at Brooklands. The only novel detail about them is the foot operated lubricating device. A long crank is pivoted on the footrest bar, and is fitted with a roller-pedal, which gives a multiplying lever effect to the end piece, to which is attached a Bowden wire, the casing of which is anchored to the chain stay. The wire passes up the saddle tube and along the tank to the hand pump, which it operates in opposition to a very strong internal spring. The whole arrangement is very nicely carried out, and is not in the least unsightly. Petty states that he finds it a very great convenience indeed, as it can be worked without affecting one's knee grip.



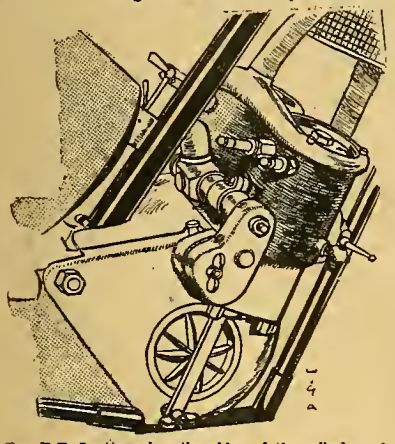
Pedal oil pump device on the Singer Junior machines.

Scott.

Many interesting features are to be found in the two Scott machines, which will be ridden by Frank Philipp and F. A. Applebee respectively. In general the design is the same as last year, but there is a number of detail differences. In the first place the engine is smaller, having a bore of 69.8 mm. and a stroke of 63.5 = 486.6 cubic capacity. The most noticeable change in the engine is, however, the arrangement of the water jacket; formerly this extended right over the cylinder head, but in the T.T. machines the head is left plain and air-cooled—the exact reverse of the 1910 Scotts, which had water-cooled heads and air-cooled cylinders.

Several advantages are claimed for the alteration. Firstly it allows a higher compression to be used without danger

The International T.T. Races.—
of pre-ignition—this is owing, however, principally to the fact that the plug points are more adequately cooled. Next it reduces the quantity of water carried and so reduces the weight and size of the radiator. Around the cylinder the water jacket is set eccentrically, giving the larger space on the upper side of the engine. The plugs are screwed into quite thin steel sleeves, which are in turn screwed through the water jacket into

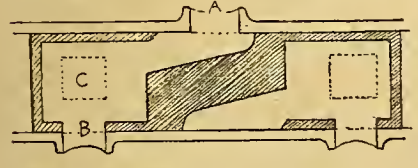


New T.T. Scott engine, the sides of the cylinders of which only are water-cooled.

the cylinder. There is thus no excess of cast iron round the plug, and the thinness of the adapter renders its cooling very efficient. As a stand-by in case of need a second plug is inserted in each cylinder, but on a distance of 1,200 miles it has not been found necessary to use the second set.

It may thus be concluded that all possibility of plug trouble has now been successfully obviated. A point that is worth noting is that the plugs which are not used show no tendency to soot up.

The patent distributer valve, which was used for the first time in last year's race, has been retained, but instead of being, as previously, driven by chain, it now employs a train of pinions which are contained in a neat stamped aluminium casing attached to the side of the crank chamber. The main drive is taken from a toothed ring on the lay-shaft to a second pinion on the end of a short shaft which passes right through the right hand crank chamber. The



Section of Scott valve. The letters are referred to in our description.

valve itself is of ingenious design and forms a distributer controlling the admission of gas to the crank chamber, where it is compressed, and thence to the cylinder proper.

The action of the valve will be perhaps better understood by reference to the sectional sketch. When the port A is at the top it places the crank chamber in direct communication with the carburetter, the port B for this purpose being registered with a port of the crank chamber and the body of the valve having a deep channel cut in it.

Later in the stroke the port A disappears behind the containing sleeve, and a third port C is brought opposite the crank chamber port at the same time as the port B is opposite the cylinder port. The compressed gases thus pass from the crank chamber to the combustion head.

Whilst this is taking place the ports of the other end of the valve are opening communication between the carburetter and the other crank chamber, and so the cycle of operations proceeds in due course.

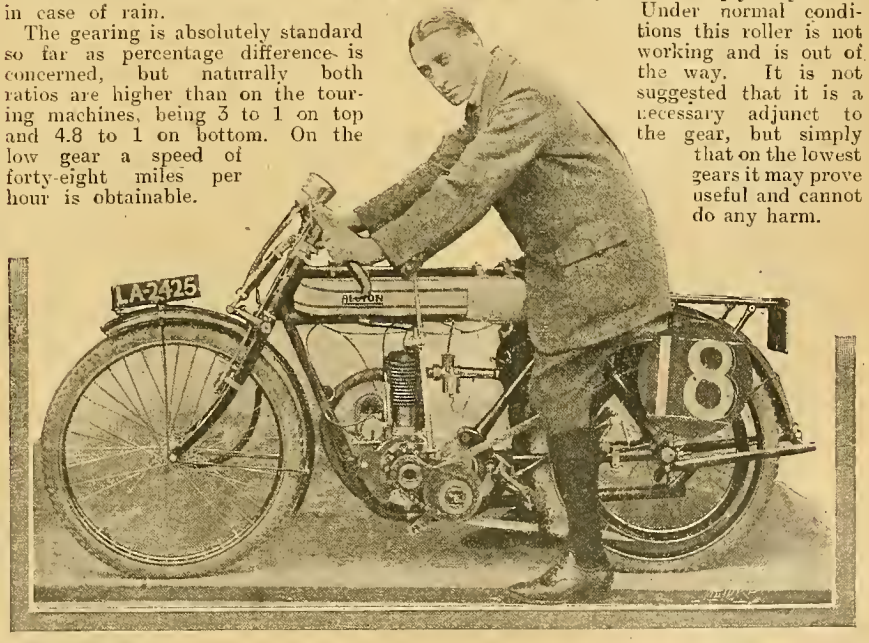
The valve, which is specially lubricated and takes a quite inappreciable amount of power to drive, rotates at the same speed as the crankshaft, and is employed to give a very rapid cut-off, large port area, and to prevent wear on the pistons affecting the volumetric efficiency of the engine.

Last year the engine control was effected by advancing or retarding the rotary valve by means of a quick thread screw device. This has been discarded in favour of an ordinary throttle to the carburetter. The carburetter is fixed on the side of the crank chamber instead of in its usual position, where it forms the lid of the crank chamber itself; it is thus readily accessible. This is an important point.

The inlet pipe, which is quickly detachable without the use of tools by means of special spring clip devices, is covered with indiarubber in order, as far as possible, to retain the heat and so enhance the mixing effect of the petrol and air.

Other interesting points of the Scott machine are the new silencer with double exhaust pipe and the foot brake operating on the tyre rim. The tank is very large and is fitted with a filler cap of record dimensions, viz., 3½in. in diameter. The wits have it that the idea is for the rider to sit in the tank in case of rain.

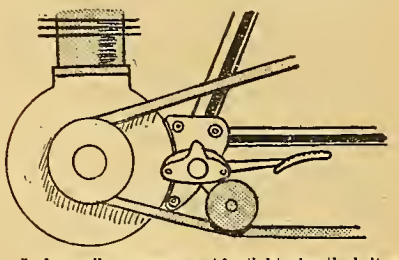
The gearing is absolutely standard so far as percentage difference is concerned, but naturally both ratios are higher than on the touring machines, being 3 to 1 on top and 4.8 to 1 on bottom. On the low gear a speed of forty-eight miles per hour is obtainable.



N. D. Slatter and the combined chain and belt-driven two-speed Alcyon he will ride in to-morrow's Junior T.T. This machine has behaved extremely well in practice.

Ivy-Precision.

H. C. Newman's 2½ h.p. Ivy-Precision is a stoutly built little machine which looks as though it could stand a deal of knocking about. For all that it is a marvellously speedy little mount. The engine is the standard lightweight model, 70 mm. bore × 90 mm. stroke, and is principally notable for the patent force feed device which Newman has fitted to the carburetter—an Amac. From the timing gear case a pipe, with a bulb valve at its foot, is led to the air inlet underneath the jet. The effect of this is that on the down stroke of the piston the



Jockey pulley arrangement for tightening the belt on H. C. Newman's Ivy-Precision.

compression in the crank chamber forces a stream of air past the jet at high velocity and so materially helps to atomise the petrol. According to report this simple little contrivance has a remarkable effect on petrol consumption, whilst it is also claimed to keep the engine much cooler than would ordinarily be the case. This is another machine on which the brakes have received adequate attention, there being two separate foot brakes on the belt rim as well as the front rim type.

Newman is using the Brampton gear, but employs a foot-controlled belt tensioner in connection with the variable pulley. It consists simply of a grooved roller mounted on a roller-bearing spindle and carried by a crank pivoting on the footrest bar. To tension the belt the pedal is simply depressed. Under normal conditions this roller is not working and is out of the way. It is not suggested that it is a necessary adjunct to the gear, but simply that on the lowest gears it may prove useful and cannot do any harm.

PRACTISING ON THE COURSE.



J. Gibson (Trump-Jap) bringing in J. Harrison Watson, who suffered a spill on the mountain road and bent his forks.

Wednesday, June 19th.

Very few of the riders and machines have arrived yet, and in consequence the official opening morning of practice was rather tame. Douglas M. Brown (2¾ Humber), P. W. Owen (2¾ Forward), J. R. Haswell (3½ Triumph), and Quentin Smith (3½ Triumph), were the only riders out, and all were content with a single circuit at a very moderate speed. Rain poured down through the whole of Tuesday night, and this fact no doubt deterred the others from practising. As a matter of fact the general opinion was that the roads had stood their sousing very well indeed, but that part of the course that lies between Kirk Michael and Ramsey is treacherously greasy under the trees, and rather rough going at that.

The improvements to the course, which have been made by the Highway Board, and which were illustrated last week, are much appreciated. The road over Quarter Bridge is now nearly twice as wide as it previously used to be. Surveyed from the hill down which one descends to it, the bridge still looks formidable, but its safety has been enhanced out of all knowledge, and provided reasonable care be used it can be negotiated at a fairly good speed. The work has cost the Highway Board a matter of £1,200, and the competitors can congratulate themselves upon reaping the immediate benefit, since, as it has only just been completed, the surface is smooth hard Tarmac, which will be moderately skid proof in any weather.

The other improvement, also illustrated last week, viz., the widening of the road opposite Mr. Hall Caine's residence, Greeba Castle, was most desirable. The bend here was very deceptive, especially as it was partially obscured by trees. As a danger spot it has now ceased to exist, and thus one of the nastiest sections of the course has been removed.

The marking of the course is now finished, and it has been done in a very thorough manner. Three hundred yards before each danger zone, such as Braddon Bridge, Sulby Bridge, etc., a large blue banner is slung across the road at a suitable height bearing the following inscription in monstrous white letters, "Such and such a place 300 yards." Last year wind, weather, and hay carts played havoc with the banners, and in order to prevent a repetition of this arrangements have now been made whereby the banners are erected every morning and taken down immediately after the conclusion of practice. There are altogether twenty-two marked places.

The Second Day's Practice.

Thursday, June 20th.

A much better morning's practice was got in to-day, thanks to a decided improvement in the weather. It poured with rain yesterday afternoon, but during the night a brisk wind dried up the roads wonderfully. A number of competitors and machines arrived yesterday,



J. A. Hoffmann (Triumph) passing Woodlands. This point is near the start.

and most of the new comers were out betimes this morning. With the roads as they are, and at the beginning of things, nothing in the way of fast circuit times has been attempted, the best so far being about an hour.

The annual trouble with spectators on motor cycles has cropped up again. For some unexplainable reason some motor cyclists are riding round the course in the reverse direction. During this morning's practice a number of riders made complaint about meeting non-competitors coming in the opposite direction. A firm stand on the part of the officials must be made another year to remove this difficulty. This morning there was little or no mist on the mountain, but the sheep on the roads were troublesome.

Amongst the earliest out at Quarter Bridge were the Regal-Green and Regal-Precision riders, S. F. Garrett, H. C.



P. J. Evans and W. Creyton in full flight. Evans, it may be observed, has been using a speedometer during practice. The Quarter Bridge is seen in the background.

Practising on the Course.—

Mills, and J. W. Woodhouse. Harrison Watson and D. M. Brown (2¾ Humbers) soon after came along, and both showed excellent acceleration from the Bridge. The road to Braddon is in excellent condition, and offers one of the few opportunities at present for travelling all out. W. Jones and A. S. Jones were the next to appear on Rudge-Multis, which appear to be ordinary standard machines. Quentin Smith and J. R. Haswell (Triumphs) were also early out and found the going better than yesterday. P. W. Owen (Norton) was in slight trouble with his gear adjustment, but from the sound of the engine exhaust he can have little to complain of in the way of power. The Norton has a characteristic long-stroke exhaust, very reminiscent of a ported cylinder, and shows excellent powers of acceleration.

The brothers Alexander were out on two-speed 7 h.p. Indians. Evidently the policy of practising on a hack to save the hunter which worked so well with the Indian team last year is being judiciously followed by these riders. P. J. Evans (2¾ Humber), the Junior T.T. Cup holder, was also out. S. F. Garrett (Regal-Green) picked up the first puncture on the course near Quarter Bridge. J. W. Woodhouse found himself going too fast at Sulby Bridge, and wisely turned into the side road. H. Petty (2½ Singer) jumped the kerb at Ramsey, and rode on the footpath to avoid the watersplash.

The greasy parts of the road were so bad that great care was exercised by all.

Friday, June 21st.

A beautiful evening on Thursday, warm and fine, with a valuable drying wind, gave promise of better road conditions this morning, but, unfortunately, a heavy shower fell during the night, and the course has therefore had no chance to recover. From appearances at the time of writing, more rain to-day seems imminent. What is wanted is, of course, a spell of fine weather, winding up with a light shower the day before the race, sufficient to lay the dust. As it is, the greasy parts of the course are getting worse and worse, and in view of this fact it is really surprising that such good times have been made.

This morning the police turned up at Quarter Bridge, and caused the crowd to leave the fairway clear. Exactly why it should be so is not obvious, but for some reason or other there are always at Quarter Bridge youths who persist in doing figures of eight on push-bicycles in the middle of the road just as a competitor is coming down the hill.

Another unexplainable mystery is this—that several motor cyclists, both competitors and non-competitors, lose all sense of responsibility the moment they set foot on Manx soil, or, indeed, on Manx steamer deck. Yesterday quite an amount of trouble was caused by competitors who refused to show their licences to the police officer who meets every boat, on the ground that at the time of asking they were not riding their machines. Of course, the police stopped these men immediately they mounted their machines.

On the whole, however, the tolerant inhabitants of a thoroughly sporting little island will not have so much to grumble at this year, as stringent regulations have put a stop to most of the futile "blinding" which used to take place. Mr. H. P. Beasley, the A.C.U. assistant secretary, has maintained authority very well indeed under rather difficult circumstances.

Why competitors cannot take the trouble to read the regulations of a race which must cost them from first to last a very considerable sum of money is one of those things which will only be understood in the millennium. The regulations say that ear-rolls must be worn at practice (a very wise provision indeed), official number plates must be carried, and competitors must not be on the course except between 5 and 7 a.m., yet only constant watchfulness prevents a breach of such simple rules by quite a number of riders.

The Silencer Question.

It is rather unfortunate that the "silencer" farce is still being played this year. According to the regulations issued by the A.C.U., "efficient silencers *must* be fitted during practice." Now the quietest of all the machines can be heard literally for miles when its throttle is opened, and it is really very difficult to see how some of the engines could be made much noisier for the actual race (wherein silencers are not required). On the basis of cubic capacity, this year's machines seem slightly noisier than they were last year, and therefore the paragraph which states that "any competitor . . . whose machine makes any noise likely to inconvenience other users of the highway will render himself liable to disqualification" might just as well have been left out.

This morning the following riders were out, some of them doing two circuits, but most of them only one: P. W. Owen (Norton), J. L. E. Emerson (Norton), Harrison-Watson (Humber), P. J. Evans (Humber), A. H. Alexander and J. R. Alexander (Indians), J. A. Hoffmann (Triumph), John Gibson (Trump-Jap), J. Haslam (2¾ Douglas), S. F. Garrett (Regal-Green), H. C. Mills (Regal-Green), N. D. Slatter (Alcyon), I. B. Hart-Davies (Triumph), Hugh Mason (N.U.T.), R. Ellis (N.U.T.), H. Petty (Singer), A. S. Jones and W. Jones (Rudges), J. Stewart (Douglas), H. C. Newman (Ivy-Precision), S. L. Bailey (Douglas), and E. V. Pratt (O.K.-Precision).

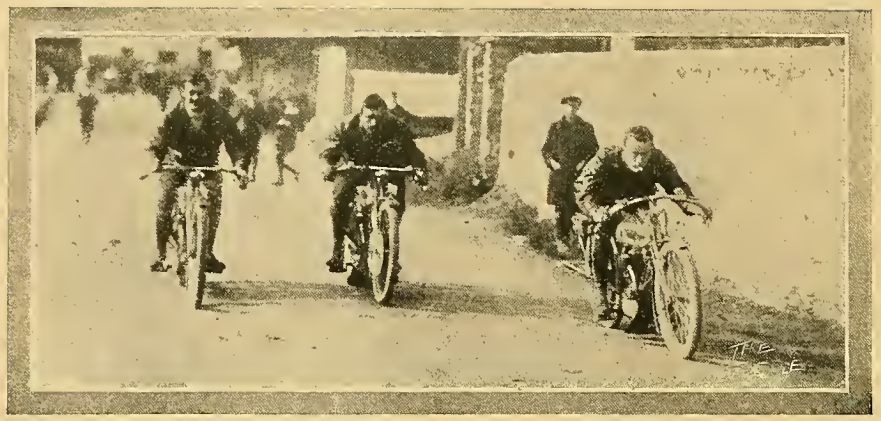
Several competitors got round in just about one hour, by far the best time being the unofficial one of 49m. credited to P. W. Owen. If this is correct, it simply shows the value of knowing the course, as Owen has done two laps each morning so far—more than anyone else.

S. F. Garrett created a mild sensation by taking Quarter Bridge at a good speed, and swinging down the Castletown Road instead of remaining on the course. This would have been all right except for the obvious fact that the Castletown Road



T.T. RIDERS PRACTISING ON THE COURSE.

1.—Percy Butler (Triumph). 2.—F. Philipp (Scott). 3.—J. R. Alexander (Indian). 4.—H. Reed (Dot-Jap). 5.—H. A. Collier (Matchless). 6.—W. Heaton (Dot).



Quentin Smith, J. W. Adamson, and C. R. Martin practising on the T.T. course on Monday morning last
All are riding Triumphs in the senior event.

was almost blocked with competitors' machines, cars, and spectators. Garrett kept straight on at the latter, who, fortunately, jumped aside in time. As luck would have it, there was nothing else in the way. As he seemed particularly pleased with his exploit we will not spoil his triumph by reproducing the remarks made at the time by competitors and spectators alike.

Beyond the facts that Harrison-Watson ran into the bank somewhere near Hillberry and crumpled up his forks, and that Garrett's engine smashed something in its "innards," nothing of note happened.

Slatter was mounted on a standard single-cylinder Alcyon—not the machine on which he will race.

Saturday, June 22nd.

On Friday night it poured with rain again, and the roads were very little improved by practising time this morning. The number of competitors who turned up was small. Amongst others, the following, however, braved the elements: S. F. Garrett (Regal-Green), A. H. and J. R. Alexander and J. F. Sirett (Indians), P. W. Owen (Norton), J. Woodhouse (Regal-Precision), A. Hall (Rudge), J. W. Adamson (Triumph), Hart-Davies (Triumph), J. R. Haswell (Triumph), H. C. Mills (Regal-Green), D. C. Bolton (Rudge), Quentin Smith (Triumph), F. Philipp (Scott), A. S. Jones and W. Jones (Rudges), J. L. E. Emerson (Norton), H. C. Newman (Ivy-Precision), and N. D. Slatter (Alcyon).

Unquestionably the most admired man of any was Frank Philipp, who arrived yesterday. The way his machine flies away from the mark with a perfectly startling acceleration compels everybody's attention and admiration. Philipp has done the very wise thing of giving his machine a thorough bucketing before bringing it over. It has already run over 1,200 miles, mostly over Welsh hills, and is consequently perfectly run in.

Unfortunately, F. A. Applebee had the very bad luck to smash the front forks of his Scott in taking it to Ramsey. The accident occurred at a turning, and might easily have been worse. The front wheel was buckled out of all shape, but the frame stood the strain all right. Happily, Applebee escaped with a few bruises.

Little of note occurred this morning, nearly everybody contenting himself with one steady lap. Newman broke a valve on the mountain, whilst Slatter took a toss at Windy Corner.

Monday's Practising.

Monday, June 24th.

Practising continued this morning in fine weather and on good roads. The brothers Collier, Percy Butler, and the brothers Bashall made their first appearance on the course. Alan Woodman, who has been debarred from racing by the A.C.U. on account of his infirmity being likely to cause danger to other competitors, also rode round.

The following lap times were made: H. A. Collier (Matchless) 49m., A. H. Alexander (Indian) 50m., J. R. Haswell (Triumph) 52m., D. M. Brown (Humber) 55m. Unfortunately, a rather nasty accident occurred at Kirk Michael corner. H. H. Huckle (Zenith) struck the bank and was reported to have suffered slight concussion of the brain. He was taken to his apartments in Douglas by the doctor. S. F. Garrett (Regal-Green) fell at Sulby Bridge, but, fortunately, was not injured. A. H. Alexander (Indian) also hit the bridge. On the mountain road H. C. Mills (Regal-Precision) fell and broke the frame of his machine and buckled a wheel. C. R. Collier (Matchless) made one circuit, but stopped to help Huckle.

W. H. Bashall (Douglas) informed us that it is possible a four-speed gear box may be fitted to the Douglas machines.

C. R. Franklin (Indian) arrived fresh from his last week's Brooklands performance, and at once commenced practising in earnest.

Police Regulations.

Competitors, as they arrived on the boats at Douglas, were met by a police representative and asked for their driving licences, particulars of their machines, and where they intended to stay. This did not do away with the necessity of registering with the Isle of Man Highway Board and also the Auto Cycle Union. Arrangements were made whereby it was possible to get petrol on the pier so that a long push to the nearest garage was obviated. Motor cyclists who cross this week will welcome this convenience, and we understand that their thanks are due to the Auto Cycle Union, whose assistant secretary, Mr. H. P. Beasley, was on the island all last week making this and similar arrangements.

A private road through Ramsey is giving competitors a shaking during their practice spins, but the surface may be remedied before the races are run.

Tourist Trophy Race Awards.—Gold medals will be awarded to all competitors who complete the course within half an hour of the first man home.

N.S.U.

None of the N.S.U. machines entered for the races had been seen on the Island by mid-day on Tuesday. From what we can learn, it is extremely improbable that N.S.U. riders will take part, which is to be regretted.



S. L. Bailey, the Australian, and E. Kickham, of Bristol, who are much fancied riders of Douglas machines in the Junior T.T. Both have also entered for the Senior Race on Monday

The Next Mobilisation Test.

The result of the second mobilisation carried out at Maidenhead on the 9th inst. was so satisfactory in the valuable statistics it afforded that most of the criticisms hitherto levelled at motor cyclists from the military point of view have been withdrawn.

It should be remembered that these tests are carried out with a very definite object, viz., that of establishing the value of the motor cycle as an instrument of war—incidentally they provide a considerable amount of sport and pleasure for those who participate.

The next test will be held in the vicinity of Nottingham on Sunday, July 7th, the hour of concentration being fixed for 1 p.m. A novel feature will be introduced on this occasion, for participants will have to ride in teams to the place of rendezvous. Each team will travel in whatever formation the senior organising officer present deems most suitable. There will be seven teams in all made up as under, each having its own rendezvous and allotted hour of starting.

Team.	Rendezvous.
1. London and S.E. England	Tottenham Cross.
2. S.W. England ...	Newbury G.W.R. Station.
3. West	G.W.R. Station, Cheltenham.
4. East Anglia ...	Market Place, Royston.
5. S. Midlands ...	*The Motor Cycle* Offices, Coventry.
6. N. West	L. and N.W.R. Station, Crewe.
7. N. East	N.E.R. Station, York.

All those who wish to participate in this test should send three penny stamps, together with a stamped postcard, addressed to themselves made out as follows:

I propose to join team No.....
at .....
at (Time to be filled in by hon. sec.).....
to arrive there at 1. p.m.
Make of machine and h.p.....
Hour of actual arrival at team rendezvous.....
Hour of actual arrival at general rendezvous.....
Name .....

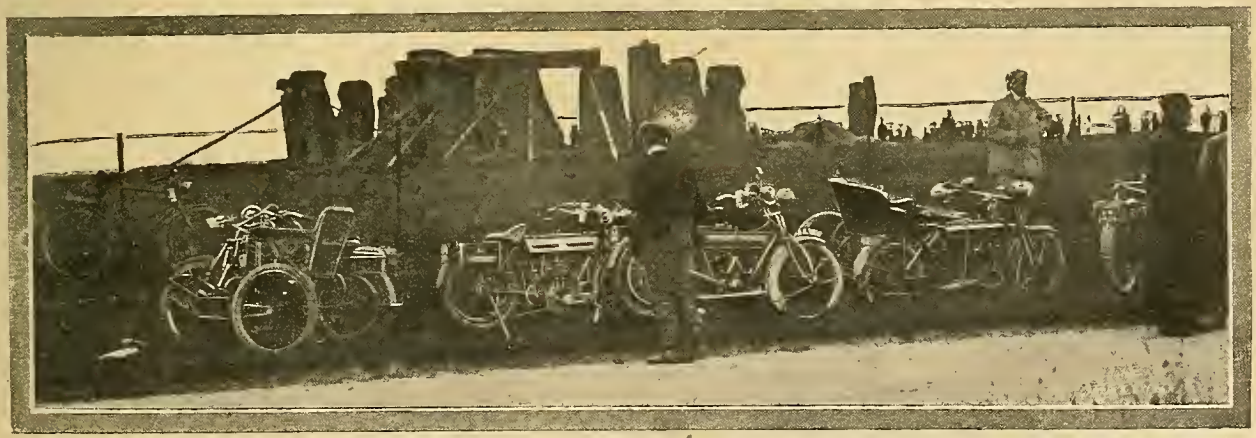
Entry postcards should be sent to the hon. secretary, the Legion of Cyclists, 128, Jermyn Street, W.

TYRE MAKERS AND THE A.C.U. SIX DAYS' TRIAL.

At the time of going to press, we understand that at a meeting of the Tyre Section of the Manufacturers' Union, the tyre makers present, after some discussion, unanimously decided not to enter any of their tyres for the test which is to be run in conjunction with the Six Days' Trial, the reason given being that the expense would be too heavy. This decision is very much to be regretted. However, we understand that the A.C.U. will, if it cannot be dealt with direct from the trade, obtain tyres elsewhere and make awards in connection with their performances.

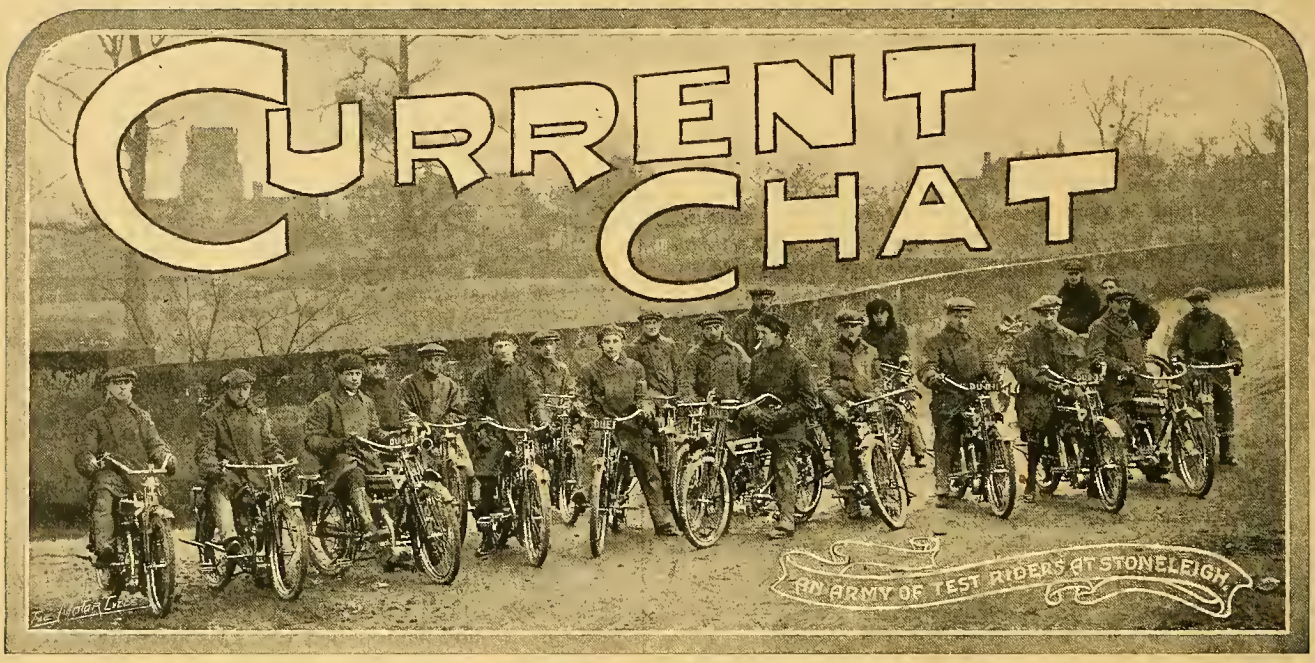
Round the Coast of Devon and Cornwall.

THIS strenuous trial was run off by the Exeter and District M.C.C. on the 14th and 15th inst. The following riders started from Exeter at 10 p.m.: T. H. Birdshall (3¾ h.p. Premier), B. Rae (B.S.A.), P. Pike (3½ h.p. Humber), S. Saunders (Rudge multi), E. Chesnutt (2¾ h.p. Douglas), W. Abbot (Bradbury two-speed), E. Babington (5 h.p. Bat), J. Milner (Rudge multi), E. Wood (3½ h.p. Humber), F. Broadbear (Premier), H. Maurice (Premier), E. T. Arden (Premier), A. Arden (Premier), W. E. Roots (3½ h.p. Singer three-speed), L. Martin (Singer), H. Tremlet (Rudge), and L. Long (Zenith), and fifteen arrived to time at Plymouth where a stop of fifteen minutes was allowed. The next stop was Truro, where Woods retired with engine trouble. The fourteen survivors having breakfasted at Penzance, followed the North coast as far as Bideford without incident. Here Long retired through valve trouble. Now came the severest part of the course, but the riders were equal to the occasion, though Lynton Hill was in a shocking condition. After tea at Lynmouth, Countisbury Hill and the descent of Porlock were safely accomplished by the thirteen survivors. Roots retired at Minehead owing to gear trouble, which was unlucky, as this rider had come from Coventry to compete and had finished the hardest part of the course. Twelve riders passed through Tiverton and Sidmouth, most of them making a clean ascent of Peak Hill. Arden was, unfortunately, stopped by a seized engine near the finish. Pike was the first to arrive at Exeter, quickly followed by Saunders, Babington, Broadbear, Arden, Abbot, and Maurice, who all arrived within schedule time. Chesnutt, who rode the only lightweight to complete the course, was a few minutes late. Birdshall came in with a flat tyre, as he had punctured four miles from home. Saunders, Maurice, and Babington claim non-stop runs. Considering the weather—it rained for twelve hours—the results were excellent, and the riders are to be heartily congratulated on their performance on this stiff coast ride.



LONGEST DAY PILGRIMS AT STONEHENGE. June 21st being the only day in the whole year that at sunrise a shadow is cast by the Heel Stone across the Altar Stone at Stonehenge, it was made the occasion of a pilgrimage at daybreak by members of the Universal Bond of the Sons of Men and many Americans. Our picture shows a number of motor cycles whose owners rode in before sunrise to be present.

CURRENT CHAT



A T.T. Race in the Wet.

Up to the present, a wet day for the T.T. Race is unknown, but it seems highly probable, in view of the fact that it has rained every day this month, that this chain of luck will be broken.

Hill-climbing.

F. C. North writes to inform us that his 3½ h.p. Ariel and sidecar recently took four passengers up Rose Hill from a standing start. The performance was witnessed by numerous cyclists and motor cyclists.

M.C.C. Fourth Race Meeting.

The fourth private race meeting of the Motor Cycling Club will be held at Brooklands on Saturday, July 6th, and promises to be as successful as its predecessors. There will be twelve events, including one for cyclecars. Racing will commence at 2 p.m.

Bwlch-y-Groes and Sidecars.

Since writing the notes on page 724, we have heard that J. Mills, of Rhyl, with George Yarnold as passenger, climbed the pass on his 6 h.p. Enfield sidecar on the 21st—the same day as R. Lord. The ascent was witnessed by two others. We are now exercised in our minds as to who was really the first to reach the summit of the pass on a sidecar, Lord or Mills.

The Liverpool A.C.C. at Bwlch-y-Groes.

Fired by the reports of successful ascents of Bwlch-y-Groes, the Liverpool A.C.C. arranged a trip to the hill on the 23rd inst., as mentioned elsewhere in this issue. Of a good number who took part, six riders made clean ascents. The star performances were certainly those of L. Mogridge, who made a clean ascent on his 3½ single-geared Mead-Precision; N. Brown, who took up a passenger on his 7 h.p. two-speed Indian; and S. W. Philpott, who made a fine ascent on a 2¾ two-speed Humber—the first successful lightweight.

Birmingham Reliability Trial.

Dr. B. Fawssett (8 h.p. Chater-Lea and Lowen sidecar) won the South Birmingham M.C.C. reliability trial last Saturday, gaining the gold watch, S. K. Jones (3½ L.M.C.) being second, silver watch winner, and E. Roberts (3½ Triumph) third, bronze medal. 85% of the competitors climbed Sunrising, and 90% got up Edge Hill.

Arthur Moorhouse Memorial Fund.

The following are among the more recent donations to the above fund: Per S. F. Garrett (card 316), £2 6s.; Stockport and District M.C.C., £2 2s.; some of his friends at Waygood's, £15; Zenith Motors, Ltd., £5 5s.; Bristol M.C.C., £2 2s.; Bosch Magneto Co., £5 5s.; J. W. G. Brooker, £1 1s.; and E. Gwynne, £2 2s. The fund now totals over £300.



NEAR THE TOP OF BWLCH-Y-GROES, FROM THE DINAS MAWDDWY SIDE.
This severe mountain climb, which has been much talked of since the Coventry and Warwickshire Club went there at the beginning of the month, was visited by the Liverpool A.C.C. this week.
L. Mogridge (3½ Mead-Precision) is seen going well near the top



LONDON TO EDINBURGH.
HIGHEST AWARD
again won on

PALMER
MOTOR CYCLE TYRES.

4 GOLD MEDALS SINGLE JOURNEY

WELLS CUP
CLARK CUP
SPECIAL GOLD MEDAL

The three awards were taken by Mr. F. Smith with his Clyno and Sidecar fitted with Palmer Tyres. Mr. Smith makes all his successes on Palmer Tyres, thus testifying to the confidence experienced riders have in the reliability of Palmer Tyres.

4 GOLD MEDALS DOUBLE JOURNEY

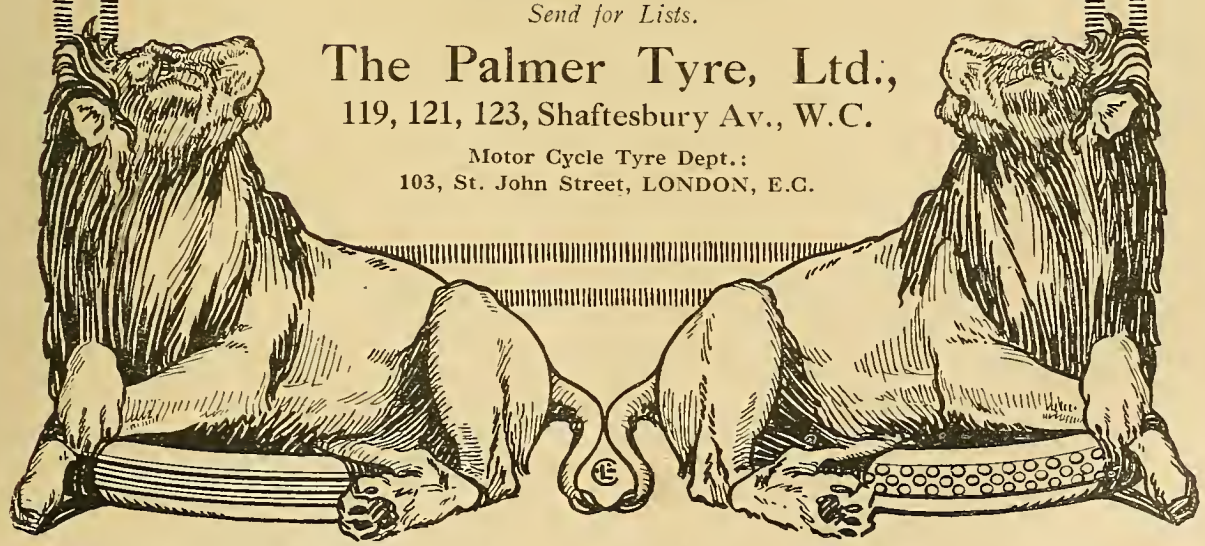
N.W. London Open Passenger Trial.

TWO SILVER CUPS
won by Users of Palmer Tyres.
Mr. F. SMITH and Mr. A. C. ROBBINS.

Send for Lists.

The Palmer Tyre, Ltd.,
119, 121, 123, Shaftesbury Av., W.C.

Motor Cycle Tyre Dept.:
103, St. John Street, LONDON, E.C.



HUTCH TY

"DISTINCT FROM ALL OTHERS."

THE SEVEREST AND FINEST TEST HAS BEEN



IMPORTANT NOTICE.

The Tyres used in the above event, and in every Competition or Trial are identical in every respect to those obtainable from any bona-fide Agent. : :

THE HUTCHINSON TYRE CO.,

In answering this advertisement it is desirable to mention "The Motor Cycle."

A New Name.

The Leeds is the title by which the 3½ h.p. machine made by Messrs. Job, Day and Sons will in future be known.

Good News.

Belts as well as tyres are to be officially tested in the A.C.U. Six Days' Reliability Trials, to take place in August on Devon and Somersetshire roads.

T.T. Rules Explained.

A meeting of T.T. competitors and officials will be held at the Setton Hotel, Douglas (A.C.U. headquarters) this evening (Thursday) at six o'clock. The meeting will give an opportunity of clearing up any doubts regarding the interpretation of the regulations. Armlets and instructions will also be issued to officials and members and to the competitors.

Road Race in South Africa.

There was some good riding in the Orange Grove to Pretoria and back road race on the 12th ult. G. T. Taylor (T.T. twin Bat) was expected to win, but he was put out of the running by belt trouble. The winner rode very well. Results: 1, A. Howie (T.T. Rudge), 1h. 8m. 37⅗s.; 2, R. Cotter (T.T. Triumph), 1h. 12m. 27s.; 3, A. Siems (B.S.A.), 1h. 17m. 16⅗s.

How the Railways treat Motor Bicycles.

The Great Northern Railway Company lately issued a counterfoil of consignment note and waybill for live stock by passenger train No. 370 to a member of our staff and described the live stock as *one motor bicycle*.

Was the author of this interesting document the immortal porter of a country station, who, on looking up the rates for a live tortoise, ejaculated: "Rabbits is dorgs, and cats is dorgs, but this 'ere seems to me ter be a bloomin' insect."

The New Sunbeam.

Like most other large firms who have entered the motor cycle industry at a late stage, John Marston, Ltd., of Wolverhampton, are carrying out their tests with motor cycles most carefully. For months motor cycles bearing the Sunbeam transfer have been seen undergoing tests on the roads in the neighbourhood of the works, and we are given to understand that a 2¾ h.p. single-cylinder mount, with two-speed countershaft gear and chain transmission enclosed in oil bath cases, will be the model finally adopted. The specification is certainly a tempting one for all-weather solo work.

Machines in the T.T.

It is interesting to compare the numbers of the different makes of mounts entered for the T.T. The Triumph has been chosen by nine riders in the Senior race, Indian by five, Rudge, Matchless, and N.S.U. four, Singer and Blumfield three, Dot, Scott, Regal-Green, Norton, Zenith, and Douglas two, and Trump-Jap, Regal-Precision, Cayenne, Cleveland, and Rex one each.

In the Junior race Humber and Douglas head the list with five each, then come N.S.U. four, Singer three, Alcyon, Newcastle-upon-Tyne, and Forward two, Ivy-Precision, and O.K.-Precision one each.

FUTURE EVENTS

June 28.—JUNIOR TOURIST TROPHY RACE.
July 1.—SENIOR TOURIST TROPHY RACE.
„ 6.—Dublin M.C.C. Open Hill-climb.
„ 15.—Irish Open End-to-end Reliability Trial.
„ 20.—B.M.C.R.C. Race Meeting.
„ 20.—Liverpool A.C.C. Open Speed Trials.
„ 20.—South Wales A.C., and Cardiff M.C.C. Open Speed Trials at Porthcawl.

Jake de Rosier Fund.

The above fund, started by *Motor Cycling*, of Chicago, U.S.A., has now reached £50. It will be remembered that some months ago Jake de Rosier in a match at one of the saucer tracks in America sustained serious injuries, and is still in hospital.

Stolen Machines.

On the evening of Sunday, the 16th inst., two 3½ h.p. Rudges, one a 1912 multi, registration AM384, machine No. 641370, engine No. 2748, were stolen from Stamford Hill. The other is a six speed 1911 model. Information should be given to the Liverpool and Victoria Insurance Corporation, 45, Holborn Viaduct, E.C.

Experimental Cyclecars with Double Engines.

There are a couple of experimental cyclecars running about the Coventry district fitted with two 3½ h.p. standard single-cylinder motor cycle engines *à la* the Quadrant carette of 1905. These machines are the product of large local firms, but there is no intention of adopting them as a marketable article—at any rate until they have undergone exhaustive tests on the road.

A Detailed Report Next Thursday.

Next Thursday's issue of this journal will contain a detailed description of the Tourist Trophy Races written and illustrated by our own staff.

Reckless Driving—A Warning.

We understand that the Birmingham police are about to take active measures against motor cyclists for driving recklessly.

A.A. and M.U. General Meeting.

The annual general meeting of the Automobile Association and Motor Union will take place at the Hotel Cecil (Richelieu Room), London, on July 1st at 12.30 p.m.

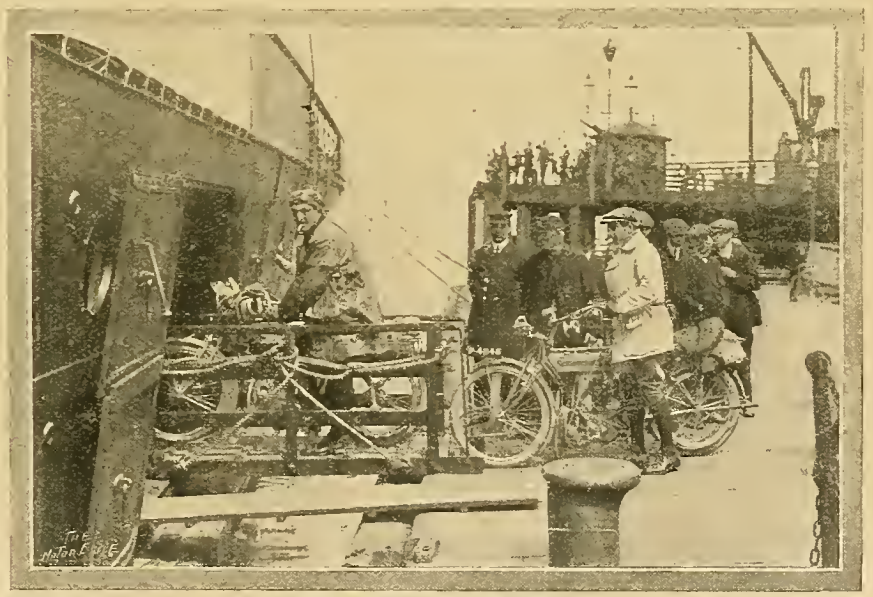
B.A.R.C. Meeting.

The tenth short motor cycle handicap will be run at the B.A.R.C. meeting at Brooklands on Saturday, July 13th. This is a race for all classes of motor bicycles, distance five and three-quarter miles; the entrant of the winner to receive ten sovereigns or cup at option, the second five sovereigns, and the third three sovereigns. Entries close July 2nd and should be addressed to the secretary Carlton House, Regent Street, S.W

Scottish Six Days' Trials.

The entries for the Scottish trials to date are as follow: B. Allan Hill (7 Indian), Hugh Gibson (3½ Bradbury sc.), W. D. South (3½ Rudge), C. W. Meredith (3½ Bradbury), Vernon Taylor (3½ Rudge), S. J. K. Thomson (8 Bat sc.), Miss Muriel Hind (6 Rex), T. Silver (3½ Quadrant), L. E. Cass (4½ Quadrant), J. Henderson Begg (3½ Rudge), J. S. Holroyd (2½ Motosacoche), and H. Le Vack (2½ Motosacoche).

The hon. secretary of the Edinburgh and District M.C., 32, Alva Street, Edinburgh, will be glad to hear from any motor cyclists who might be willing to assist the club in checking.

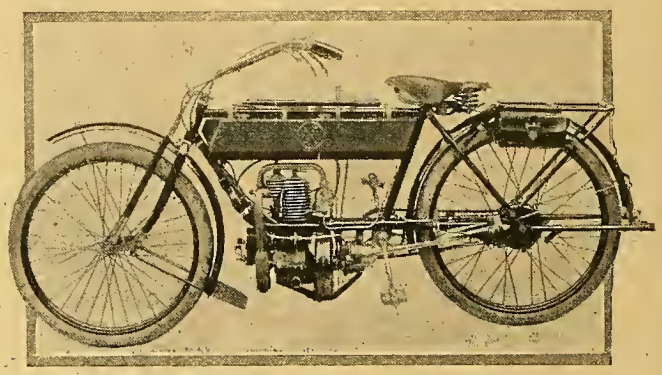


THE MECCA OF MOTOR CYCLISTS.

Hardly a day has passed this month without motor cyclists crossing to the Isle of Man. Above may be seen a Rudge and Triumph rider wheeling their machines aboard the "Viking" at Liverpool. They had ridden from the Midlands.

A NEW F.N. MODEL.

The engine of the new model 2½-3 h.p. F.N. has a bore and stroke of 65 × 86 mm. = 285 c.c. The tank is now much wider and fitted with large glass top filler caps. The telescopic sliding joints of the spring forks have been made grease and dust proof, and grease caps are provided to the spindle both on the fixed and movable portions of the forks. The crank case is provided with two windows, opposite each other, so that it is possible now to see right through and thus to gauge the level of the oil with greater certainty. The new oil pump is larger than the old one. When the plunger is pulled up a powerful spring returns it slowly to its original position and forces the oil through a sight feed below the tank. The frequency of the drips can be regulated by turning the pump handle to the left. The frame of the machine is 2in. lower than previously, and is now only 17in. in height. The whole machine is beautifully made, and is a splendid example of the excellent work of the F N. Company.



The New 2½-3 h.p. single-cylinder two-speed F.N.

RECORD BREAKING AT BROOKLANDS.

310 MILES IN 300 MINUTES.

On Thursday last, at Brooklands, C. B. Franklin, on a 7 h.p. Indian, No. 28, 998 c.c., succeeded in making a handsome addition to the list of records already held by the Hendee Co. He started at 11 a.m., in very windy weather, and during the ride there were two heavy showers. The machine was equipped with Hutchinson tyres, while Pratt's spirit and Wakefield Castrol oil were used. The records beaten were the following:

	mls.	yds.	m.p.h.
Two hours	131	1,735	65.99
Four hours	254	1,638	63.73
Five hours	310		62.00
Six hours	373	1,725	62.33

	h.	m.	s.	m.p.h.
250 miles	3	51	3	64.92
300 miles	4	42	31⅖	63.72
350 miles	5	36	2⅗	62.50

During the whole of this magnificent ride Franklin never failed to maintain an average of over 60 m.p.h., while several laps were covered at the enormous speed of 71 m.p.h. No mechanical troubles were experienced, the only stop being for refreshment and twice to change the tyres as a precaution.



AN IRISH RECORD BREAKER.

C. B. Franklin (7 h.p. Indian), who is the first motor cyclist to cover 310 miles within 300 mins.

BWLCH-Y-GROES (DINAS MAWDDWY) CLIMBED ON A SIDECAR.

EVER since the query we asked at the conclusion of our description of the last hill-climbing exploit at Bwlch-y-Groes (more commonly called Dinas Mawddwy), who would be the first to take a sidecar and passenger up this mountain pass, rumours of projected attempts have reached us, and we ourselves have been invited to observe no less than four attempts. The feat has now been accomplished, R. Lord twice successfully driving a 6 h.p. Rex Sidette to the summit of the pass on Friday last. To avoid confusion, we should explain that the real Dinas Mawddwy, climbed (?) by the competitors in the A.C.U. six days' trials of 1909, lies between the village of that name and Dolgelly. But this ascent, though severe, does not compare with Bwlch-y-Groes — the Pass of the Cross — which is nearly two miles long and is 1,790ft. above sea level. Approaching the hill with his standard gears of 4¼ and 8½ to 1, Lord tried his luck to gain an idea of the ratio required for success. Fortunately for him the gate was open, and he just managed to get to the 1 in 4 section before coming to a standstill. Descending again, he lowered the gear to 5 to 1, giving a 10 to 1 low gear, and this time was successful. The passenger's name was A. Clayton. He continued his way to Bala, and at the White Lion Hotel told the proprietor, Mr. William Owen, of his achievement. Mr. Owen, who weighs nearly 14 stones, at once accepted an invitation to occupy the sidecar seat in a further attempt, so Lord took all three up the Bala side of the pass on the Rex, and later climbed the noted Bwlch-y-Groes again with Mr. Owen.



How to get to Bwlch-y-Groes.

At the beginning of this week the Liverpool M.C.C. arranged a run to the hill, and though several motor bicyclists were successful, including E. F. Baxter (6 Rex), S. W. Philpott (2¾ Humber), and a rider of a 7 two-speed Indian; no member's sidecar was successful.

CLUB NEWS.

Wath and District M.C.

The above club held a successful hill-climb at Bromborough on the 15th inst. There were sixteen entrants. The fast and slow event was won by W. Kelly (P. and M.), second prize by W. Nicholson (3½ Campion).

Taunton and District M.C.C.

The 100 mile reliability trial, held on the 13th inst., was run in three sections, each starting and finishing in Taunton. Result :

1. T. Drayton (3½ Triumph), non-stop, error 85s.
2. G. F. Arnold (2¾ Motosacoche), error 116s.
3. A. H. Knight (2¾ Humber), one stop, error 22s.

Harrogate and District M.C.C.

The novel competition, which included, amongst other items, reliability, fast and slow hill-climbs, and brake tests, resulted as follows :

Solo Class.—1, W. Fawcett (2½ A.J.S.); 2, R. E. Davies (6 Matchless); 3, G. Hill (3¾ Scott).

Passenger Class.—1, W. Hill (3¾ Scott sc.); 2, C. A. Nettleton (3½ New Hudson sc.); 3, M. Kitchin (3½ New Hudson sc.)

Cumberland County M.C.C.

A very successful non-stop run, for which there were a dozen entrants, took place on the 15th inst., starting from Keswick at minute intervals. The competitors rode three circuits of Bassenthwaite Lake, and on each round were timed at the Pheasant Inn, Peel Wyke. Some heavy showers made riding to schedule time most difficult. Shaw (N.U.T.) and H. Robinson (B.S.A. T.T. model) tied by riding dead on time. These riders were again sent to do another circuit, and a secret check was taken where Robinson was 50s. ahead of time. At the finishing check Robinson was 5s. out and Shaw 10s. On the total count the latter proved to be the winner. J. W. Whitelock (N.S.U.) was third.

Ilkley and District M.C.C.

The reliability trial for the President's Trophy took place on the 15th and 16th inst. The course was *via* York and Pickering to Whitby, where the night was spent. On the next day the homeward journey was by the coast road to Saltburn, then to Guisborough and Thirsk (where there was a two hours' lunch stop), then over Sutton Bank and Riveaux Bank to Helmsley, Boroughbridge, Harrogate, and Ilkley. The hills on the route proved too much for some of the men. The result is as follows :

1 (winner of President's Cup), Morris Wood (6 h.p. Matchless), gross error 2¾ marks, handicap 3, nett error —¼.

2, J. Norman Longfield (3¾ h.p. Scott), gross error ½ mark, scratch, nett error ½.

3, Chas. Thackray (3½ Contrast-Jap), gross error 52¾ marks, scratch, nett error 52¾.



Middlesorough M.C. 200 miles Reliability Trial to Harrogate and back. A group of members at the start from Marton Bungalow.

Herts A. and Ae.C. (Motor Cycle Section).

A speed-judging competition will take place on the 6th prox. The competition will be held at the cross roads on No-Man's-Land, about three miles north of St. Albans.

Grosvenor M.C.C. (Manchester).

The result of the 100 miles reliability trial, held on the 16th inst. from the Swan Hotel, Bucklow Hill, Cheshire, is as follows: 1, J. Anderson (3½ T.T. Rudge); 2, J. Dawson (3½ T.T. Rudge); 3, A. Hopkinson (3½ Triumph).

Sheffield and Hallamshire M.C.C.

A novel competition was held on the 22nd inst., a race down Baslow Hill on the knock-out principle with the high-tension wires removed. Maximum gears and weights were fixed. Results: 1, Dan Bradbury (3½ Norton); 2, S. Sawer (3½ Premier); 3, F. H. Ronksley (3½ Rudge).

Newport (Mon.) M.C.

The results of the last competitions are as follows:

Flexibility Hill-climb.—1, W. C. Venn (Triumph); 2, W. Jones (James).

Petrol Consumption Trial.—1, O. Harris (T.T. Rudge), 160 m.p.g.; 2, W. F. Turner (T.T. Rudge).

Speed-judging Trial.—1, W. Watchell; 2, J. Foreman

Merionethshire M.C.C.

A petrol consumption test over a circular route of about forty-nine miles was held on the 19th inst., starting from Dolgelly. Results: 1, O. Hughes (3½ Arno); 2, Enion Pierce (3½ Rudge); 3, E. W. Hughes (3½ Triumph); 4, Arthur Williams (3½ Triumph).

Streatham and District M.C.C.

The official results of the reliability competition for the Julian Orde Cup, held on the 8th inst., are as follows: 1, W. L. Barratt (8 Bat sc.), 487 marks, wins the cup; 2, W. Pratt (P. and M.), 486, gold medal; 3, R. G. Mundy (Singer), 476, silver medal. Bronze medals: H. B. Willoughby 475, C. J. Feeney 468, A. G. Daw 466.

Carlyle (Chelsea) C. and M.C.C.

The club's first reliability trial was held on the 16th inst. Three prizes were offered for running nearest to the schedule time (watches and speedometers barred). The winners were: 1, G. T. Hopkins (6 Zenith), lost 4½ marks; 2, A. J. Brookes (3½ Premier), lost 5 marks; 3, F. Priston (3½ Humber), lost 11 marks.

Westmorland M.C.C.

The President's hill-climb took place at Orton Scar on the 15th inst. The knock-out competition was won by A. Moffat (6 Zenith), fastest time of the day. G. W. Braithwaite (3½ Zenith), fastest time on a single-cylinder. S. Pearse (2¾ N.S.U.) won Lord Lonsdale's Challenge Cup.

Western District M.C. (London).

The results, subject to confirmation of the annual hill-climb, worked out on the formula $\frac{W}{C \times t^2}$ as recommended by *The Motor Cycle*, are as follow: 1, W. F. Ritchie (3½ h.p. Bradbury), 340; 2, F. W. Ritchie (8 h.p. Matchless), 290; 3, G. D. Green (2¾ h.p. Douglas), 286.

Flexibility Hill-climb.—Result: Class I.—1, A. C. Robbins (2 h.p. Humber); 2, W. F. Ritchie (3½ Bradbury). Class II.—1, E. S. Ritter (2¾ h.p. Douglas); 2, G. D. Green (2¾ h.p. Douglas). Class III.—1, H. Butler (9 h.p. Chater Lea-Jap and sc.); 2, F. Eagle (6 h.p. N.S.U. and sc.).

Dublin and District M.C.C.

The novices' reliability trial on the 22nd inst. from Dublin to Maryborough and back brought out a field of fifteen riders. Rain fell throughout.

The following finished the course: J. Livens (3½ h.p. Rudge), P. Beattie (3½ h.p. Rudge), J. Bradley (2¾ h.p. Douglas), B. J. Gogarty (3½ h.p. Triumph), W. J. Towell (3½ h.p. Rudge), B. Hartmann (3½ h.p. Rudge), V. J. Farrell (3½ h.p. Triumph), H. T. Carroll (3½ h.p. Singer), W. G. Greene (2½ h.p. A.J.S.), H. A. Conneff (3½ h.p. Triumph), and J. S. Mathews (3½ h.p. Triumph).



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Road Conditions between Kew and Richmond.

Sir,—The bad condition of this road has been caused by motor traffic. In the old days of the horse trams it was all that could be desired, but since the motor 'buses invaded Richmond regularly the road has got into a scandalous condition, and I think it is high time the authorities were asked by the R.A.C. or A.C.U. to make it fit for modern traffic. Knowing the above and also Honister Pass, which "Injured Ancient" referred to, I can state that the surface is "not yet" quite so bad as Honister, but if nothing is done it may be ere long.

I would recommend motorists going from Kew Bridge to Richmond to turn into Mortlake Road after passing Kew Green. Then take the first turn to the right, which leads on to Sandycombe Road, and thence straight into Richmond. It is very little farther than by the main road, and is certainly much more comfortable for travelling over.

W. B. LITTLE, Captain Cumberland C.M.C.C.

Cyclecar Design.

Sir,—I have pleasure in enclosing a photograph of a registered design of the H.S.M. two-seated cyclecar which I have recently designed and built.

This machine is mounted on three wheels, with spring forks to the front wheel and semi-elliptic springs to the rear axle, absorbing all road shocks.

It is fitted with 7-9 h.p. J.A.P. engine, 9in. leather to metal clutch, Chater Lea three-speed gear box, wheel steering, coach-built metal panelled body, and adjustable windscreen.

I have given it a severe testing on the road, and the results have been very satisfactory. The vibration is very slight, and, although I have driven it over every condition of road, both wet and dry, I have never had the slightest skid or side-slip.

With my wife as passenger, our total weight being just over 24 stones, the vehicle has never yet refused a hill.

The machine can be turned in its own length.

F. HELLENS.



The H.S.M. double seated sidecar.

The Danger of Uncontrolled Dogs.

Sir,—I am glad Mr. Wilks (N.C.U.) is taking up the question of dogs, but would it be any good to report the matter to a policeman I was cycling through Ll—— the other day and a policeman's dog chased me for some distance and the owner did not seem to try to get him back until I shouted to him, and he was a sergeant too. Dogs are the greatest danger to motor cyclists and something should be done.

D.M.D.

Sir,—I think the suggestion of having a "black list" for dogs a very good one, and I am sure if motor cyclists will take the matter up, as suggested by Mr. Wilks, that we shall very soon see a great reduction in the number of uncontrolled dogs on the road. You were good enough, about a year ago, to insert a letter of mine, in which I suggested the same remedy, but, unfortunately, it was not taken up. But I think now that Mr. Wilks has kindly offered to do the greater part of the work, we as motor cyclists have an opportunity that ought not to be missed. I am sure the result will be well worth the small amount of trouble. I, personally, shall be pleased to take it up, and I should like to know the address to which particulars may be sent.

S. H. MERRICK.

Should Ladies Race?

Sir,—The several letters *re* ladies riding in speed competitions appear to have been prompted by the regrettable accident to Miss Hough at Harley Bank, and the writers imply, or seem to take it for granted, that the accident occurred *because* the rider was a lady, and for that reason did not possess the necessary nerve or ability a present day hill-climb demands. I am in no wise in favour of ladies racing, preferring to see them engaged in less dangerous pursuits; neither do I imagine the average lady is so mentally and physically fit for the sport as the average man; nevertheless, I think it is due to those courageous fair ones, particularly Miss Hough and Miss Muriel Hind, to say that many male riders would need considerably to improve to equal some of their performances. With no desire to flatter, I maintain that a comparison of Miss Hough's cornering with that of the *majority* of the men riders in the first two classes of the Sutton Club event at Harley Bank put the men to shame.

A clean sweeping curve with the machine at the limit of angle, it appeared on the verge of a skid the whole way round, and yet no trace of nerves or hesitation—not a wobble—and the same in the second heat until she struck that slight dip in the road centre, which at that speed meant a certain skid or a wider curve. She took the latter, and the spectators, who had been warned, proved her undoing.

Here I would like emphatically to contradict a report that has gained currency to the effect that Mr. Frank S. Whitworth, the agent for the machine she was riding, was responsible for the accident, owing to his expressing dissatisfaction, and asking her to do better on her next ascent. This is a gross injustice. He asked her to be careful, and to cut out if she found she could not keep on the inside of the crown of the road. Will irresponsible gossippers and others please note this?

Motor cycling for ladies generally, touring or competing in reliability trials, seems in no way to detract from the womanliness of the participant; but hurtling at dangerous speeds with bent back and tense muscles in a hill-climb does not impress me with the sense of gentleness one likes to associate with the sex, although not implying that such denotes an absence of these attributes.

JAMES L. NORTON.

Should Ladies Race?

Sir,—With your permission I would again encroach on your valuable space to convey to Mr. Acton Hill my thanks for the information he so kindly imparts in your last issue, especially for informing me of woman's mission. Now I shall know. The suffragette shot is an unfortunate one, as at present I am one of the anti's and would much prefer a Kempshall cover to a vote. Where the coal strike comes in, I hardly know—leave that to Mr. Hill. Possibly he is a min(o)r. Perhaps if I did not know that Mr. Stiggins's duties partly consisted of reporting hill-climbs, it had occurred to me that he was not writing merely for amusement. You will forgive me, I am sure, if I fail to see the point of the boat incident. In my ignorance, I imagined that self-sacrifice was a matter of temperament, not of sex. And why (forgive my questioning) "the usual thing"? Most people only need to drown once (except we cats). If I do not appear sufficiently grateful for the solicitude which he evinces towards those ladies who fall off at 40 m.p.h., he must not feel hurt; it is only because—as the young lady said to the young man—"this is so unexpected."

(Miss.) MAY WALKER.

Power Required for Sidecar Work.

Sir,—A sidecarist who can claim first-hand knowledge of a 3½ h.p. and a big twin has only to give a little advice on the question, when it immediately calls forth a host of epistles telling the readers what the writers have been doing in the way of climbing hills, etc. What do they expect to do? A 3½ h.p. machine to-day can be geared down to a farce, and, theoretically (putting aside friction in the gears, etc.), can be made to haul a heavy commercial load. But air-cooled engines get tired and hot and were never intended for hauling purposes, and that is what pulling a sidecar up a long steep hill with a 3½ h.p. machine amounts to.

Did any 3½ h.p. men face the gale last Easter Monday? I did, on the much frequented road from Birmingham to Llandudno; but not one sidecar passed us, neither did we overtake one, so everybody on the road was going the same speed (not too much of the speed about it). The gas on full, occasionally a little extra air, the oil pump going continually, petrol also, and plenty of low gear work on the level thrown in to pile the agony on.

I hate cruelty of any kind, even to 3½ h.p. petrol motors, and after that ride of torture to both riders and motor and the gruelling which always takes place on any hill worthy of the name, whatever the weather conditions, I decided to practise it no more, but invest in a big twin, and certainly I shall not go back again to what is so often described as the marvellous 3½ h.p.

7-9 H.P.

Sir,—A word in reply to F. G. Townsend in his wholesale condemnation of the 3½ h.p. for sidecar work. If the 3½ h.p. two-speed to which he refers was of good make, one would think he must have been rather unkind to it. I have driven my 3½ h.p. two-speed Humber over 1,100 miles, fully half of them with sidecar; engine replacements to date, two new piston rings, one valve and springs. Only last Wednesday I took a ten and a half stone passenger 155 miles in the day (Dunmow to Wisbech and back, flat country I admit), the machine running perfectly and as well, or very nearly as well, as ever it did. We had several bursts of twenty-five miles an hour by speedometer. I pay my machine a good deal of attention; lots of riders do not like that work, hence the troubles we hear of. I am quite willing that Mr. Townsend take my cylinder down to ascertain wear—he will not find much.

R. H. ADAMS.

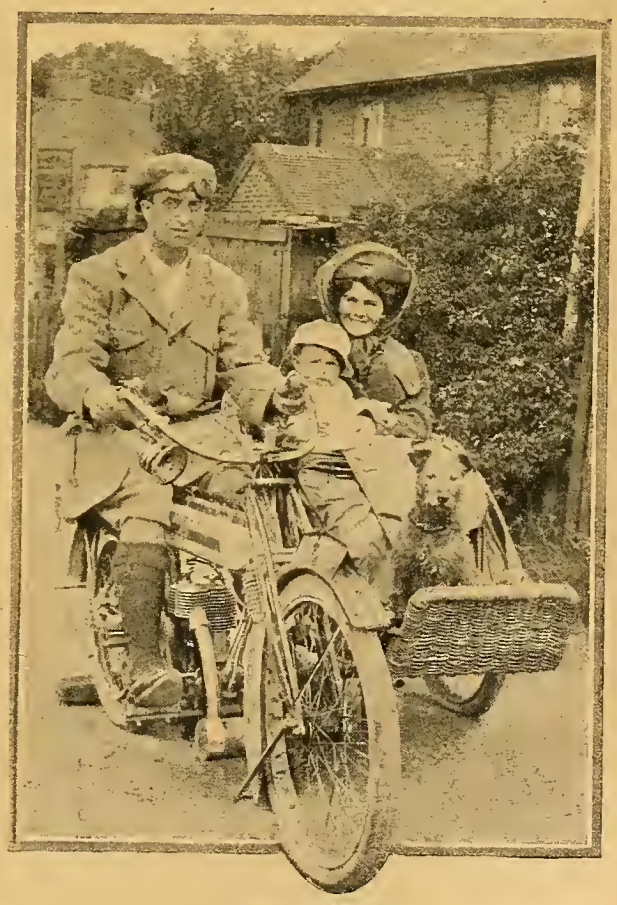
Sir,—*Re* the correspondence in *The Motor Cycle* as to the power required for sidecar work. At Whitsuntide my wife and I took a short tour on a 9 h.p. Singer tricar (1906 pattern), Riley engine and gear box (three speeds and reverse). We went *viâ* Ripon, up Wensleydale, branched off at Bainbridge as if to come down into Buckden, but instead swung round the foot of Semmerwater, and back by the other road to Bainbridge, on to Hawes, where we stopped the night. Next day we climbed the Buttertubs Pass to Swaledale, and then rode up through Keld to the Tan Hill (the highest public-house in England): from here down through Arkengarthdale to Reath and Richmond. We slipped down the Great North Road to Thirsk and finished the day's run by climbing Sutton Bank. The whole day's run was absolutely trouble free. Next day we returned home. The roads we took were in many cases excessively rough, and the gradients (as a glance at the contours will show) are very severe. We reached a point of 1,750-1,800 feet above sea level in several places.

On this run we saw many motor cycles and sidecars of all powers. One rider of a 3½ outfit we met at Aysgarth. He was going as far as Hawes, and was returning down the dale again for the very simple reason that he could not climb any of the passes or roads leading from Wensleydale into the neighbouring dales. One man on an 8 h.p. Chater-Lea with sidecar had come over from either Wharfedale or Ingleton way without trouble, and told me that he had not had too much power to spare. On the lonelier and less known parts of our run we met no motor vehicles at all, but I am sure that such bits as from Semmerwater to Countersett, Silver Hill at Keld, and one or two other places on the Buttertubs Pass, say, would effectually stop any 3½ h.p. machine and sidecar. It is common knowledge that no standard 3½ h.p. machine even in good every-day condition, with or without change-speed gear, will climb Sutton Bank with sidecar and passenger, and some of the hills we climbed were not far from being Sutton Banks, and the surfaces were worse.

On the occasion of Leathley climb on Easter Saturday, I know of a 3½ h.p. two-speed chain driven machine which was forced on to low gear on the level by wind alone.

Again, a truly variable gear gives the best chance of all, yet how many 3½ Zeniths does one see compared to their 6 h.p. models.

Perhaps, sir, the solution is that for those riders who take the main roads only, a 3½ h.p. machine is enough with two-speed gear, but the grandest and wildest, and in some cases the most picturesque scenery is a sealed book to such



A FAMILY SIDECAR.

Percy J. Newburn with his 3½ h.p. Rover sidecar combination, which is regularly used as a family turnout.

an outfit. The letters you receive from southern riders are strong testimony to this, and having ridden through nearly all the southern counties I can say that those hills I have come across were contemptible from a Yorkshire dale's point of view. How many of your southern 3½ h.p. contributors tell of tours into Devon and Cornwall.

Gradients of 1 in 7 or so are common up here in the dales and moors. Even my 9 h.p. was just enough for Sutton Bank, and no more.

In the above, of course, I am referring to machines in that every day condition in which nineteen out of twenty are found and can only be found. What a 3½ will do when tuned is another matter. — LOIDIS.

The Price of Motor Cycles.

Sir,—We all know that the motor cycle has come to stay, and we all know that the average price for a new machine is between £50 and £60. Admitting that it is excellent value for this amount, yet it is not everyone who can afford to put down such a sum, even though he does receive the utmost value for his money. Who has not heard the remark, "I would like a motor bicycle, but shall have to wait till they become cheaper"?

A great number of people have the idea that present-day motor cycles will cheapen to about half their present price in the course of two or three years. Anyone in the trade knows this cannot be done; if machines are £10 cheaper in two or three years, it is as much as they will be without sacrificing present-day refinements. Who would hope to get a 3½ h.p. magneto, various speeded touring motor cycle for about £25? This cannot be done, but I think I know what can be done for this amount. Many potential motor cyclists with limited purses would be satisfied with a much simpler mount than the ordinary machine if it could be depended upon. Supposing one could produce a simple medium weight motor cycle of about 3¼ h.p., engine to be as plain and simple as possible, fitted with a good system of dry battery ignition, and cheapened in other respects as far as luxury goes, yet fitted out ready for the road, do you think such a machine would sell at, say, from £20 to £25? By going very carefully into the matter, I think it can be done, and shall be grateful for any suggestion which anyone might offer, as I am thinking of putting such a machine on the market—that is, if there is any call for it.

WILLIAM JOHN FITCHETT.

Continental Touring—Duty on Sidecars.

Sir,—The R.A.C. Touring Department advise me as follows: In the case of motor cycles, to which are attached sidecars, etc., the above mentioned card (special Customs card, free of charge to members) does not apply, as the Continental Customs officials regard a three-wheeled vehicle as a car, and the ordinary Customs duty on cars has to be paid.

This difficulty is overcome by means of the club customs papers (triptyques).

Under this arrangement the duty is deposited with the club before departure and a set of Customs forms are issued. The duty thus deposited is returnable at the completion of the tour, provided the regulations, which are perfectly simple, are duly carried out.

So if I decide to take my bicycle and sidecar for a run down the coast after the English-Dutch Trial I must deposit with the club:

	£ s. d
For Holland, 5% *ad valorem* on, say, £60	= 3 0 0
For Belgium, 12% *ad valorem* on, say, £60	= 7 10 0
For France, £2 0s. 8d. per cwt. on 3 cwt.	= 6 2 0
	£16 12 0

or risk losing the same amount if I meet some crusty Customs officer who will not accept my version of the affair to the effect that the combination is a motor tricycle, or that I have a separate Customs card for the motor cycle and another for the sidecar.

But, perhaps, the Customs are not so black as they are painted.

Will any Continental tourists who have taken a sidecar give their experiences, and greatly oblige V.A.H.

The Glut of Open Hill-climbs.

Sir,—We read with interest your leaderette in the issue of June 13th with regard to the waning interest in hill-climbs. We are of opinion that your views are shared not only by most, if not all manufacturers, but also by all motorists interested in the sport.

Recent hill-climbs have had little interest, which may be accounted for, partly by their being so numerous, but to a great extent owing to the fact that many were of the freak character and the machines entered were hardly such as would be used for ordinary purposes.

We are staunch supporters of real sport, as we believe it materially assists in popularising motor cycling, and we are hoping you will use the great influence of your columns in supporting all types of reliability trials which embody an equal test of the rider's skill and the practical design of a motor bicycle. We should like to see more reliability trials which combine the severest tests the organisers can devise in the way of schedule time riding and combining the severest hills to be met on the main roads with very rigid specifications, so that the machines taking part shall comply with modern requirements of a high-class machine as regards its equipment for the road and not forgetting an efficient silencer and a good two or three-speed gear. Such competitions as held recently by the Coventry and Warwickshire Club we consider not only proved of great interest to the intelligent motor cyclist, but also served a very useful purpose in enabling the manufacturer to find out weak points.

THE LLOYD MOTOR ENGINEERING CO., LTD.

Petrol Consumption.

Sir,—As this is an ever interesting subject, I think it would perhaps interest other readers who cannot get good results to know what can be done with a good engine. I have a 3¾ h.p. Precision, geared 4½ to 1, B. and B. racing carburetter, which I recently drove a distance of eighty-three miles at an average speed of 29½ m.p.h., and a petrol consumption of 117 m.p.g. The journey included several stiff hills. A.H.C.

Sir,—Seeing several letters regarding petrol consumption in your paper, I think it might interest your readers to know the experiences of a late South African motor cyclist.

While in Johannesburg I owned two cycles, namely, a 3½ h.p. Humber, and, having sold this, I purchased a 2¾ h.p. New Hudson three-speed machine, geared 4, 6, and 10 to 1. I climbed all hills in the vicinity of Johannesburg on top gear, with the engine running well, and could take a person up most running on second, the third speed I rarely used except for starting. With this machine I have easily averaged 200 miles per gallon, and my brother, also a motor cyclist, can endorse my statement. I had no speedometer, and I reckoned the consumption by this means. I used to travel twenty miles or more per day, five days a week and sometimes the whole week through, and half a gallon of petrol lasted me the whole week. This works out to a little over 200 miles per gallon, which I have left it at to be on the safe side.

Seeing that this result was obtained with, I presume, the same make of engine and carburetter as the reader with the 6 h.p. Zenith, namely J.A.P. engine and B. and B. carburetter, I not only think it possible for him to do what he claims to have done on his machine, but I am certain that he could in ordinary circumstances.

W. B. SWART.

Riding Conditions in New Zealand.

Sir,—Generally speaking, our roads are not just as suitable for motor cycling as in the United Kingdom. This Dominion with its continual opening up of new country to meet the spread of the settler is compelled to build new roads, and until this work is greatly reduced we cannot expect much more attention to existing roads than they at present get. Consequently the surface of many roads leaves much to be desired.

My opinion upon the nature of machine required for this Dominion I still hold with one addition, and that is the engine clearance from the ground of the majority of machines should be greater. A large number of the machines I have seen exhibit beautiful results of the crank case, magneto, silencer, and undergear having come in contact with road obstructions. E. R. ROSKRUGE.

Westport, N.Z.

Lycett's



Speed and Reliability, Strength and Pliability.

See you get it for the T.T. Races!

Pure Para Dark Rubber, Gives Maximum GRIP. Special TOUGH CORE, 50% STRONGER than any other make, and exceptionally PLIABLE.

—It is the perfect "Power-Transmitter"—the Belt that has played such an important part in the recent LONDON—EDINBURGH, BRADFORD, BIRMINGHAM, LAND'S END records; including Mr. G. E. Stanley's SINGER Records (all made with a LYSO BELT.) Recently we gave you the Records—here we give you some of the Riders' opinions about the new "LYSO"—

Read what users actually say of the New Dark Rubber "LYSO" in the LONDON—EDINBURGH RUN.

"I THINK IT SPLENDID.—Mr. A. Webster, on a Hobart, says—"The new LYSO BELT fitted to my Hobart for the LONDON-EDINBURGH RUN, etc., making a total of 1,000 miles, was never touched the whole journey and showed no signs of slipping. I think it splendid." AS NEW AS WHEN WE STARTED.—Mr. W. A. Jacobs, on a Rex, says—"The new 1⅛ LYSO BELTS we bought are splendid. Mr. Legrand, Mr. White, and I fitted them, and all three Belts look as new as when we started. What is more remarkable is the fact that the Belts have not frayed out at the fastening in the least."

BIRMINGHAM—LAND'S END RUN.

"GAVE ABSOLUTE SATISFACTION—NOT NECESSARY TO MAKE ANY ADJUSTMENT WHATEVER—SHOWED NO SIGNS OF WEAR.—Mr. T. Pollock on a JAMES says—"I am pleased to inform you that the new LYSO Belt gave absolute satisfaction. The belt was fitted new for the journey of over 570 miles, and it was not necessary to make any adjustment whatever, also at the end of the journey THE BELT SHOWED NO SIGNS OF WEAR." This gentleman won this event.

—Don't fail to fit YOUR mount with the New Dark Rubber "LYSO" and participate in the advantages accruing from a perfect "Power-transmitter." Obtainable of all Agents, Garages, etc., or direct, at our usual prices as below :—

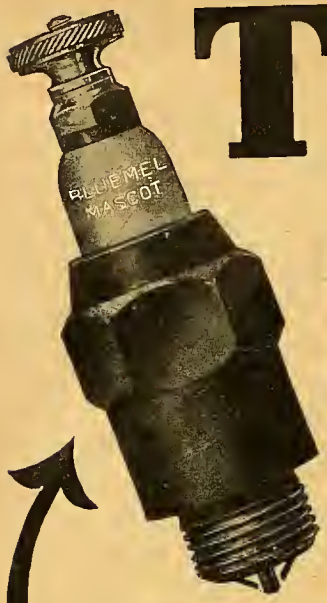
Of all Agents. Prices: Size ⅝ in. 1/5; ¾ in. 1/9; ⅞ in. 2/1; 1 in. 2/4; and 1⅛ in. 2/9 per foot.

LYCETT'S, "The Saddlery," Bromley St., Birmingham.

"New Lyso"

R. H. S.

In answering this advertisement it is desirable to mention "The Motor Cycle."



THE BLUEMEL-MASCO T

Special Steatite

PLUG



Price 3/6 Each.

Price 3/6 Each.

The Bluemel Mascot plug will stand up to the severest work it is possible to give it—and all the time. It will get the last ounce out of your Engine.

Motor Cycle List post free.

C. W. BLUEMEL & BROS.,
WOLSTON, - Nr. COVENTRY.

A Triumph rider does 14,000 miles with one Bluemel Mascot plug.

Dear Sirs, Rose Eden, STAINES. April 15th, 1912.
I am taking this opportunity of thanking you for the plug you sent, and saying what I think of the last one I had.
ran it over 14,000 miles on a Triumph machine, and during the whole of that time it was never even cleaned, in fact it gave no trouble whatever. Yours truly,
(Signed) H. Parkinson.

S.I.A.M.T. STILL WINNING.

JUNE 16th.

GRAND PRIX TURIN.

65 MILES ROAD RACE.

Class 1.	250 c c.	S.I.A.M.T. 1st.
Class 2.	333 c.c.	S.I.A.M.T. 1st.
Class 3.	500 c.c.	S.I.A.M.T. not entered.
Class 4.	1,000 c.c.	S.I.A.M.T. 2nd.

GRAND PRIX FASTEST COMPLETE TEAM.

39 COMPETITORS.

Won by S.I.A.M.T. Team.

Riders: Rava, Riva, Scales.

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Telephone—9852 City. Telegrams—"SIAMTISM.



IN JAPAN WITH A SOCIABLE

HAVING read interesting accounts from time to time in *The Motor Cycle* of the doings of various makes of three-wheeled sociables, and the weekly discussions appearing on the merits and demerits of these handy vehicles, I am prompted to give an account of my experience with a 1911 model A.C. in Japan, in the hope that it may interest owners and prospective purchasers both at home and in the Colonies.

The rear wheel of my machine is shod with a 700 × 75 mm. Liversidge alternate steel and rubber-studded tyre, and the front wheels with 650 × 65 mm. plain Michelins, which combination has carried me so far 1,500 miles, over roads both good and vile, without a single puncture (umberufen!). The rear tyre is good for another 1,500 miles. The front tyres show practically no wear.

I use my little car, which I have named the "Butterfly," mostly in the city of Tokio, which covers an area of 100 square miles. Although only some ten years back this city possessed nothing but a single horse tramway, it is now traversed by a network of electric lines, and most of the streets being narrow, motoring in wet weather is no joy. Brother motor cyclists in Manchester would be in their element here! With the main thoroughfares, however, which, being modelled after European methods, are wide and excellent, no fault can be found, and though the speed limit is eight miles, this can be exceeded 500% with impunity. The Japanese Robert is not a speed specialist like our zealous officers, and looks on with utter unconcern.

There is quite a number of motor cycles in Tokio, the Triumphs leading, closely followed by the ubiquitous Humber lightweight, and I predict that in a couple of years a boom will set in. As to three-wheelers, I have only seen three or four Cyclonettes, one Kelsey Motorette (an American production), and two or three sidecars. No doubt these passenger machines will also increase in number, but at present American light cars are preferred, owing principally to the fact that there are as yet very few owner-drivers, and those who prefer to be driven naturally choose a car, not only for its appearance and comfort, but because there is only one tax for cars irrespective of class or power—that is whether they are the majestic Silent Knight Daimler or the humble 5 h.p. A.C. This motor tax, with sundry supplementary taxes, being about £8 10s. p.a., the upkeep in this country of even such an economical machine as the A.C. is almost too much for slender purses. Some improvement may be hoped for when numbers increase.



A crowd of Japanese who evinced great interest in the A.C.



The writer's A.C. sociable on one of the good military roads.

Overheating Troubles, nil.

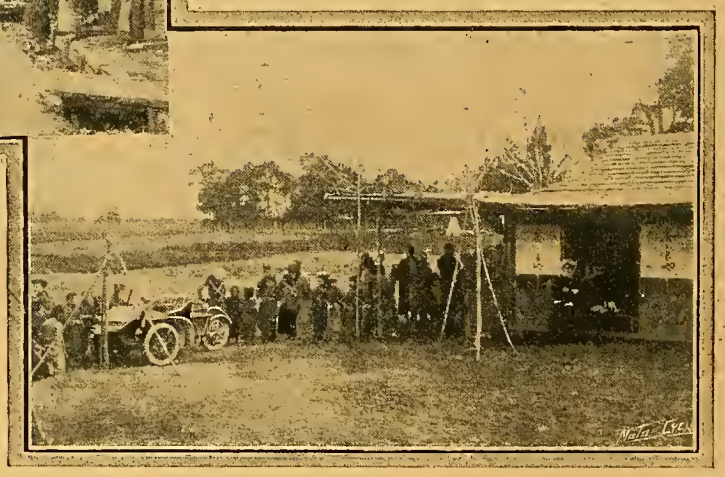
I have made several non-stop runs of from twenty to fifty miles, the only troubles I have had being of the sooted plug order. There are some fine military roads, but after heavy rains they

In Japan with a Sociable.—

get frightfully cut up by the waggon traffic, and often have I had to cover two to three miles on the low gear over cart ruts inches deep, or in narrow lanes crawling behind a line of heavily-laden carts, without overheating. The engine has not once overheated, neither have the auxiliary fans given me any trouble, although I have read of other owners losing their fans through the holding down screw bolts working loose. I have not yet encountered a hill that I could not get up with a passenger and a full complement of accessories and spares, including the luncheon basket. The only drawback, perhaps, of the standard A.C. for Colonial use in some countries is the small ground clearance; nevertheless, I must add that I have only once "bumped" the under part of the car, and this without doing any damage beyond denting the metal shield that protects the engine. Although the A.C. has a track as wide as the average car, the short wheelbase enables me to negotiate narrow country lanes off the beaten track which abound in hairpin bends, and so we find our way to places where no motor cars have ever been seen before. One of the photographs shows my wife seated on a bench outside a tea-house, and a crowd of Japs evincing great interest not only in the wonderful "Jidosha" (self-propelling vehicle), but in the "foreigners." Another picture with the A.C. in the foreground depicts one of many military roads, along which motorists can fly to their hearts' content, but it behoves one to be careful, as, there being no rules of the road outside the city limits, the sound of a motor alarm causes great consternation, and the carts scatter all over the road.



A halt in a Japanese village. The fine condition of the road surface will be noted.



Outside a tea house; the usual crowd of sightseers.

Crowds of Children.

In passing through villages the toot-toot brings swarms of children in a moment from every house, lane, and backyard, who line the road to cheer you along. We often ask the question, "Where do they all come from?" The Japanese are certainly a prolific race. I have not yet driven my car in summer, but have no misgivings whatever as to its behaviour in the hot weather, when the thermometer often rises above 90° F. in the shade, but I propose fitting an auxiliary air inlet to the carburetter, also a Lodge double pole plug. I drain the oil from the crank case every 500 miles, and also scrape the carbon deposit from the top of the piston and the valve chambers, which I can easily do without removing the cylinder. The valves have not yet been ground in. I cannot speak too highly of the Liversidge non-skid, both as to its non-skidding and wearing properties. I use a Michelin butt-ender on the rear wheel, which I have not inflated for three months.

In conclusion, let me add how eagerly *The Motor Cycle* is awaited here by a small circle of enthusiastic motor cyclists. J.D.M.

T.T. FORM ON THE BOOK. Positions of 1912 Entrants in the 1911 Races.

Senior Race.	h.	m.	s.
1. O. C. Godfrey	3	56	10
2. C. R. Collier (disqualified)	3	57	13
3. C. B. Franklin	3	59	52
4. H. A. Collier	4	9	42
5. Hugh Mason	4	15	35
8. Quintin Smith	4	18	40
10. J. T. Bashall (rode a Bat in 1911) ...	4	24	56
11. H. Reed	4	32	45
17. J. R. Haswell	4	51	46
18. J. R. Alexander	4	58	1
20. N. F. Holder	5	5	26
22. John Gibson	5	16	37
26. F. A. Applebee	5	42	58

Also rode in 1911, but did not finish: K. Gassert, H. H. Bowen, F. Philipp, W. Creyton, J. W. Adamson, S. C. Perryman, P. Butler, A. H. Alexander (Rex in 1911, Indian in 1912), and J. Woodhouse. D. C. Bolton, J. F. Sirett, and E. Kickham rode in the Junior race last year, and did not finish. The remaining twenty-four did not take part.

Junior Race.	h.	m.	s.
1. P. J. Evans	3	37	7
3. H. J. Cox	3	55	56
4. D. M. Brown	3	56	24
6. K. Gassert	3	57	23
10. J. Haslam (Zenith in 1911)	4	4	44
17. N. D. Slatter	4	29	18

Rode in 1911 Senior: H. Mason (5th), W. H. Bashal' (7th), J. T. Bashall (10th), and W. Creyton (retired).

The other fifteen riders did not race last year.

"For the highway or the skyway."

"300 MILES IN 282 MINUTES"

"For the highway or the skyway."

The most astonishing ride in the world. Unprecedented in the annals of motor cycle history. At Brooklands, June 20th, 1912, Mr. C. B. Franklin, on a 7 h.p. "INDIAN," — not only covered the above distance but broke —

WORLD'S RECORDS

for 2, 4, 5, 6, hours, and 250, 300, 350 miles, using

WAKEFIELD

'CASTROL' Regd.

"For the highway or the skyway."

C. C. Wakefield & Co., 27, Cannon Street, London, E.C.

"For the highway or the skyway."

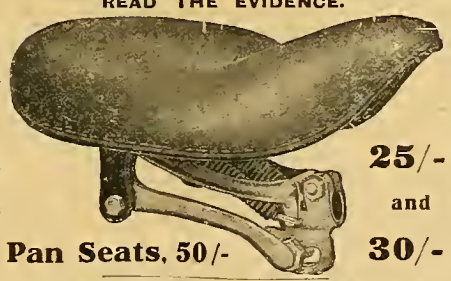
O.D.O.

XL-ALL'S

POSITIVELY

EXCEL ALL OTHER SADDLES

READ THE EVIDENCE.



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Pan Seats, 50/-

"I am certain there is nothing to equal it on the market."—W. J. Clarke, holder of Six days World's Record.

"There is nothing to touch it for genuine springiness."—E. A. Chapman; 11, High Lane, Burslem.

"It is, I am sure, the most comfortable saddle on the market."—R. V. C. Brook, Hon. Sec., Birmingham Motor Club.

"Send saddle, I am using a borrowed standard, it is simply torture. I am spoiled for using any other since I bought an XL ALL."—E. W. Hettich. D.B.O.A., 1, King St., Jersey.

"I have been a strong believer and user of your saddles, and would never dream of using any other kind."—J. O. Ross, Lundin Links, Fife.

"Having had experience of all the best saddles on the market. I am sure your seat is far and away ahead of all others."—(Colonel) H. T. Kennard, Coombe House, Surbiton.

"IT IS THE MOST COMFORTABLE SADDLE I HAVE EVER USED. 'BAR NONE' THE XL ALL IS NO DOUBT THE SADDLE OF THE FUTURE. I LIKE TO GIVE HONOUR TO WHOM HONOUR IS DUE."
London House, Garnet. W. L. J. DAVIES.

"It is far in advance of any I have yet tried."—S. R. Hosford, Rose Bank, Cork.

"I cannot speak too highly of the merits of this saddle which is by far the best on the market."—J. Allan Osborne, Milford Co., Donegal.

"The saddle is a revelation to me after riding other makes during the last 10 years." — Felix Barry, 7, Park Road, Bagnor.

"Am very pleased indeed with the saddle, which is the envy of other motor cyclists."—Wm. Yates, 3, High Street, Evesham.

"Send Bucket Seat by return as I cannot bear the other make I am riding after using an XL-ALL."—E. G. K. Thomas, 22, Gayton Road, Harrow.

"It is by far the most luxurious seat I have used."—F. Gosnold, Tontine Street, Folkestone.

"To my mind your saddle has no rival, and I have tried all the leading makes."—E. S. Karak, 40, Adelaide Road, London, N.W.

XL-ALL, LTD., 7 & 9, Moseley St., Birmingham.

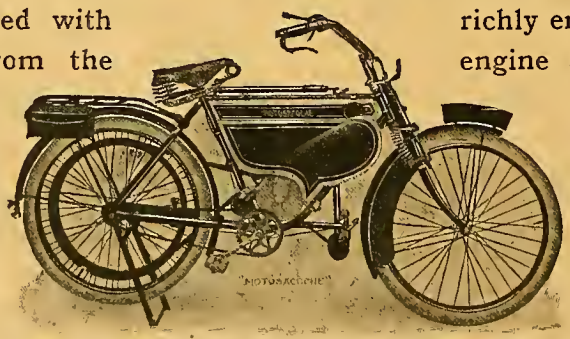
Would you own a MOTOR CAR without A BONNET over the Engine?

Yet, strange to say, some folk buy motor cycles with uncovered engines, which they practically sit on, and which fling oil all over them, the hot cylinders burning holes in their good clothes and other moving parts rubbing holes, etc., etc.

Now, with the MOTOSACOCHE

FOR GENTLEFOLK — NO VIBRATION

NO OILY DIRT — NO NOISE — NO GYMNASTICS



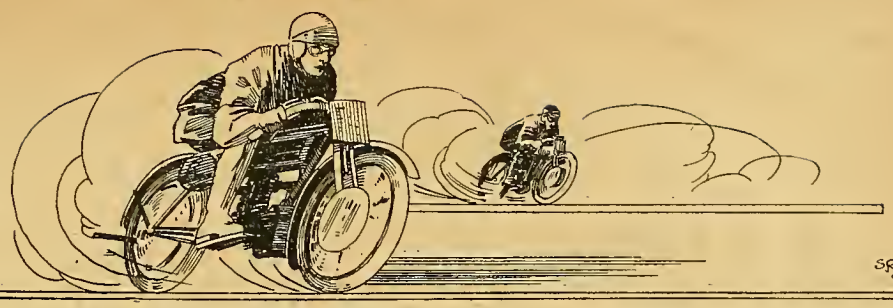
the engine is protected with richly enamelled shields which protect the rider from the engine and keep his clothes clean from oil and free from heat. Also they keep the engine from becoming too hot, and this is the reason why **the Motosacoche won't** overheat. **Motosacoches won't** rub or burn holes in your clothes, and it won't fling oil over them, therefore earning for itself the distinction of being

The ONLY MOTOR CYCLE for GENTLEFOLK.

¶ However, just sit down NOW lest you forget and send us a halfpenny postcard asking for our **"A"** catalogue—it is sent free of charge—and will interest you.

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QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not **must be accompanied by a stamped addressed envelope for reply.** Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately, and keeping a copy, for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects

Bewdley—Swanage—Eastbourne.

(1.) May I ask the best route (surface and scenery) from Bewdley (Worcestershire) to Swanage? (2.) From Swanage to Eastbourne? Machine-a 3½ h.p. two-speed Humber and sidecar, with luggage only; no passenger.—E.C.H.

Your best routes would be as follows: (1.) Bewdley, Worcester, Tewkesbury, Gloucester, Stroud, Nailsworth, Bath, Beckington, Warminster, Shaftesbury, Blandford, Wareham, to Swanage. (2.) Swanage, Wareham, Wimborne, Ringwood, Cadnam, Totton, Southampton, Fareham, Havant, Chichester, Arundel, Worthing, Shoreham, to Brighton by the old road, Lewes, Polegate, to Eastbourne.

Iridium Points.

In view of the high price of platinum screws for replacing worn contacts of my magneto, I write to ask your opinion of the iridium contacts advertised in *The Motor Cycle*, and I should be glad of a reply to the following questions: (1.) Will iridium points wear well? (2.) Is iridium likely to cause misfiring or injure the windings of the armature? (3.) Does iridium require "facing up" oftener than platinum? (4.) In the advertisements is "Jebron" identical with and a trade name for iridium?—PLATINUM.

(1.) Iridium points are quite satisfactory. (2.) It will not cause misfiring or injure the magneto. (3.) No, not so far as our experience goes. (4.) Jebron is the name of a certain type of contact point, made by J. E. Brown, of Plumstead.

Registration of Runabouts.

Will you kindly give me the following information for a Morgan three-wheel runabout: (1.) The most suitable county to apply to for registration low numbers. (2.) Where to apply to for driving 5s. and taxation 20s. licence? (3.) Size of the number plates for a three-wheeler.—A.J.L.

(1.) We should recommend you to apply to one of the following Irish counties: Carlow, Clare, Donegal, Fermanagh, or Monaghan. (2.) Driving licence, nearest police office; local taxation licence, any post office. (3.) If over 3 cwts. car size number plates will be necessary. As a three-wheeler, however, it pays a motor cycle local taxation licence.

The Firing Intervals on a V Twin.

Can you tell me at what angle my cylinders should fire, and the order in which they should fire? Angle of cylinders 90°. Should they not fire thus: No. 1, firing; No. 2, suction (down stroke); No. 1, exhaust; No. 2, compression (up stroke)? Should they fire at 180° on the wipe contact, or 135°?—J.F.C.

Your assumption that No. 1 cylinder should be firing while No. 2 is on suction stroke, No. 1 exhausting with No. 2 on the compression stroke, is quite correct, but, of course, No. 2 cylinder being at 90° with No. 1, its suction stroke does not begin until the firing stroke of No. 1 is half way through. This means that between the beginning of the firing stroke in No. 1 and No. 2 cylinders, two complete strokes of No. 1—firing and exhaust—have to be taken besides half of the suction stroke; in other words, the crank has to turn a full revolution + 90°, that is 450° in all. As the contact maker shaft turns only half a revolution to every complete revolution of the main shaft, No. 2 cylinder contact should follow behind No. 1 at a distance of 225°. Thus the firing intervals will be in the proportion of 225 to 135, provided both connecting rods are on one crankpin.

Leicester to Bournemouth.

Will you kindly tell me the best route from Leicester to Bournemouth, also about the distance? I do not object to passing through towns for the best and nearest route. Shall I have to pass through any known police traps, and shall I encounter many bad hills on my journey? What is the most suitable gear to use for solo?—H.B.

Your best route would be as follows: Leicester, Lutterworth, Rugby, Southam, Banbury, Oxford, Abingdon, East Ilsley, Newbury, Whitchurch, Winchester, Romsey, Cadnam, Lyndhurst, Christchurch, to Bournemouth. We do not know of any police traps except an irregular one at Christchurch. There are no hills to speak of. Gear about 4¾ to 1 for 3½ h.p.



Dr. and Mrs. Fawssett (Chater-Lea and Lowen sidecar) and A. D. Arter (James), of the Birmingham M.C.C., leading a string of competitors in the M.C.C. Team Trial.

Harrogate to Brooklands.

(1.) Would you kindly tell me whether there will be any motor cycle races at Brooklands on August Bank Holiday, and if so what time the meeting starts? (2.) Could you also work out a route to Brooklands from Harrogate with the approximate mileage, and missing the large towns?—C.E.H.M.

(1.) There will sure to be at least two motor cycle races at Brooklands on August Bank Holiday. The Brooklands meetings always start at 2 p.m. (2.) Your best route from Harrogate to Brooklands would be as follows: Wetherby, Aberford, Doncaster, Bawtry, Retford, Tuxford, Newark, Grantham, Stamford, Stilton, Eaton Socon, Biggleswade, Paldock, Stevenage, Hatfield, St. Albans, Watford, Rickmansworth, Uxbridge, Colnbrook, Staines, Chertsey, Weybridge, to Brooklands. The distance is approximately 236 miles.

Rubber Belts. Red-hot Exhaust Pipe.

(1.) Are all the rubber belts on the market internally constructed of canvas fabric? (2.) What is the reason of occasional overheating when driving with sidecar and passenger? (3.) Is it safe to continue driving when the exhaust pipe gets red hot? (4.) Will gauze placed in the induction pipe atomise the petrol and improve the running? (I have been informed that a vast improvement results from such a procedure.)—B.J.B.

(1.) Yes, rubber belts are built up on canvas fabric. (2.) Simply that the engine, being air-cooled, is not able to get rid of the heat developed, probably through being over-driven. (3.) Yes; this does not much matter, but it points to the ignition being too late. (4.) The experiment mentioned here is certainly worth trying. In cold weather, however, the gauze gets choked up through water forming owing to condensation.

Loss of Power.

I have recently purchased a 1910 3½ h.p. machine, which does not develop more than two-thirds of the power which I think it should. Geared 5½ to 1, it will climb White Hill, Henley, on the main London-Henley Road, steadily but not fast, and requires the throttle full open to do it. Compression is very good, and the engine was recently taken down (about three weeks ago), and seemed in good condition. It requires a lot of extra air even to start from cold. My weight is 10 stones 8 lbs. I think it should be able to climb the hill (which is threequarters of a mile long and about 1 in 8 at the steepest) on a 4½ gear, which is what I want to run on if possible. Will you please advise me what to try? I have not much experience.—J.R.A.

Perhaps you are using rather too large a jet. It is not right that you should require extra air when starting from cold, unless the throttle has to be fully opened. Also the valve springs may have become somewhat weak, and this may account for loss of power. You should certainly climb 1 in 8 with a 4½ to 1 gear.

Cleaning Cylinders.

Can you recommend any of the new methods advertised for removing carbon deposit from cylinder? I cannot remove my cylinder without taking off the flywheel, and taking down crank case, timing gear, and magneto. Does it do any harm to scrape carbon off by means of a bent piece of steel introduced by way of the valve cap opening?—J.C.

Probably the most satisfactory way would be to run the machine over to Messrs. Sully and Co., 10, Old Town, Clapham, S.W., and let them clean your cylinders by the oxygen process, which is quite satisfactory, very quickly done, and not expensive. Cleaning by means of a scraper does not do a bit of harm, provided that it is carefully done, but it cannot be properly done without taking the cylinder off. Of course, the oxygen method is rather more thorough.

EXPERIENCES WANTED.

"A.H.C." (Bristol). D.H.K. free engine hub.

"R.N." (Denbigh). L.M.C. water-cooled with sidecar.

"T.Z." (Monmouth). P. and P. decompressor.

"W.H.D.S." (King's Cross). Cowey and Jones speedometers.

"W.A.B." (Woldingham). Two-cycle engines, hill-climbing, petrol consumption and all-round efficiency.

"E.H." (London, S.W.) Mabon variable gear fitted to an 8 h.p. engine.

"A.S.J." (Ilfracombe). 1912 Lincoln Elk for solo and sidecar use.

"W.B.S." (Manchester.) 2¾ h.p. twin Humber with and without three speeds.

"W.D.W." (Liverpool). Open belt drive on a 2½ h.p. 1911 Motosacoche.

[If "W.H." will send a stamped envelope, his letter will be answered.—ED.]



"WHERE IGNORANCE IS BLISS," &c.

Juvenile Knut: "Sit tight, mater, this is rather a bad hill, but you're safe enough where you are!"

"RIDING ON AIR."——"RIDING ON AIR."——"RIDING ON AIR."

"RIDING ON AIR."—"RIDING ON AIR."

"RIDING ON AIR."

Innumerable changes of body position

are possible with

Either wheels can be taken out of the forks in two mins.

THE NEW MODEL

A.S.L.

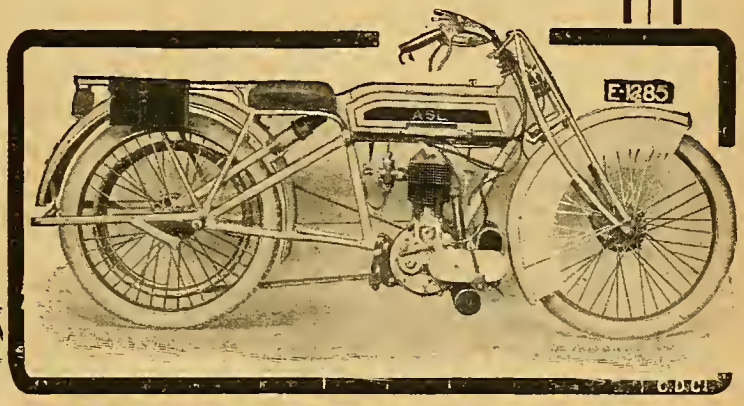
Auto-matic drip sight feed and increased lug-gage carrying capacity.

with 26in. WHEELS and improved frame.

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3½ h.p. (85 × 88). 4 h.p. (89 × 92).
Auto Varia Gear and Free Engine.
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Marvellous Performance of nearly 200 miles to the gallon.

Reprinted from "The Motor Cycle."

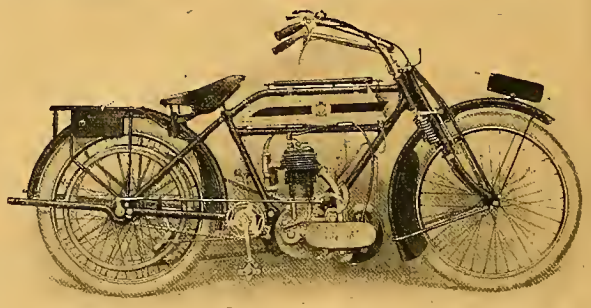
Ayr and District M.C.

A petrol consumption trial was held on the 5th inst. extending over a very hilly course of 22½ miles.

The results were based on the formula $\frac{C+W}{\text{Petrol in ozs.}}$, the winner of the single-cylinder class, George Sloan, on a **3½ h.p. Sun-Precision,** used 18½ ozs. of petrol, which works out at the remarkable figure of 194.5 m.p.g.

		Petrol in ozs.	Fig. of merit.	m.p.g.
1.	**Geo. Sloan (3½ Sun-Precision)** ...	18½	48.3	194.5
2.	Jas Gilchrist (3½ Triumph) ...	23½	37.5	153.1
3.	Geo. Cocker (3½ C. and R.) ...	25½	34.	141.1

All the leading makes were competing in this trial.

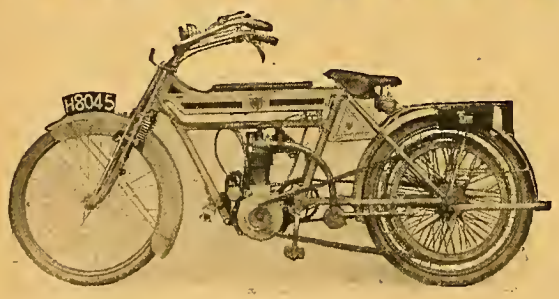


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This Machine completed the RETURN JOURNEY.

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3 h.p. TWIN, with 3-speed Gear and Clutch **48 Guineas.** EARLY DELIVERY.

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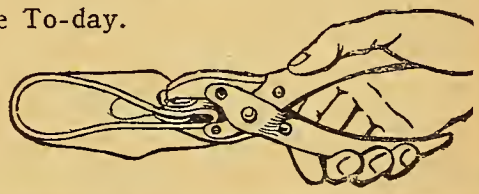
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And 237, Deansgate, Manchester.

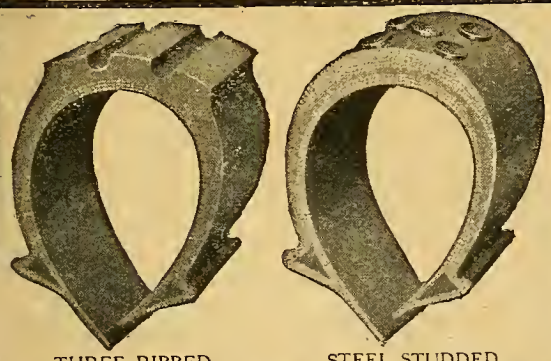
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—better and permanent, too—if you use a Parsons Rapid Repair Kit, instead of the old-fashioned, troublesome, patch-and-solution way. Isn't this a strong inducement why YOU—Mr. Motor Cyclist—should spend 15/- NOW on a PARSONS RAPID REPAIR KIT? No "waiting for patches to dry"; no uncertainty; no leaking; no mess—with the Parsons Way. You can be on the move again in a minute if you carry this little 7in. by 4in. Repair Kit. Get one To-day.

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KINGSTON MILLS BRADFORD-ON-AVON, WILTS.

Dear Sirs, 30th May, 1912.

On Monday last with my 3½ h.p Ariel and sidecar I journeyed from Thetford to Haywards Heath in 5 hrs. using Huile de Luxe. Being unable to purchase any in Haywards Heath, the shop not being open at 8 o'clock, on the following journey I bought some————Oil and filled the tank, with the result that the engine simply would not pull like it had done.

Not thinking that a change of oil would make so much difference.

I changed the plug and cleaned the points and overhauled the carburetter, but, still could not get satisfaction.

After much coaxing and lowering of gear we managed to get to Stevenage where we emptied the tank of the other oil and filled up with Huile de Luxe at Butler's garage.

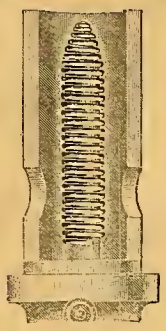
After the first mile, the engine picked up its accustomed vigour and the muffled exhaust changed to a healthy bark, enabling me to finish the journey without a grumble having learnt a lesson never to do long journeys without a spare tin of Huile de Luxe.

Congratulating your company on its excellent product.

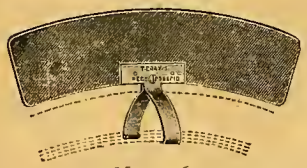
Yours faithfully, F. C. K.

MOST AGENTS STOCK OUR 6d. TINS OF CYCLE LAMP OIL. TRY THIS TIP.

PRICE'S PATENT CANDLE CO. LTD., Battersea, LONDON, S.W.



No. 675.
TERRY'S VAPORIZER is giving 120 miles to the gall. Engine will pull at walking pace. 3d. each for B. & B. Amac or Triumph Jets.



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Adjustable Number Plates, 1/- each.

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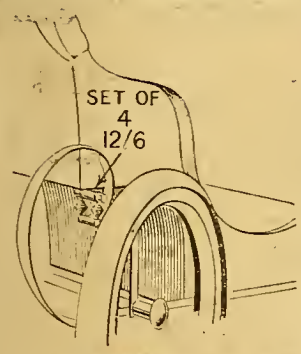
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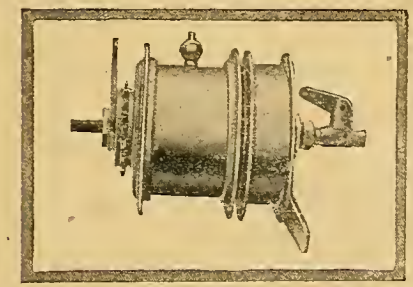
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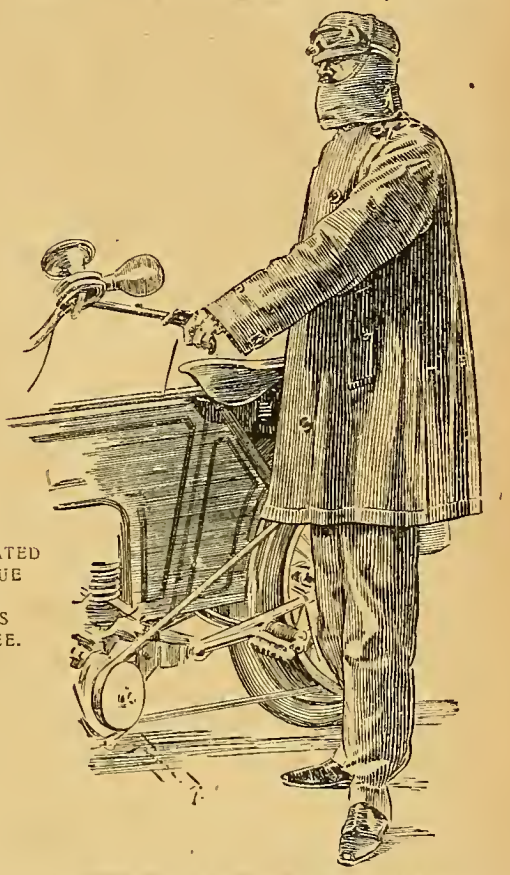


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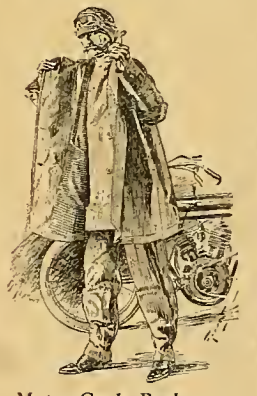
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BURBERRY ventilates like ordinary cloth, obviating all danger of overheating or chill.

BURBERRY prevents penetration by cold winds, because it is woven from minutely fine threads, closely welded.

BURBERRY is Burberry-proofed—a system that renders the materials antagonistic to rain and damp of every kind.

BURBERRY, lined with light camel-fleece or wool, is delightful in the equable temperature it maintains.



Motor Cycle Burberry open, showing its three protective fronts.

PRICES:

MOTOR CYCLE BURBERRY, as illustrated, a new triple-fronted model in Gabardine lined proofed wool. Efficient against rain, driving wind, and dust. Naturally ventilating, cool on close days, yet, owing to dense weaving, a snug shield in cold weather. 73/6

TROUSER OVERALLS, in Gabardine. 31/6

MOTOR CYCLE CAP which can be transformed into a snug-fitting helmet. 15/-

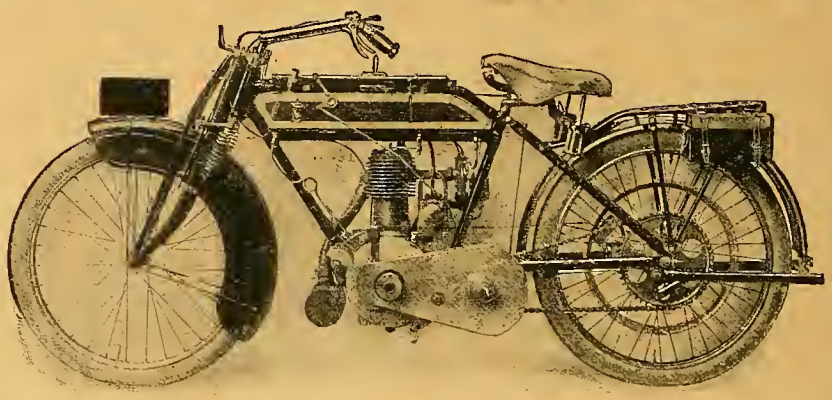
Mr. W. J. Clarke, holder of the World's Six Days' Motor Cycle Record, covering 3,003 miles, states: *"Your overalls were a great comfort to me. I had several sharp showers to pass through, and although several times I had a pool of water on me, never once was there any sign of water getting through the overalls; they were certainly splendid, and the only overalls I have ever had that are absolutely waterproof."*

BURBERRYS

Haymarket, LONDON;
Boul. Malesherbes, PARIS;
Basingstoke & Provincial Agents.

WULFRUNA MOTOR CYCLES

We are specialising on a 3½ h.p. Motor fitted with "G.H" Two-speed Gear, contained in a gear box, as illustrated. This gear is started with a handle, the same as a car. It can be started whilst the rider is in the saddle. It is chain driven, fitted with shock-absorbing clutch in addition to the usual friction clutch. The engine used is the celebrated "ARNO," which secured Two Gold Medals in the London to Exeter run. The combination of the following gives the motorist the acme of comfort, reliability, smooth running, and all that is up-to-date and necessary to the most fastidious rider.



WULFRUNA CYCLE, **BROOKS' SADDLE,**
ARNO MOTOR, **BLUEMEL'S SIDE GUARDS,**
G.H. TWO-SPEED GEAR, **DRUID SPRING FORKS.**
DUNLOP TYRES, **RENOLD'S CHAIN.**

Prompt delivery Guaranteed.

THE ABOVE IS SPECIALLY ADAPTED FOR SIDE CAR WORK.

TESTIMONIAL.

The Wulfruna Engineering Co., Ltd.,
Wolverhampton.

Church Road, Herrington, Cumberland,
March 25th, 1912.

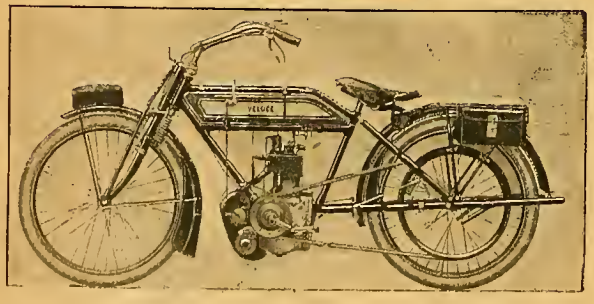
Dear Sirs,—The "Wulfruna" purchased from you has given me every satisfaction, there having been no mechanical troubles whatever. The "Wulfruna" has always held its own on the road with other well known makes. I can get 40 miles an hour out of her quite easily, and she can climb almost any hill. I have tried her on the steepest hills and she is marvellous. The machine is a picture to look at and will not disgrace any company.

JAS. T. ELLIOTT.

WULFRUNA ENGINEERING CO., LTD., Telephone: No. 735 Telegrams: "ENGINEERING."
Great Brickkiln Street, WOLVERHAMTON.

VELOCE

the RELIABLE.



2½ h.p. Patent 2-Speed in Crank-case.
Mechanical Lubrication.
BIRMINGHAM-PERTH TRIAL. 352 Miles.
One minute in front of time.
BRONZE MEDAL
THE HILL-CLIMBER,
Two Passengers—combined weight, 22 stones.
GRADIENT—1-in 7. Ratios—5 to 1 and 8 to 1.
From Standing Start. Witnessed by J. Urry of *Bicycling News*.

For Agency, write at once—
VELOCE, LTD., Fleet Street, BIRMINGHAM.

Easy Starting - Easy Running.

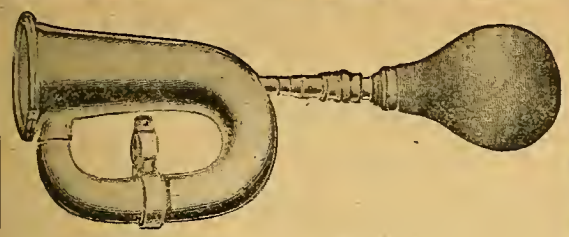
AIR COOLED

"Filtrate"

REGISTERED

FOR MOTOR CYCLES

Sole Makers:
FILTRATE WORKS, LEEDS.



The best English made Motor Cycle Horn is the

Rotax

Clarionette.

A smart 16in. horn for the motor cycle. Nickel-plated brass, with best quality bulb and dust cap. Easily cleaned. A clear and penetrating tone. Free from harshness.

From your Agent 18/9.

Wholesale only—
Rotax Motor Accessories Co.,
43/5, Great Eastern Street, London, E.C.

THE "BURNETT" PATENT SUCTION-CUP TYRE.

NON-SKID



TESTIMONIAL.

30, Upper Sandhurst Road.
Brislington.
BRISTOL.
March 27th, 1912.

Messrs. The Burnett Motor Tyre Co.,
Melksham, Wilts.

Dear Sirs,—It is with much pleasure that I express to you my satisfaction of excellent results I have had from one of your Special 3-ply Motor Cycle Tyres, which I purchased from you in 1910.

I fitted tyre to the rear wheel of my 4½ h.p single-cylinder motor cycle, sidecar attached, and ran about 3,000 miles without having the least bit of trouble, not even a puncture. I have since removed tyre to wheel of sidecar, and after 1 000 miles is still in excellent condition.

It is also interesting to note that during the time tyre was running on rear wheel of motor cycle, I used no less than three tyres of well-known makes on front wheel, which caused me no little inconvenience.

I may also add that I found tyre excellent as a non-skid during bad weather and far superior to any other make of tyre which I have ever tried.

Yours truly, W. H. WHITE.

	3-Ply.	Tubes.
26 × 2	33/- ..	8/6
26 × 2¼	34/6 ..	9/6
26 × 2½	36/- ..	10/6

Carriage Paid. Less 10% Cash with Order.

THE BURNETT MOTOR TYRE CO.,
MELKSHAM, WILTS.

Tel.: 33, Melksham. Tel. Address: "VACUUM, MELKSHAM."

Harrods

CAN

DELIVER FROM STOCK

Alcyon B.S.A.
Bat Bradbury
Clyno Douglas
Elswick Hazlewood
Hobart Humber
Indian Matchless
Norton Motosacoche
New Hudson P. & M.
Rover Rudge-Multi
Premier Quadrant
Singer Swift
Triumphs Zeniths

50 New Machines in Stock,

and a Fine Selection of

SIDECARS.

Best House in London for

A.C., G.W.K., and MOTORETTE RUNABOUTS.

Any make Supplied on —Deferred Payments.—

Write for Harrods Cycle Catalogue, the most complete issued.

HARRODS LTD.,

Richard Burbidge, Managing Director,
BROMPTON ROAD, LONDON, S.W.

BOOKS

FOR

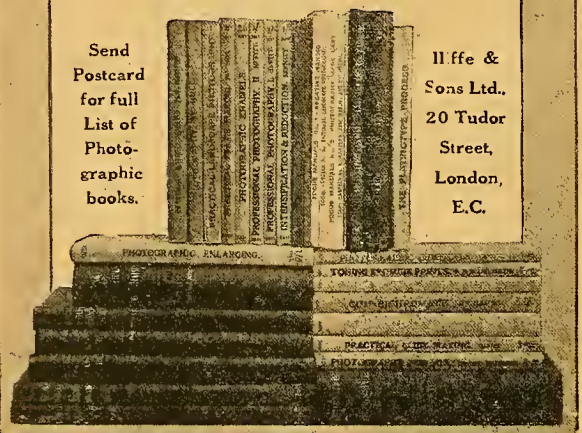
Motor Cyclist-Photographers

Every Motor Cyclist who uses a Camera will find these books instructive and interesting.

Photography for All. **Photography by Rule.**
Practical Slide Making. **Practical Frame Making**
Toning Bromide Prints.

Price of any of the above

1/- nett per volume. By post, 1/2.



Send Postcard for full List of Photographic books.

Iliffe & Sons Ltd., 20 Tudor Street, London, E.C.

BEST VALUE.

IMMEDIATE DELIVERY from the LONDON AGENTS:

MATCHLESS.

8 h.p. Double Belt Passenger Models, and 5 h.p. T.T. 6-speed Models

HAZLEWOOD.

A.S.L.

CALTHORPE.

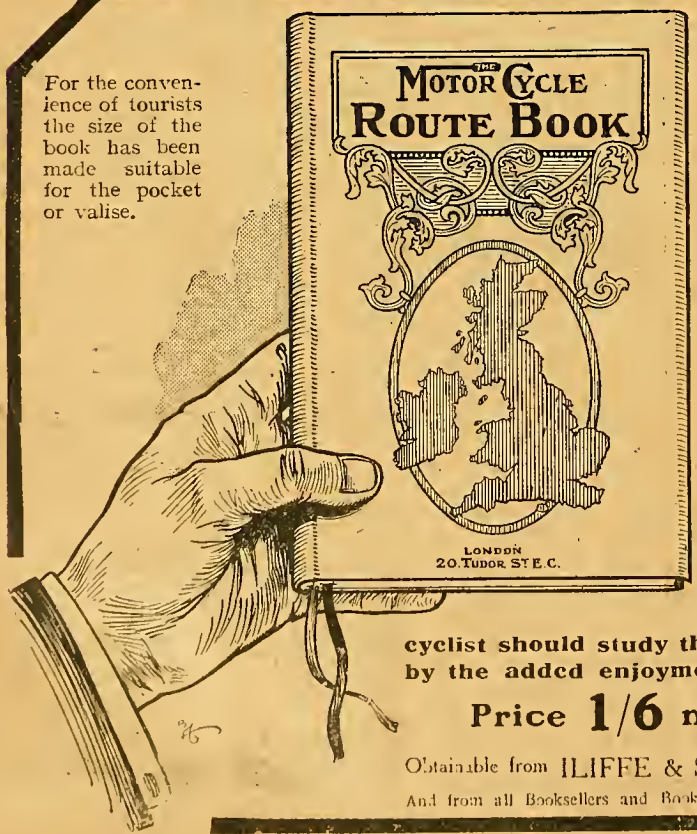
ACCESSORIES. REPAIRS.

Established THE MOTOR MAINTENANCE COMPANY Ltd. 1907.

184, Great Portland Street, W.

Tele { phone: 4839 Mayfair.
grams: "Motenance, London."

For the convenience of tourists the size of the book has been made suitable for the pocket or valise.



Know your road before you start.

It will save much time and discomfort.

"The Motor Cycle" Route Book contains carefully selected routes for the whole of the British Isles, with distances clearly shown; 45 Sectional Maps and Index Map (by Bartholomew), Speed Limits, and a copious index.

In every case the BEST route—and not necessarily the shortest—has been chosen. Large towns, congested districts, and bad roads are avoided.

Before commencing a tour every motor cyclist should study this book carefully. He will be well repaid by the added enjoyment which comes of freedom from worry.

Price 1/6 net. **By Post 1/9.**

Obtainable from ILIFFE & SONS LTD., 20, Tudor Street, LONDON, E.C.

And from all Booksellers and Bookstalls. *(Remittance should accompany orders sent by post.)*

WHY HESITATE?

We supply any make of Motor Cycle, Tricar, or Runabout, at from £10 down, and the balance by instalments within 12 months! What can be fairer? What can be better? The trifle that we charge extra for the accommodation you will never miss, while you have the pleasure of riding the machine; you have the pleasure of having a new machine, and your Capital is left untouched. Don't hesitate, remember we have the machines in stock, ready for immediate delivery. We are NOT advertising from other people's lists, neither are we advertising from other people's stocks. We have bought the largest stock of new Motor Cycles in the whole world, and we recommend the following, amongst which, where more than one Model is made, we stock the lot:

Rudges, Scotts, P. & M.'s, Bradburys, Zenith, Humbers, Matchless, Bat-Jap, Clyno, Premier, Morgan Runabout, A.C.'s, G.W.K.'s, Motosacoches, Lincoln Elks, Rex-Japs, etc., etc.

We can also supply any of the high-class accessories, such as F.R.S. and Lucas Lamps, and all other things that you can mention. You need not go further. They will all be added to the bill, and can be paid for on the same terms.

If you have the cash, you save money by dealing with us.

We have a few second-hand machines left, also a few hundreds of pounds worth of accessories, and these you can hear all about by writing for one of our lists—free to all.

Remember, in the past we did the largest swapping trade in the kingdom, and we are now hoping to do the largest Deferred Payment trade in the kingdom. Our terms are better than others, and our reputation has stood the test of time. We DO NOT sell our debts to Jewish Moneylenders, who will serve you with a writ the first time you miss. It is our interest to treat you well, and you will find us do so.

In the matter of deliveries, remember that all high-class Motor Cycles are difficult to get hold of. WE have them, and want YOU to have them. We are still at the same address, and have no other depots.

The canaries are in full song, and if you come to Morecambe, don't forget to come in and see them.

We can now Garage you, Bhoys, please remember that, and shall be glad for you to blow in.

Note the old address:

Hitchen's, Ld.,
MORECAMBE.

Telephone: 112.
Telegrams: "Motor, Morecambe."

Books for Motor Cyclists

Motor Cycles and How to Manage Them.
The standard Handbook of the Motor Cycle. Fifteenth edition, revised and enlarged, now on sale. Price 1/- net. By Post 1/3.

Hints and Tips for Motor Cyclists.
Full of useful "wrinkles" with regard to the care and management of motor cycles. 3rd edition. Price 1/- net. By Post 1/2.

The Motor Cycle Route Book.
Contains best routes for the whole of the British Isles, 45 maps and speed limits. Price 1/6 net. By Post 1/9.

Obtainable (with remittance) from ILIFFE & SONS LTD., 20, Tudor Street, LONDON, E.C., also from all Booksellers.

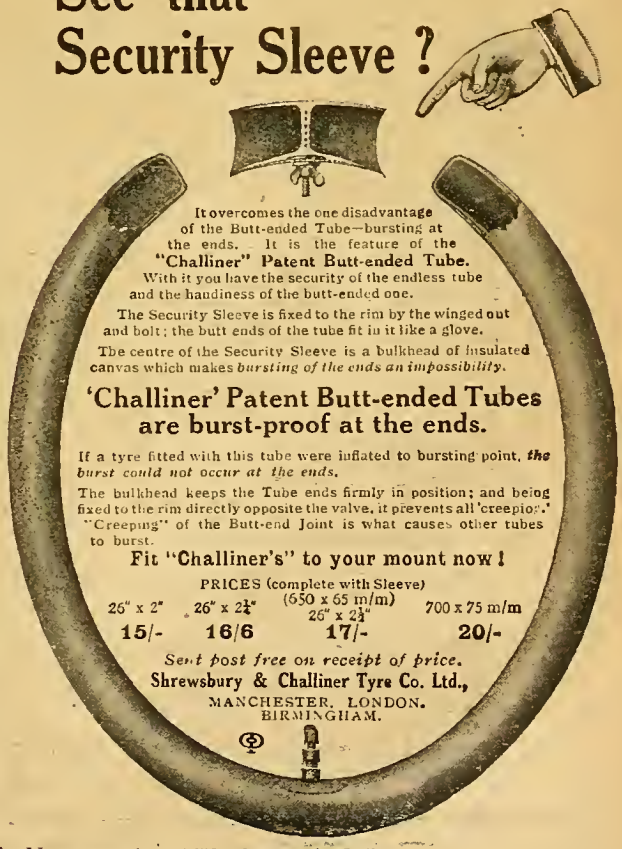
J. B. JACQUEMIN BROS.'
COLLAPSIBLE "CHLOROPHYLLE" EYE PROTECTORS.
(ALLCHISON'S PATENT.) REGD
WORLD'S RECORD.

Mr. W. J. CLARKE writes—"I used a pair of your Goggles during my recent Six Days' **World's Record Motor Cycle Ride** of 3,000 miles. I must say the Goggles were a great help to me and acted spleodidly throughout; you well deserve to sell a large quaotity."



Strongly recommended by Mr. J. L. Norton.
PRICE from 4/9 CHLOROPHYLLE LENSES, 3/6 PLAIN (Postage 2d.)
WRITE—CHAPPELL & CO., 11, Hatton Garden, LONDON.

See that Security Sleeve?



It overcomes the one disadvantage of the Butt-ended Tube—bursting at the ends. It is the feature of the **"Challiner" Patent Butt-ended Tube.** With it you have the security of the endless tube and the handiness of the butt-ended one.

The Security Sleeve is fixed to the rim by the winged nut and bolt; the butt ends of the tube fit in it like a glove.

The centre of the Security Sleeve is a bulkhead of insulated canvas which makes *bursting of the ends an impossibility.*

'Challiner' Patent Butt-ended Tubes are burst-proof at the ends.

If a tyre fitted with this tube were inflated to bursting point, *the burst could not occur at the ends.*

The bulkhead keeps the Tube ends firmly in position; and being fixed to the rim directly opposite the valve, it prevents all 'creeping.' "Creeping" of the Butt-end Joint is what causes other tubes to burst.

Fit "Challiner's" to your mount now!

PRICES (complete with Sleeve)

26" x 2"	26" x 2¼"	(650 x 65 m/m) 26" x 2½"	700 x 75 m/m
15/-	16/6	17/-	20/-

Sent post free on receipt of price.
Shrewsbury & Challiner Tyre Co. Ltd.,
MANCHESTER, LONDON, BIRMINGHAM.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns.—First 14 words or less 1/6, and 1d. per word after. Each paragraph is charged separately. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.



SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII.
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

SECTION IX.
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.



FOR CERTAINTY OF SATISFACTION
in getting just the motor you want, immediately, at the price you want to pay

GO TO

WAUCHOPE'S

TO-DAY'S BARGAIN LIST INCLUDES

The firm with the kingdom's largest stock at lowest prices, famous for promptest delivery and the most liberal exchange terms.

5625.	3½ h.p.	**REX**	£7 10
5633.	3½ h.p.	1911 **KERRY ABINGDON**	30 Gns
5637.	3½ h.p.	1910 F.E. **TRIUMPH** and sidecar	£40 0
5640.	3½ h.p.	1911 2 speed **HUMBER** ..	£37 10
5659.	3½ h.p.	**ROC**, free engine model ..	£16 10
5663.	3½ h.p.	1909 **REX**, free engine ...	£22 0
5666.	2¾ h.p.	1911 2 speed **DOUGLAS** ..	£37 10
5424.	3½ h.p.	1912 free engine **BRADBURY**	£45 0
5540.	8 h.p.	1911 2-speed **MATCHLESS** and sidecar	£65 0
5569.	3½ h.p.	1910 **KERRY ABINGDON**	£32 10
5603.	5-6 h.p.	1911 4-cylinder **F.N.**	£33 10
5606.	5-6 h.p.	1908 2-speed 4 cyl. **F.N.**..	£25 0
5609.	6 h.p.	twin **BUCHET** and sidecar	£27 10
5612.	3½ h.p.	1909 tourist **REX**	£22 10
5613.	3½ h.p.	1908 **MATCHLESS-J.A.P.**..	£18 0
5614.	2¾ h.p.	1912 Model K **DOUGLAS**..	£50 0
5615.	3½ h.p.	1912 2-speed **HUMBER** ..	£45 0
5616.	7 h.p.	1909 2-sp. **V.S.** and sidecar	£35 0
5617.	2¾ h.p.	1911 2-speed **DOUGLAS**, Model D	£35 0
5618.	3½ h.p.	1911 **BAT-J.A.P.**	£33 10
5621.	2¾ h.p.	1912 3-speed **HUMBER** ..	£45 0
5566.	3½ h.p.	1909 **TRIUMPH**	£31 0
5571.	2¾ h.p.	**HUMBER**	£15 0
5586.	3½ h.p.	1911 standard **BAT**	£35 0
4260.	2¼ h.p.	**BRADBURY**	£8 10
5158.	3½ h.p.	1908 2-speed **N.S.U.** and sidecar	£25 0
5169.	5 h.p.	1908 twin **G.B.**	£20 0
3931.	5 h.p.	1910 tourist **REX**	£30 0
5504.	3½ h.p.	1910 **PREMIER**, Mahou free engine	£24 0
5519.	3½ h.p.	1910 Standard **TRIUMPH**	£33 0
5532.	6 h.p.	1912 **REX** Sidette	£60 0
5542.	3½ h.p.	**QUADRANT**	£17 10
5543.	3½ h.p.	1911 3-sp. Lady's **HOBART**	£35 0
5547.	6 h.p.	1911 **ZENITH GRADUA** and sidecar	£63 0
5559.	3½ h.p.	1908 **TRIUMPH**	£29 0
5560.	2¼ h.p.	1912 Standard **PREMIER**	£30 0
5562.	2¾ h.p.	1909 **DOUGLAS**, Roc 2-sp.	£29 0
5036.	2½ h.p.	1911 **MOTOSACOCHE**	£27 0
5009.	3½ h.p.	1911 T.T. **BRADBURY** ..	£32 0
5055.	3½ h.p.	1911 **L.M.C.**, variable gear	£35 0
5287.	2¾ h.p.	1911 **DOUGLAS**.....	£28 0
5006.	3½ h.p.	1910 T.T. **TRIUMPH**	£34 0
5066.	3½ h.p.	1911 **BRADBURY**, Mabon cl.	£37 10
5332.	5-6 h.p.	1911 4-cyl. **F.N.**	£33 10
5358.	2¾ h.p.	1912 2-speed **ENFIELD** ..	£47 0
5468.	3½ h.p.	1911 **BRADBURY**	£35 0
5327.	7 h.p.	1911 2-speed **REX DE LUXE**	£45 0
5285.	2 h.p.	1910 **MOTO-REVE**	£20 0
4863.	3½ h.p.	1911 **CHATER-J.A.P.**	£32 0
5420.	2¾ h.p.	1911 2-speed **ENFIELD** ..	£40 0
5460.	2¼ h.p.	1910 2-speed **F.N.**	£27 10
5471.	3½ h.p.	1911 F.E. **BRADBURY** ..	£38 0
5293.	2¾ h.p.	1911 **ENFIELD**	£40 0

ASK FOR TO-DAY'S LIST.

ALWAYS OVER 300 1912 NEW AND GENUINE SECOND-HAND MODELS READY FOR IMMEDIATE DELIVERY FOR CASH OR MOST LIBERAL EXCHANGE TERMS.

9, SHOE LANE, FLEET STREET,
LONDON, E.C.

'Phone: Holborn, 5777.
Wires: "Opificer, London."



NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration, and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry"; or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20, Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged, when under £10 the fee is 1s. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

SCOTT, 1910 model, just overhauled at works, in perfect order; accept £36.—Walton, Nook St., Workington. [X3752

3½h.p. Minerva, low, modern frame, Palmers, B. and B., h.b.c., splendid condition; £10/10.—Operator, Palace Theatre, West Hartlepool. [X3820

5½h.p. Vindec Special, late 1910 model, magneto, Whittle belt, new tyres, adjustable pulley, a first-class mount.—Burne, Appleby, Westmorland. [X3083

SECTION II.

York and Lancashire.

GOURLAY.

GOURLAY for Douglas.

GOURLAY, the great Douglas agent.

GOURLAY.—The great 8h.p. Williamson in stock.

GOURLAY, the great Douglas agent.

GOURLAY, sole agent for the great 8h.p. Williamson.

GOURLAY, the great Douglas agent.

GOURLAY bought the first great 8h.p. Williamson.—Sole Manchester agent.

GOURLAY has sold the great Douglas from the start.

GOURLAY, Fallowfield, sole Manchester agent. [X3746

3½h.p. Fafnir-Chater-Lea, mag., free engine, Albion clutch, scarcely used; £24.

1910 6h.p. Twin Rex de Luxe and First-class Sidecar, new back tyre, this machine has been very little used; £36.

2½h.p. Rex Lightweight, mag.; £16.

3h.p. Brown, mag.; £10/10.

3½h.p. N.S.U., mag., Whittle belt, complete with lamp and horn, all in perfect running order; £21.

1910 6h.p. N.S.U. Twin, 2-speed gear, free engine, in splendid condition, with sidecar; £47/10.

1912 Motosacoche, 2½h.p., var. gear, not ridden more than 50 miles; cost £44, offered at £39/10.

1912 6h.p. Rex-Jap Twin de Luxe, run about 250 miles; cost £71/10, offered at £63.

CLARK and Co., Motor Engineers, Doncaster. [1480

N.S.U., 2h.p., perfect order, Bosch, B. and B., all red; £15.—31, Shakespeare St., Southport. [X3546

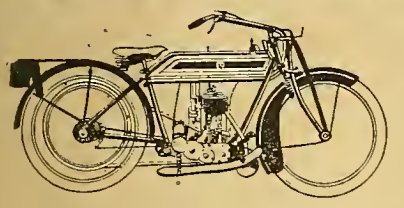
The Halifax Motor Exchange

Largest Rex Dealers,

16, WESTGATE, HALIFAX.

'Phone, 766. Telegrams, "Perfection."

BRAND NEW 1911 REXES.



	Makers' price.	Ours.
3½ h.p. Rex Tourist	43 guineas	**34 guineas**
3½ h.p. Free-engine	48 guineas	**39 guineas**
3½ h.p. 2-speed De Luxe	57 guineas	**46 guineas**
5 h.p. 2-speed De Luxe	60 guineas	**51 guineas**

All new and guaranteed. Exchanges liberally dealt with.

SPECIAL.—Easy payments at 5% extra. Low deposits, twelve monthly payments.

SIDECAR COMBINATIONS.

REX DE LUXE, 6 h.p., 1912, and new sidecar	**£67 15**
N.S.U., 3½ h.p., 2-speed, and Montgomery sidecar	**£38 10**
REX DE LUXE, 5 h.p., 2 speeds, and sidecar	**£37 10**
BRADBURY, new, 1912, 3½ h.p., 3 speed, new s'car	**£63 15**
REX DE LUXE, new, 3½ h.p., 1911, 2 speeds, and new sidecar, great bargain	**49 Gns**

CASH OR EASY PAYMENTS.

BRADBURY, new, 1912, 3½ h.p., standard	**£48 0**
REX, 2 speed Junior de Luxe, new	**£45 0**
SCOTT, w. c., 2 speed, Aug., 1910	**£34 10**
REX, 3½ h.p., 1911, clutch model, as new	**£34 10**
REX, 7 h.p., 1911, Tourist	**£35 0**
REX, 3½ h.p., 1910, little used	**£26 10**
TRIUMPH, 3 h.p., magneto	**£22 10**
REX, 3½ h.p., 1911, Tourist, new	**£35 14**
REX, 3½ h.p., 1911, clutch model, new	**£40 19**
M.M.C., 3½ h.p., torpedo tanks	**£10 10**
J.A.P., 2½ h.p., spring frame	**£9 10**
REX, 5 h.p., twin, spring forks	**£16 10**
KERRY, 2¾ h.p., vertical engine	**£9 10**
REX, 3½ h.p., spring forks, h.-b. control	**£14 10**
QUADRANT, 3 h.p., spray carburetter	**£9 10**
REX, 3½ h.p., magneto, h.-b. cootrol	**£18 18**
BROWN, 3½ h.p., h.-b. control	**£14 10**
BAT, 2¾ h.p., spring frame	**£10 10**
REX, 3½ h.p., light and low	**£12 10**
DE DION, vertical engine, good	**£10 10**
J.A.P., 2½ h.p., spring forks	**£8 10**
REX, 2½ h.p., magneto, lightweight	**£16 10**
ROBINSON & PRICE, 2¾ h.p., magneto	**£14 10**
KYNOCH, 3 h.p., Chater-Lea frame	**£8 10**
KERRY, 2¾ h.p., footboards	**£8 10**
REX, 1910, 5-6 h.p., twin, very fast	**£29 10**
CHATER-LEA-MINERVA, 2¾ h.p., Nala 2-speed, spring forks	**£18 18**
REX, 3½ h.p., belt drive	**£8 10**
REX, 1911, 3½ h.p., new, 1912, magneto, and fittings	**35 Gns.**
REX, 1912, 6 h.p., 2-speed, de Luxe	**£62 10**

1912 SIDECARS.

Illustrated List on application.

"Exchange," with Continental motor cycle tyre	**£5 5 0**
"De Luxe," with best tyre, apron, footmat	**£6 6 0**
Ditto, with reversible child's seat	**£7 0 0**
Ditto, with best coach-built body	**£7 12 6**

Improved Quick Detachable Joints, cranked extra stroog back axle and spindle, tip-up body, and caged ball races to all models. Prompt delivery to suit Rexes, Triumphs, N.S.U.'s, Indians, and any other make.

Discount to trade. Exchanges entertained.

MOTOR BICYCLES FOR SALE.

2 h.p. Werner, vertical engine, h.b.c., spring forks, accumulator ignition, low frame, good running order; £8.—Chichester, Walton, Wakefield. [X3076

4 h.p. Martin, Chater-Lea frame, Xl'All saddle, mag., Amac, h.b.c., new Palmer tyre; £8 quick sale, real bargain.—Tuson, Fishergate, Preston. [X3698

1912 4h.p. L.M.C. Motor Cycle, 2-speed and free, complete, with sidecar, like new, £65; 1911 3½ h.p. free engine Rover, like new, £35.—Woolley Bros., 23, Roundhay Rd., Leeds. [X2572

1912 3½-4h.p. 3-speed free engine Armstrong, and all the latest and best fittings; owner going abroad; must sell, price £50; also sidecar for same, £5.—Wignall, Banks, near Southport. [X3653

B.S.A., 1912, 3½h.p., 2-speed, month old, ridden 50 miles; cost, complete with spares, £65, accept £56/10; owner bought cyclecar; genuine bargain.—19, Chandos Av., Lidgett Lane, Moortown, Leeds. [1567

INDIAN, blue, 5h.p., 1911, free engine, splendid condition, ran only 1,100 miles, horn, F.R.S. lamp, grid generator, £43; Montgomery car, only 200 miles, £8; cost £77.—Leeming, Park St., Royton. [X3684

1912 T.T. Rudge, special, racing tank and filler caps, lamp and generator, tools, horn, £40; also 1912 standard, 400 miles only, £40; S.H. sidecar, £4/10.—Anderson, Gorsehill, Stretford, Manchester. [X3754

5 h.p. V.S., N.S.U. 2-speed, good condition throughout, new belt and Palmer cord tyre, lamp, horn, tools, and spares, £31/10; F.S.L. sidecar, new in Dec., £5.—Broughton, Waterloo Rd., Hunslet, Leeds. [X3822

1912 Quadrant, 4½h.p., Armstrong 3-speed, new May 28th, 1912, ridden 30 miles, perfect. Lucas lamp horn, Whittle, belt case, overalls, tools, plugs, spare belt; giving up; £51.—Coupe 27, Pilot St., Accrington [X3656

SPECIAL Clearance Offer.—New 1911 motor cycles, free engine, Tourist or 2 speeds, at reduced prices; easy payments from £10 deposit, balance in 12 monthly payments.—Halifax Motor Exchange, Westgate, Halifax. [1685

1910½ 2¼h.p. F.N., magneto, 2 speeds, free engine, clutch, shaft drive, spare valve, Autoclipse lamp, Lucas generator, not run 800 miles, Wednesday afternoons; £30, bargain.—Rooke, 65, Castle Terrace, Penistone, Sheffield. [1603

PHELON and Moore, 1910-1911, 3½h.p., 2 speeds, and free engine, absolutely perfect condition and indistinguishable from new, new Kempshall tyres; £50, or best offer.—W. H. Ireland and Co., Motor Works, Saukey, Warrington. 'Phone: 8 Penketh. [X3545

1912 Premier, 3½h.p., Armstrong 3-speed, new last Whitsuntide, Bosch, Druids, Lycetts pan seat, Jones £5/5 speedometer, Rotax horn, F.R.S. lamp and generator, complete set of tools; a bargain, £48/10.—Danner's Accessories, Ltd., 18, Mount St., Manchester. [X3702

L.M.C., 1911, free engine, very low position, in perfect order; first cheque secures, £33, no offers.—Danner's Accessories, Ltd., 18, Mount St., Manchester. [X3703

LIVERPOOL.—Deliveries from stock: 3½h.p. Bradburys, new; 6h.p. Zenith, new; 3½h.p. Zenith, new; 4h.p. Singer, 2 speeds, new; 2¼h.p. Singer, 2 speeds, new; 3½h.p. Ariel, var. gear, new; 3½h.p. Ariel T.T., 3 speeds, new; 6h.p. Rex T.T., new; 2h.p. Alcyon, new —F. C. Jones and Co., 3, Redcross St., Liverpool. [X3893

7 h.p. Indian, blue, £44; 1910 Scott, speedometer, etc., £40; 1910 3½h.p. Norton, £28/10; 3½h.p. Premier, little used, £28/10; 1911 T.T. roadster Bradbury, as new, with spares, £38; lightweight Humber, new, £30; 1911 free engine Triumph, with accessories, £40; 1910 standard Triumph, £40.—Seal and Ball, 24, Nevill St Southport. [X3770

NORTHERN Depot, Ltd., Everything Motorish, Leece St., Liverpool.—All the latest 1912 models in stock, clutch and standard models Kerry-Abingdons; also one shop-soiled clutch Kerry-Abingdon, £48; Rover, fitted with Armstrong gear, Mark III and Brocks pan seat; Bradbury, 2-speed, with adjustable pulley; clutch Triumph; cone clutch 4h.p. Rex-Jap. [X3651

2ND-HAND Machines.—1912 Bradbury, £42; 1911 Bradbury T.T., £35; 1911 Indian, 7h.p., 2 speeds, £50; 1911 2¾h.p. Moto-Reve, £25; 1910 Indian, 5h.p., £30; 1910 Triumph free engine, £36; 1910 Triumph standard, £35; 1909 Triumph standard, £25; 1910 Bradbury, 2 speeds, and sidecar, £40; 1910 Scott, 2 speeds, £35.—F. C. Jones and Co., 3, Redcross St., Liverpool. [X3893

3½h.p. Rex-Chater-Lea, m.o.v., spring forks, Lycette spring saddle, 1911 B. and B., var. jet carburetter, Bowden, h.b.c. throughout, exhaust whistle, sight-feed lubricator, new Dunlops, 26×2¼, Palco separate generator, head light, large brown toolbag, adjustable footrests, footboards, tools, spares, pump, etc., mechanically perfect, guaranteed; cost 55gns., sell £16/10. — F. W. Allsopp, Bradford Hotel, Openshaw, Manchester. [X3831

GREAT Sale of motor cycles.—3½h.p. Rex, £7/10; 4h.p. Chater-Lea, magneto, spring forks, B. and B., £12; 3h.p. Triumph, £9; 1909 Douglas, £18/10; 1911 Kerry-Abingdon, £28; 5-6h.p. Rex, 1909, twin-cyl., free engine, and sidecar, £25, worth £40; 1908 Triumph, new condition, £25; P. and M., nearly new, 2-speed, free engine, £37/10; we have about 60 second-hand motor bikes in stock, consisting of 1907, 1908, 1909, 1910 Trimmphs, prices from £15; several Bradburys, Singers, Moto-Reves; all machines sold are warranted in good order; sidecars from 50/-.—The Motor Cycle Exchange, 160, Young St., Sheffield. [0100

REY

5, HEATH STREET, HAMPSTEAD.

Close to Hampstead Tube Station.

Tele: "Rey, Hampstead." Tel: 2678, P.O., Hampstead.

IMMEDIATE DELIVERY

AND IN STOCK TIME OF GOING TO PRESS.

SCOTT 2-stroke	1912
P. & M. 2-speed	1912
CLYNO 5-6 h.p. 2-speed	1912
ZENITH, All Models	1912
TRIUMPH, All Models	1912
RUDGES, All Models	1912
BRADBURY, All Models	1912
SINGER, All Models	1912
B.S.A., All Models	1912
DOUGLAS, All Models	1912
LINCOLN ELK 3½ h.p.	1912
HUMBER 3½ h.p. 2-speed	1912
MATCHLESS, All Models	1912
A.C., 2 weeks	1912
G. & N., 15 days	1912

Any other makes on application.

TRADE SUPPLIED WITH VARIOUS MAKES. LIBERAL DISCOUNTS ALLOWED.

Machines at Bargain Prices to Clear.

1911	**SCOTT** 2-speed	**£39 0**
1911	**DOUGLAS**	**£25 0**
1911	**F.N.** 5-6 h.p.	**£29 0**
1910	**F.N.** 5-6 h.p.	**£18 0**
1910½	**REX** 3½ h.p.	**£23 0**
1911	T.T. Roadster **TRIUMPH**	**£38 0**
1912	T.T. **RUDGE**	**£38 0**
1910	**DOUGLAS**	**£22 0**
1911	**ZENITH**	**£35 0**
1911	**BRADBURY**	**£28 0**
1911	**QUADRANT**	**£28 0**

All Accessories included on S.H. at the price advertised



The £4-10 REY Sidecar £3-10

With Hutchinson or Michelin 26×2¼ tyre and tube, 30/- extra.

ONLY HOUSE IN ENGLAND FOR QUICK DELIVE

REY

	£5 5 0
	£6 6 0
	£7 10 0
	£7 12 6

...e Joints, Cranked Extra ...e to all models. Prompt ...umphs, N.S.U.'s, Indians, and

5, HEATH STREET, ...ade. Exchanges entertained.

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue

LAMPS on SIDECARS.

The compulsory fitting of lights to sidecars is bound to come. We saw this long ago, and for the past 5 months have included a lamp with all our sidecars without extra charge.

OUR REED CANE BODIES

have undoubtedly hit the mark.

Undoubtedly this class of cane is far superior and more classy than ordinary cane or wicker work, besides being considerably lighter. These beautiful sidecars appeal to those who want absolutely the best.

Model E



£7 10s.

Model F



£8 8s.

OUR POPULAR MODELS ARE GOING STRONG.



Model de Luxe—£6 5s.



Model C.—£7.



Model E.—£7 5s.



Model D.—£8.

Complete with Lamp, Foot Mat, Kick-up Stand, Quick Detachable Joints, Continental or Michelin Tyres, Round or Car Pattern Mudguard, and CARRIAGE PAID. Send for list.

MISCELLANEOUS BARGAINS.

P. & M. Carburetter, h.h. control	10/-
2½ h.p. Sarolea Engine	£1 5
4½ h.p. Astel Engine, water-cooled	£4 10
4½ h.p. Buchet Engine, water-cooled	£4 10
2 h.p. Stationary Engine water-cooled	£4 10
3 h.p. Simms Engine, M.O.V.	50/-
Cocoanut Fibre Sidecar foot-mats	3/-
Clutch, fits Triumph	47/6
Screw cutting Lathe, 4in. centres	£6 10
Bi05 Saddle	10/6
1930 New Saddle, 1912 model	14/6

Glos., Cheshire, Cocoanut Fibre Sidecar foot-mats 3/-
Hertford, Essex, Screw cutting Lathe, 4in. centres £6 10
Somerset, Devon, Bi05 Saddle 10/6
Scotland, 1930 New Saddle, 1912 model 14/6

SECTION

Motor Exchange

Ireland and Isle of Man. **Hopwood Lane.**

All letters relating to adv (Two minutes from G.P.O.)

MOTOR BICYCLES FOR SALE.

SECTION III.

Carnarvon, Denbigh, Flint, Cheshire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

1912 B.S.A., free engine, new, not ridden 10 miles; £52.—Fred Peel, butcher, Alfreton. [X3625

1912 F.E. Triumph, complete, as new, with extra bags.—Hussey, Vine St., Stafford. [X3721

B.S.A., 3½h.p., ridden few months, as new; cost £50, accept £37/10.—Kenworthy, ironmonger, Alfreton. [X3626

DOUGLAS, 1911, lamp, horn, accessories, good condition; £28, lowest.—"Journal" office, Alfreton. [X3519

3h.p. Bradbury, accumulator, new belt, lamp, good condition; £12/10.—Ditchfield, Audlem, Cheshire. [1397

PHELON and Moore, uncrated; first cheque £61 secures.—Lynton, Wright's Lane, Old Hill, Staffs. [X3835

1912 3½h.p. Zenith, in perfect condition, done 1,500; £47, or near.—Fox, Whittington Golf Club, Lichfield. [X3671

1911 5h.p. Red Indian, clutch, splendid condition; £35; any trial given.—S. Minshall, Stoneway, Bridgnorth. [X3764

1912 Bradbury, 2-speed, and sidecar; cost £65, as new, accept £57.—Swindell, Buxton Rd., Tideswell, Buxton. [1623

N.S.U., 1909, 3½h.p., mag., B. and B. carburetter, new tyres; £22, a bargain.—Wild, Grove Lane, Hale, Cheshire. [1587

ZENITH Gradua, 3½h.p., 1911½, perfect condition, all accessories; £40, or near offer.—37, Warren Drive, New Brighton. [X3428

TRIUMPH, 1911, 3½h.p., F.E., scarcely used, as new, £45; Singer, 1912, 3½h.p., F.E., £50.—Ranford Garage, Malvern. [X3084

1912 Triumph, free engine, perfect condition, very little used; what offers?—Box 829, *The Motor Cycle* Offices, Coventry. [X3765

J.A.P.-CHATER-LEA, 3½-4h.p., in first-class condition; £30, or exchange Douglas and cash.—Charlton, Cavendish Rd., Bowdon. [X3595

1912 Bradbury, chain drive, £58/10; 1912 Rover, 3½ h.p., 3-speed, £59/10; exchanges invited.—Thos. Booth, Frodsham, Cheshire. [X3682

3½h.p. N.S.U., £23; 3½h.p. Rex, £20; or exchange for 5-6h.p. or new boots, clothing, or drapery.—Warren, Barlbro' Rd., Clowne. [X3654

DOT Motor Cycle, 7h.p., 1911 model, little used, with or without sidecar; bargain.—Write for particulars Hanley Garage, Ltd., Cheapside, Hanley. [X3418

IMMEDIATE Delivery Triumph, 3-speed, and clutch models; 2½h.p. 2-speed A.J.S.; James, 2-speed, chain drive.—Nelson, Gloddaeth St., Llandudno. [X3678

JAMES, 2-speed, chain drive, ready July 8th; first deposit secures; other models in stock; also 1912 Arie., F.E. model.—Moseley, George St., Walsall. [X3075

1911 T.T. Roadster Triumph, splendid condition, watch, horn, Cowey speedometer, all spares; £40.—Box 810, *The Motor Cycle* Offices, Coventry. [X3515

TRIUMPHS, free engines, in stock; B.S.A., 2-speed models and free engine models, in stock; immediate delivery.—Motor Depot, High St., Blackheath, Staffs. [X3834

3½h.p. Triumph, perfect condition, fitted with N.S.U. 2-speed, powerful engine, Whittle belt, sidecar lamp, horn; £39, or nearest.—150, Chester St., Birkenhead. [X3776

ENFIELD Lightweight, good condition, hill-climber new 2in. Dunlop back tyre, new belt, pulley, etc., rebushed; £25, or nearest.—Summerfield, ironmonger Winsford. [X3509

1912 4h.p. Rex-Jap, standard model, done under 300 miles, lamp, horn, and tools, as new; giving up motoring; £44, no offers.—C. Alcock, 16, Murdol Shrewsbury. [X3829

INDIAN, 1912, 7h.p., F.E., clutch, and brand new Canoelet sidecar; cost £80/10 Whitsuntide, sacrifice £69; very little used; sell separate.—61, Wright's Lane, Old Hill, Staffs. [X3836

TRIUMPH, 1908½, in fine condition, very fast, new bearings, Clinchers, carefully used; £27/10; good 2-speed combination considered; cash either way.—D. Thomas, Rossall Farm, Shrewsbury. [X3779

TRIUMPH, free engine model, bought in November, Palmer cord, special whistle, full kit; 1909 standard, complete and sound; 1912 free engine Triumph in stock.—Lloyd's, Gnol Rd., Stafford. [X3718

5h.p. T.T. Twin Rex, 1910, Bosch, 1912 B. and B. nearly new covers, tubes, belt, and saddle, very low gold-lined frame, good condition; £27; getting sidecar machine.—S. Ethelston, Hinton, Whitchurch, Shropshire. [X3601

MATCHLESS, 8h.p. passenger model, new October, 1911, with Cowey, new belts, new rear tyre on back; cost over £80; done near 2,000; £60, or near; property of an officer ordered abroad; any trial run.—Full particulars, Fox, Whittington Barracks, Lichfield. [X3670

MADE LIKE A GUN!!!

We have just secured a few Brand New

1911 ENFIELD MOTOR CYCLES.

2¼ h.p., M.O.V., magneto Druid forks, h.b. control to carburetter and magneto, stand, carrier, kit of tools, shop-soiled only.

Price **£25** each.

IN STOCK.

We have the following new machines actually in stock.

1912 Standard **RUDGE**	£48 0
1912 3½ h.p. **NEW HUDSON** 3-speed	57 Gns.
1912 2¾ h.p. **NEW HUDSON**, 3-speed	47 Gns.
1911 3½ h.p. **PREMIER**, 2-speed	£48 0
1911 3½ h.p. **PREMIER**, Armstrong 3-speed	£46 10

SECOND-HAND BARGAINS.

1911 (Nov.) 3½ h.p. **RUDGE**, free engine	£39 0
1912 3½ h.p. **ROVER** free engine	£43 0
1910 **ENFIELD**, very good order	£19 0
1908 3½ h.p. **P. and M.**, 2 speeds	£28 0
3½ h.p. **N.S.U.**, magneto, spring forks	£17 0
2 h.p. **WOLF**, magneto, spring forks	£15 0
4 h.p. **ANTOINE**, M.O.V., 26in. wheels	£14 0
3½ h.p. **N.S.U.**, 2-speed, spring forks,	£16 0
1910 8 h.p. **BAT**, M.O.V., 2 speeds	£45 0
1911 Lady's **HOBART**, Armstrong 3-speed	£35 0
3½ h.p Twin **PREMIER**, fine machine	£25 0
1911 2½ h.p. **MOTOSACOCHE**, magneto	£23 0

SINGLE-CYLINDER REXES.

1910 3½h.p., fine goer	£27 0
1910 3½ h.p., extra good	£28 0
3½ h.p. 1909 Speed King, extra fine	£23 0
3 h.p 1908 Featherweight Rex Bosch mag.	£17 0

TWIN-CYLINDER REXES.

1910 5-6 h.p., Roc 2 speeds, very fine	£37 0
1906 5-6 h.p. Twin Rex	£16 10
5-6 h.p., Bosch, Lloyd's variable gear	£22 0
7 h.p. de Luxe, 2 speeds, M.O.V.	£48 0
5-6 h.p. de Luxe, 1908, 2-speed model	£28 0

SIDECAR COMBINATIONS.

8 h.p. **BAT**, 2 speeds, Millford sidecar	£50 0
5-6 h.p. 2-speed 1908 **REX** and sidecar	£33 0
7-9 h.p. 2-speed **REX** and sidecar	£53 0

£3 DOWN SECURES ANY OF THESE. BALANCE 5/- WEEKLY.

3 h.p. **MINERVA**, vertical, M.O.V.	£12 0
3½ h.p. **EXCELSIOR**, Amac, h.b. control	£10 0

£6 DOWN SECURES ANY OF THESE. BALANCE 7/6 WEEKLY.

3½ h.p. **N.S.U.**, 2 speeds, spring forks	£16 0
3 h.p. 1908 **REX**, Bosch magneto	£17 0
5-6 h.p. Twin **REX**, spring forks, h.b. control	£16 10
4 h.p. **ANTOINE**, M.O.V., vertical engine	£14 0
2 h.p. **WOLF**, A.J.S. engine, magneto	£15 0
3½ h.p. **N.S.U.**, magneto, spring forks	£17 0
4½ h.p. **HUMBER** Tricar, 2 speeds, wheel steering	£19 0
5 h.p. **HUMBER** Car, 2-seater, good goer	£22 0
5 h.p. **REXETTE**, Oppermann 3 speeds	£18 0

MOTOR CYCLE FRAMES.

We have a quantity of frames by well-known maker.

Price 32/6 each.

Rigid forks, 7/6 extra. Druid forks, 45/- extra. Enamelled and plated in first-class style.

MISCELLANEOUS BARGAINS.

5-6 h.p. Rex Engine, carb., silencers, etc.	£5 0
Duocar, 2 speeds, Bosch magneto	£25 0
26 × 2¼ Extra Heavy Kempshall Cover, new	£2 8
1912 B. and B. Carburetters, variable jets	28/6
1912 B. and B. Carburetters, single jet	27/-
1912 Senspray Carburetters	28/6
Camel 1in. Rubber Belting per foot	1/3
Sidecar Lamps, show red light behind	7/6
Trailer, 26in. wheels	25/-
New Toolbags, 9 × 6 × 3½in.	4/6
Sidecar Aprons, green or red, with studs	7/6
New Lycett's Tubular Carriers	4/11
Longuemare Carburetters	5/-

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane,

Telephone 919. **HALIFAX** (Two minutes from G.P.O.)

Please quote the number at the end of each advertisement, and the date of the issue.

SCOTT'S, Powell St., HALIFAX.

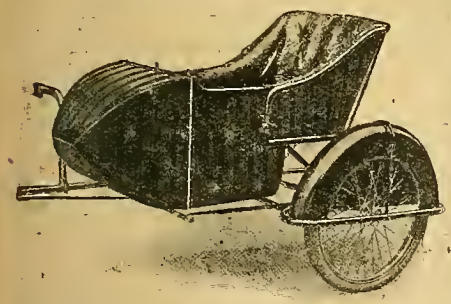
ALL MACHINES ACTUALLY IN STOCK

Two Multi Rudges in stock. First cheque secures. **PRICE £60.**

RUDGE 2-speed and free-engine and adjustable pulley; engine starts with the back wheel on the ground £56 10
RUDGE free-engine model £55 0
RUDGE standard £48 15
RUDGE T.T. £48 15
ROYAL ENFIELDS 1912, any model.
NEW HUDSON 3-speed ..... 57 Gns
ZENITH GRADUA £55 13
NEW HUDSON, 3 speed several improvements, not done 200 miles £50 0
PREMIER, 1912, new, with Armstrong special sidecar 3-speed hub £53 0
LINCOLN ELK, 1912, 3½ h.p. 2-speed gear, chain drive, kick starter, etc. £38 0
RUDGE standard, 1912, 3½ h.p., not done 300 miles, like new £43 0
HUMBER, 3½ h.p., 2 speeds, and free engine, like new £42 10
P. and M., 3½ h.p., late 1909, complete with 9 guinea Miller sidecar; a beauty £38 0
REX, 1911½, with 1912 improvements, 2-speed gear, suitable for sidecar work £40 0
N.S.U., 4½ h.p., 2-speed gear, free engine, Bosch magneto ignition, suitable for sidecar work £22 0
REX, 5 h.p., 2-speed gear and free engine, Bosch magneto ignition £20 0
MINERVA, 8 h.p., chain drive, P. and M. 2-speed gear, Chater-Lea frame, with sidecar, late 1911 ..... £40 0
TRIUMPH, 3½ h.p., like new, late 1910 .. £36 0
NEW HUDSON, 2¼ h.p., J.A.P. engine, 1912, Armstrong 3-speed gear, not done 200 miles £40 0
N.S.U., 3½ h.p., h.b.c. carburetter £17 0
JAMES, 1912, any model. Delivery from stock.
J.A.P.-CAMPION, new, 1912 ..... £38 0
F.N. Lightweight, 1911, 2 speed gear, free engine, shaft driven, complete with over £10 worth of spares £40 0
HUMBER, 1911, like new, complete £44 10
F.N., 1911, 6 h.p., 2 speeds and free engine, 4-cylinder, with 1912 engine £40 0
MOTO-REVE, late 1911, like new, 3 speeds and free engine £32 8
REX, 1910, Binks carburetter £25 0
CHATER-LEA-PEUGEOT 3½ h.p., magneto ignition h.b.c. £18 0

50/- down and **5/-** weekly secures any of the following:

REX & FORECAR, h.b.c., free engine clutch, etc. £14 0
KERRY 2¾ h.p. £8 0
EXCELSIOR 3 h.p., all improvements .. £8 0
REX 2 h.p., spray carburetter £7 0
HUMBER 3 h.p., chain drive low built £10 0
SINGER 3 h.p., chain drive, high tension magneto ignition, h.b. control, 26in. wheels £12 0
Two Motor Cycles requiring slight repairs, first cheque for **£5** secures both.



As illustrated, 10 GUINEAS.

S. & R. Sidecar, wicker basket, nicely upholstered £5 5
S. & R. with wheel supported at both sides £6 6
Write for a sidecar catalogue which tells you the latest improvements in sidecars.
Second-hand 9 guinea coach-built Sidecar £4 15
Second-hand 7 guinea £4 0



Footrests, post paid 2/10

SCOTT, Victoria Motor House, Powell Street, HALIFAX.
Telephone—433 National.
Telegrams—"SCOTT, Powell Street, Halifax."

MOTOR BICYCLES FOR SALE.

TRIUMPH, 1907, with 1909 cylinder and piston fitted last month, fitted with latest Sturmey-Archer 3-speed gear, can be started with wheel on the ground, the ideal machine for sidecar work, will do 50 or will crawl, climb anything on earth, B. and B. universal carburetter, h.b.c. throughout, including mag., new Lyso belt, tyres perfect, extra wide mudguards; any trial; approval with pleasure on deposit; best cash offer over £35; bought car.—Horswill, 103, Brook St., Chester. [1373

SECTION IV.

Nottingham, Lincoln, Leicester, Rutland, Northamptonshire, and Warwickshire.

NEW 7h.p. Indian, 2-speed model; delivery from stock.—Main, 36, Parade, Leamington.

2h.p. Humber, new September, 1911, in very good condition.—Main, 36, Parade, Leamington. [X2836

1908 Triumph, just been overhauled and new parts fitted; £24.—Plastow, Grimsby. [X2939

1911 5-6h.p. F.N., 4-cyl., bevel gear transmission, excellent order; £28/10.—Plastow, Grimsby. [X1944

2¾h.p. Minerva, Bosch magneto, fitted with Roe 2-speed gear, handle starting; £16/10.—Plastow, Grimsby. [X1945

1911 Humber, 2-speed, complete, lamp, horn, whistle, etc., run 2,000 miles, new condition; £37/10.—Plastow, Grimsby. [X1926

1911 Rudge, F.E., lamp, horn, generator, Kempshall heavy tyre; £39/10.—Plastow, Grimsby. [X3686

1912 Multi Rudge, brand new, complete with lamp and horn; offers.—Plastow, Grimsby. [X3687

1912 B.S.A., 2-speed, brand new, complete with lamp and horn, 2½in. Dunlops; offers. — Plastow, Grimsby. [X3688

1912 F.E. Triumphs, Clynos, Bradburys, in stock, no waiting.—Clifford's Motories, Eastwood. [X2739

JAMES, semi-T.T., 8 months, excellent condition; £38.—Viewed at 330, Hagley Rd., Birmingham. [1392

3½h.p. Premier, nearly new, powerful, perfect; 30gns. No. 827, *The Motor Cycle* Offices, Coventry. [X3672

DOUGLAS. 2¾h.p., late 1911, as new; £30; expert examination.—Salt, 90, Parade, Leamington. [X3739

BRADBURY, 1911, 3½h.p., run 1,200, perfect condition; £35.—K. Weatherell, East Bridgford, Notts. [X3713

B.S.A., 1911, splendid condition, very little used; £38.—44, St. Peter's Rd., Handsworth, Birmingham. [X3766

REX, 1911, 6h.p. twin, free engine, handle starting, £36; with sidecar £39.—95, Willes Rd., Leamington. [X3738

LADY'S Motosacoche, magneto, very reliable; great bargain, £19 cash.—Mrs. Morris, Athol Villa, Bourne. [X673

2¼h.p. Twin Royal Enfield, perfect condition, mag., h.b.c., tyres new; £25.—W. B. Fenton, Engle, Lincoln. [X3552

DOUGLAS, G model, just delivered, special saddle, horn, lamp, etc.—M. Macintosh, 89, New St., Birmingham. [1422

3½h.p. Twin Peugeot Bicycle, just thoroughly overhauled; £18.—30, Avondale Rd., Sparkhill, Birmingham. [X3724

2¾h.p. Twin Moto-Reve, in perfect condition in every respect; £17/10.—41, Spring Rd., Edgbaston, Birmingham. [X3798

TRIUMPH 1912 T.T. Racer, brand new; sacrifice £46.—Benton and Stone, Ltd., Bracebridge St., Birmingham. [X3071

TRIUMPH, 1909, perfect condition; open to expert examination; all spares; £27.—95, Linwood Rd., Handsworth. [X3507

3½h.p. Minerva, mag., spring forks, in thorough working order, excellent tyres.—69, Pershore St., Birmingham. [X3796

3½h.p. Brown, mag., spring forks, perfect in every detail; £16/10; any trial.—55, Summerfield Crescent, Birmingham. [X3797

1911 3½h.p. Triumph, standard model, with or without sidecar, perfect condition.—75, Northumberland Rd., Coventry. [X3511

L.M.C., 3½h.p., 1911 fitted with free engine, lamp, spares; £27.—Morley, Station Rd., Wylde Green, near Birmingham. [X3775

BRADBURYS, 1911, standard and free engine models, at clearance prices.—Farmer and Son, Central Garage, Coventry. [X3657

ENFIELD 2¼h.p. Twin, mag., not done 250 miles, shop-soiled only, as new; £25 cash; any trial.—J. Kirby, Theatre St., Warwick. [1627

N.S.U., 3½h.p., mag., 1907, new cyl., everything complete, including overalls, good condition; £16/10.—S.R., 100, Lawford Rd., Rugby. [1591

NEW Hudson, 2¾h.p., 3-speed, free engine, new March, with speedometer, lamp, horn, spares; 43gns.; perfect condition.—Ridley, Dunchurch, Rugby. [1586

PREMIER, 1911, new May, 1912, 3½h.p., lamp, horn, as new, specially timed engine; sacrifice £37.—153, College Rd., Moseley, Birmingham. [X3790

Collier's Motories,

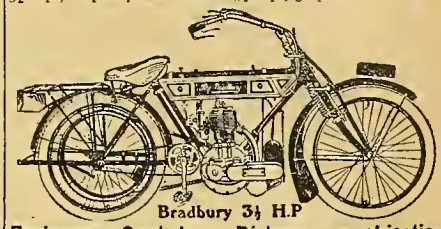
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THE IDEAL SIDECAR MACHINES.

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3½ h.p., tourist .... £48 3½ h.p., 2-speed, chain £53 10
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Bradbury 3½ H.P

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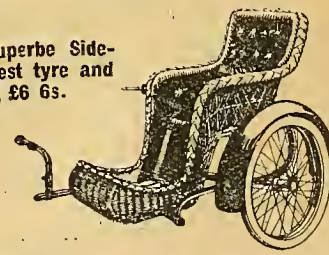
SECOND-HAND MACHINES.

—CASH, EXCHANGE, OR EASY PAYMENTS.—

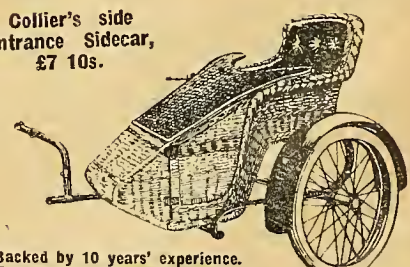
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1911 twin 2-speed **REX DE LUXE** £47 10
1911 3½ h.p. tourist **REX**, new and unused ..... 34 Gns
1911 3½ h.p. **HUMBER** and sidecar £39 0
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1911 3½ h.p. 2-speed **N.S.U.**, spring frame £35 0
2¾ h.p. **BAT**, spring frame £10 10
5 h.p. 2-speed twin **REX DE LUXE** and sidecar.. £37 10
1910 Twin **REX**, special finish £29 10
New 1911 3½ h.p. cone clutch **REX** ..... 39 Gns
2¾ h.p. **J.A.P.**, spring frame, h.b. control £9 10
3½ h.p. light, low **REX**, h.b. control £12 10
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5½ h.p. twin **REX**, spring forks £16 10
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16-20 h.p. 2-seater **WOLSELEY Car** £39 10
Twin-cylinder **REXETTE** to carry three £29 10

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Collier's Superbe Sidecar, with best tyre and apron, £6 6s.



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1912 6 h.p. STANDARD MODEL £58 0

BRADBURY

1912 3½ h.p. 2-SPEED CHAIN DRIVE £58 10
1912 3½ h.p. 2-SPEED, BELT DRIVE £55 0
1912 3½ h.p. STANDARD MODEL £48 0
*1911 3½ h.p. SPEED MODEL £36 0
*1911 3½ h.p. STANDARD MODEL £36 0
*1911 3½ h.p. STANDARD MODEL £38 0

CLYNO

1912 6 h.p. 2-SPEED, CHAIN DRIVE £88 5
(Delivery 7 days.)

CHAS. EDMUND.

1912 3½ h.p. J.A.P., SPRING FRAME £50 8

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1912 2¾ h.p. MODEL K £50 0
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1912 2¾ h.p. MODEL G £41 0
(Delivery 14 days.)
*1911 2¾ h.p. STANDARD MODEL £30 0
*1910 2¾ h.p. STANDARD MODEL £25 0
*1911 2¾ h.p. 2-SPEED & CLUTCH £37 0

HUMBER

1912 3½ h.p. 2-SPEED £52 10
*1912 3½ h.p. 2-SPEED £49 0
*1912 2¾ h.p. 3-SPEED £46 0
*1909 3½ h.p. 2-SPEED £27 0

IVY

1912 3½ h.p. PRECISION, STANDARD £42 0
1912 T.T. MODEL £45 0

NEW HUDSON

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1912 2¾ h.p. 3-SPEED £49 7

NORTON

1912 3½ h.p. STANDARD £48 0

RUDGE

1912 3½ h.p. MULTI-SPEED £60 0
1912 3½ h.p. CLUTCH MODEL £55 0
1912 3½ h.p. STANDARD MODEL £48 15
1912 3½ h.p. T.T. MODEL £48 15
*1912 3½ h.p. CLUTCH MODEL £50 0

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1910 3½ h.p. 2-STROKE, 2-SPEED, W.C. £30 0

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1912 6 h.p. £70 7
1912 8 h.p. £72 9
*1912 6 h.p. £64 0
*1912 3½ h.p. £49 0
*1911 6 h.p. £55 0
*1911 3½ h.p. £40 0
*1910 3½ h.p. £36 0

ALSO:

1912 SINGER, 4 h.p., 2-speed £65 0
*1912 LINCOLN ELK, 3 h.p. £29 0
*1912 CHATER-PRECISION, 4½ h.p. £39 0
*1911 PREMIER CLUTCH, 3½ h.p. £42 0
*1911 ENFIELD, 2¾ h.p., twin cyl. £28 0
*1911 F.N., 2½ h.p., 2-speed £33 0
*1911 N.S.U., 6 h.p., 2-speed £45 0
*1910 V.S., 5 h.p. 2-speed £33 0
*1909 F.N., 4-cyl. £20 0
*1909 REX, 5 h.p., CLUTCH £20 0

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TELEPHONE: MAYFAIR 5767

157b, GREAT PORTLAND STREET, W.

MOTOR BICYCLES FOR SALE.

QUADRANT, 3½h.p., m.o.v., mag. ignition, h.b.c. carburetter, spring forks; bargain, £19/10.—12, Bull Ring, Birmingham. [X3729

TRIUMPH, late 1911, T.T. model, 3½h.p., Clincher tyres, Brooks saddle, condition as new; bargain, £38.—12, Bull Ring, Birmingham. [X3730

MINERVA, 3½h.p., m.o.v., Bosch magneto, B. and B. carburetter, Kempshall tyres, spring forks, grey enamel; bargain, £19.—Brown's, 12, Bull Ring, Birmingham. [X3727

MOTOR Cycle, Antoine engine, 3½h.p., mag. ignition, low built; bargain, £14/10.—Brown's, 12, Bull Ring, Birmingham. [X3728

3½h.p. Bradbury, lamp, horn, accessories, new Dec., 1911, only ridden 700 miles, perfect condition; £40.—Harry Gamble, South Wigston. [1544

2½h.p. Vertical, m.o.v., 1911 Bosch and Amac, spring seat, footboards; £10, or nearest; must sell.—7, Trinity Rd., Handsworth, Birmingham. [X3782

3h.p. Whitley, Chater-Lea, low, long, brass torpedo tank, B. and B. 1911, new tubes, tyre, sound order; £13.—Meadows, Somerby, Oakham. [X3603

TRIUMPH, 1910½, free engine, £37; F.N., 1910, 2½h.p., 2-speed, £23; both little used, excellent and perfect condition.—Wescombe, Whittlesea. [1648

TRUMP-J.A.P., 1912, 4h.p., brand new engine, frame done 2,000 miles; £40; inspection and trial by appointment.—J.E.W., 52, St. Patrick's Rd., Coventry. [X1586

TRIUMPH (Oct., 1911), free engine, guaranteed perfect order, tyres unpunctured, not ridden 1,500 miles, horn, spares, tools; £44.—7, Radmoor Rd., Loughborough. [1493

TRIUMPH, 3½h.p., 1908, new Kempshall tyre and T. Lycetts saddle, excellent condition, takes sidecar; trial; bargain, £23/10.—168, Bath Rd., or 59, Broad St., Birmingham. [X3543

MATCHLESS, clutch, 1911, 3½h.p., little used, excellent condition, Lucas lamp, horn, spare belt, tube, and case, £35; Pilot sidecar, £3.—643, Bearwood Rd., Smethwick. [X3600

ROYAL Enfield, 1911, free engine, and 2-speed gear, in splendid condition, and will climb anything; £35, or near offer; would consider £20 and useful 3 h.p.—Johnson, accountant, Louth. [1357

2¾h.p. Minerva, engine overhauled by makers, new long handle-bars, saddle, mudguards, Lyso belt, Dunlop cover and inner tube on back, B. and B., all new; genuine bargain, £13.—Marshall, Ruskington, Sleaford. [X3669

1912 Motosacoche, 2½h.p., free engine model, practically new, perfect condition, an ideal gentleman's machine; list £38, accept £30; bought sidecar combination.—Address, Private Owner, 813, *The Motor Cycle* Offices, 20, Tudor St., E.C. [1407

£6.—2¾h.p. Vertical Humber, recently overhauled and enamelled, rebushed, new rings, h.b.c., very low, good covers, brand new belt and accumulator, new tank, climbs well, touches 30, good going order; trial here; guaranteed.—D. Chappell, Sketchley, Hinckley. [X3697

1912 Rudge, T.T., also F.E. Zenith, Singers, immediate delivery; 1911 F.E. Singer, just overhauled by makers, £39; two 1911 Triumphs, standards, condition excellent, not ridden since March, being taken in exchange; £37 each.—Midland Cycle Co., Coalville, Leicester. [X3832

SECTION V.

Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

1912 Triumphs; immediate delivery, free engine model.—Crabtree, Wisbech.

1912 Bradburys, 2-speed, immediately; 3-speed this month.—Crabtree, Wisbech.

1912 Humbers, in stock; 2h.p. lightweight, 2¾h.p. twin, 3-speed, 3½h.p., 2-speed.—Crabtree, Wisbech.

1912 Alldays-Matchless in stock, magnificent value, 40 guineas.—Crabtree, Wisbech.

1912 New Hudsons, 3-speed models; early deliveries.—Crabtree, Wisbech.

1912 Rover, free engine model, complete with lamp and horn, used few times, absolutely as new; £49.—Crabtree, Wisbech. [X2539

CHIEF Triumph Agents for Cambridge (early deliveries). King and Harper, Cambridge. [0032

LADY'S Advance, in good condition, mag., B. and B., h.b.c.; £18.—Liddiard's, Downing St., Cambridge. [1354

4-CYL. F.N., 1908, mag., in good condition; £16.—Liddiard's, Downing St., Cambridge. [1355

NEW 1912 Hazlewood, 2¾h.p., 3-speed gear, free engine; £49/7.—Liddiard's, Downing St., Cambridge. [1356

2h.p. F.N. Lightweight, Bosch, spring forks, tyres as new; £11/15.—Booker, Wercham, Stoke Ferry. [X3542

1910 5h.p. Twin Indian, in tip-top order and condition, complete; £39.—37, Scarle St., Cambridge. [X3809

LATE 1911 Standard Douglas, in good order and condition; £26.—3a, Bridge St., Cambridge. [X3808

1909 Mag. Motosacoche, in real good order and condition; £14.—37, Scarle St., Cambridge. [X3807

MOTOSACOCHE, 1912, 2½h.p., var. gear, free engine, new; £40, or near offer.—W. R. Palmer, Long Stratton, Norfolk. [1582

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CYCLE CARS.
FROM 95 GUINEAS.
A.C., C.M.C., G.W.K., P.M.C., DOMINANT.

SIDECARS

FROM £3 10 TO £22.

GRADUAL PAYMENTS.

NEW MOTOR CYCLES FROM
1%
SECOND-HAND FROM
5%
Any Motor Cycle or Accessory
(OVER £5 IN VALUE)

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ALL SPARE PARTS FOR ZENITH MOTOR CYCLES AND J.A.P. ENGINES IN STOCK.

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COWEY & JONES SPEEDOMETERS.

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Universal Lightweight Model with detachable gauze screen - - -	31/6
Universal Racing Model with extension pipe - - - - - - -	35/-
Single Jet Model - - - - - -	30/-
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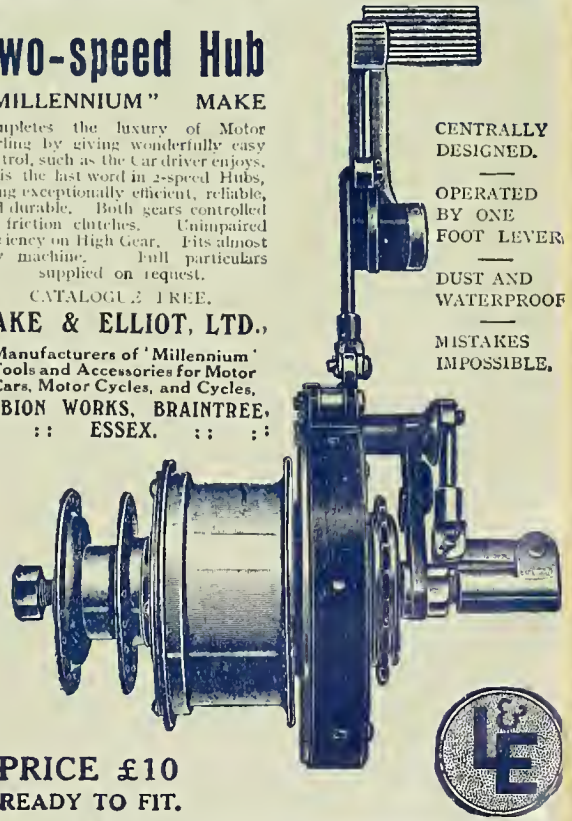
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THE belt drive has been weighed in the balance and found wanting. It is a cause of too much worry, labour, and expense, especially in rainy weather. Many experienced motor cyclists are abandoning much-loved and lauded machines because they are belt driven. The chain drive does not prove the way out; it also has faults—too well-known to need detailing—which are beyond correction. The evolution of transmission in the motor cycle is proceeding in the same direction as that in the car, namely, towards bevel gear shaft drive. It is the only system of transmission which experience has proved thoroughly efficient and reliable.

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"The Car on Two Wheels."



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(with Multiple Disc Clutch, £58)

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